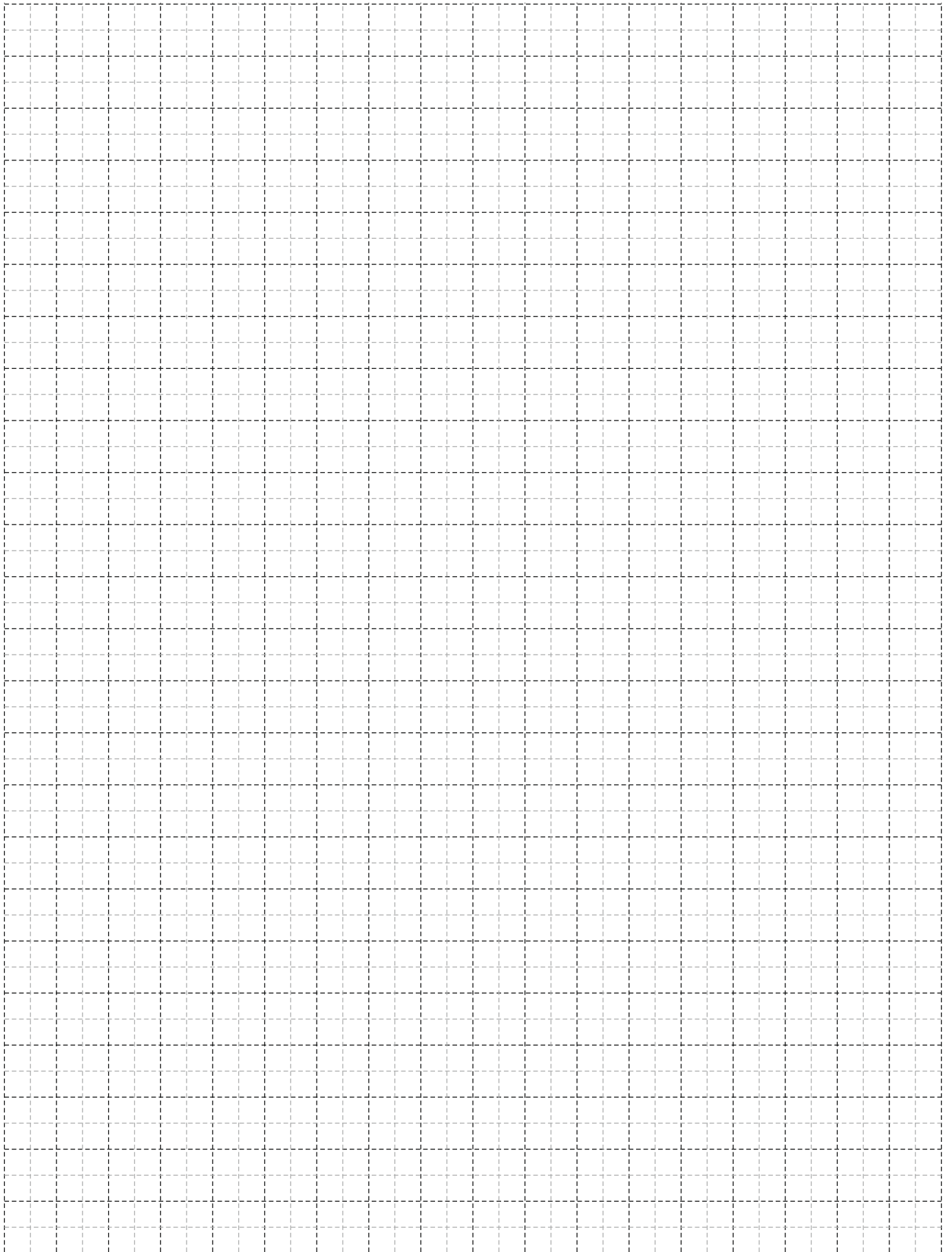


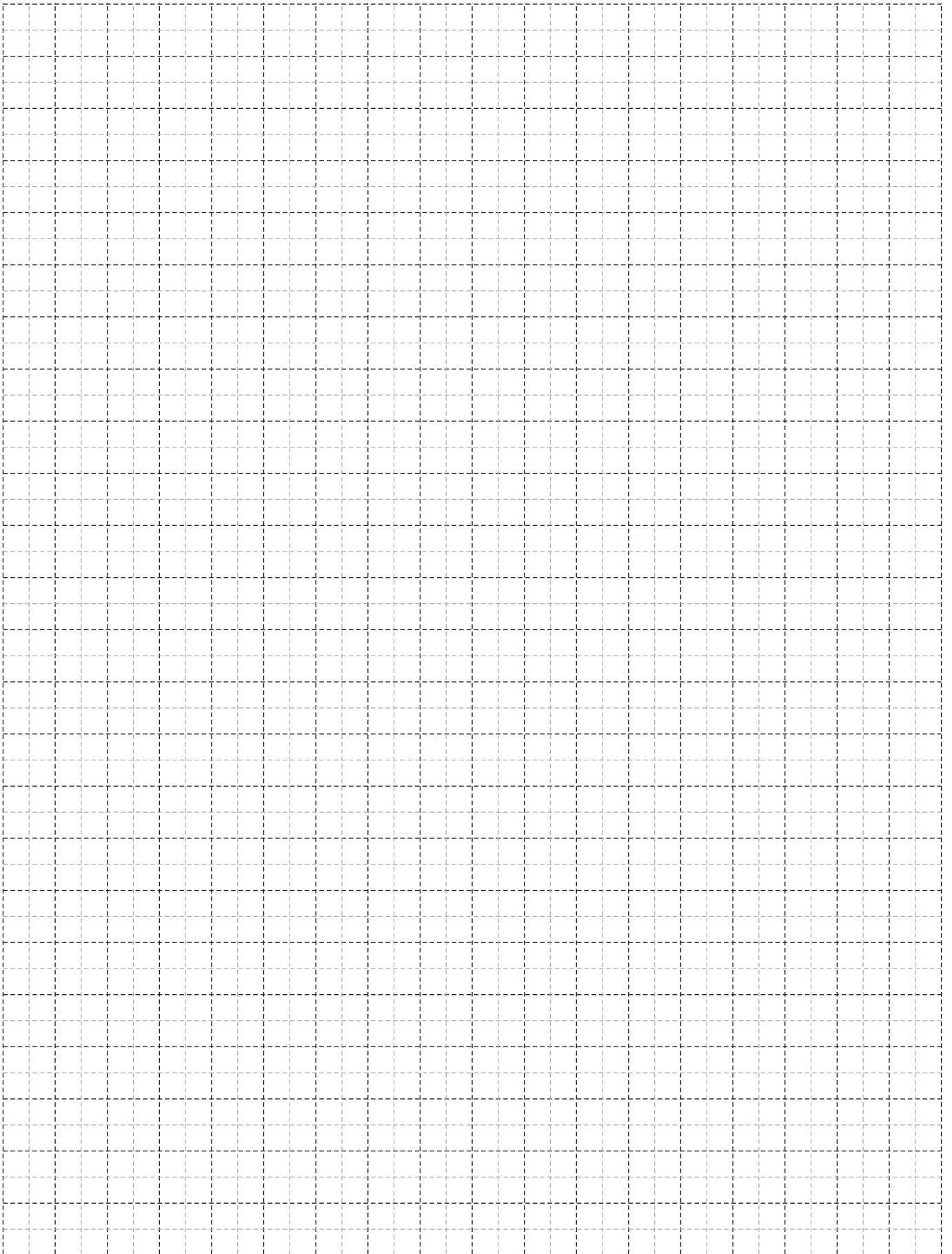
Alumil
Building excellence every day



 **SMARTIA**
M7



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ΤΕΧΝΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ TECHNICAL INFORMATION

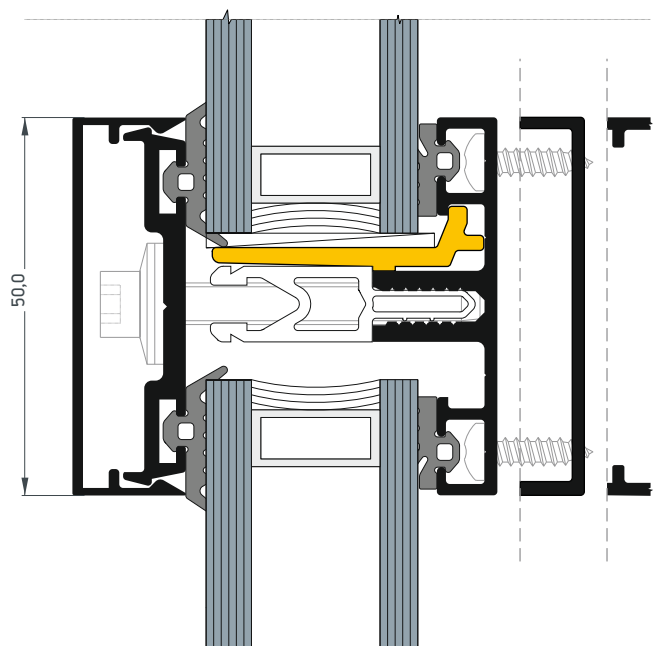
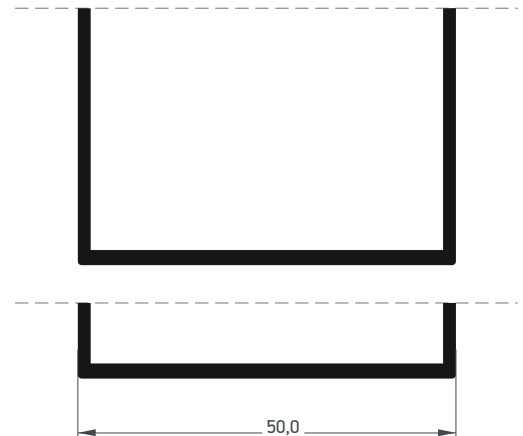
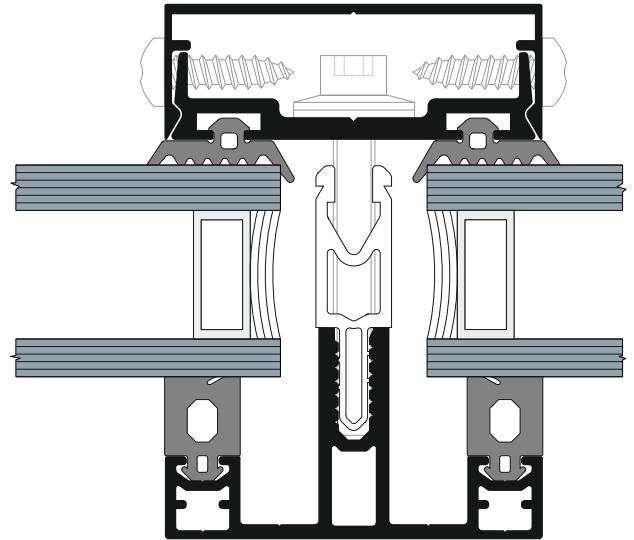
Βασικά χαρακτηριστικά | Basic characteristics

- / Κοιλώνες και τραβέρσες κατασκευάζονται από διαφορετικά προφίλ, με πλάτος 50 χιλιοστών
- / Ειδικά μονωτικά υλικά και λάστιχα EPDM για μέγιστη θερμική και ακουστική μόνωση
- / Αποτελεσματικό σύστημα αποστράγγισης για μέγιστη στεγανοποίηση
- / Δέχεται υαλοπίνακες έως 54mm
- / Δοκιμές από αναγνωρισμένα εργαστήρια δοκιμών συμβάλλουν στη διαδικασία εναπόθεσης της Σήμανσης CE
- / Προσφέρεται η δυνατότητα κατασκευής υαλοπετασμάτων Structural Silicon Glazing (SSG)
- / Δυνατότητα ενσωμάτωσης του συστήματος σκιάστρων M5600
- / Δυνατότητα ενσωμάτωσης όλων των συστημάτων της ALUMIL
- / Μεγάλη εξοικονόμηση ενέργειας χάρις στις εξαιρετικά χαμηλές τιμές U_f , ($U_f = 1,0 - 2,4 \text{ W}/(\text{m}^2 \cdot \text{K})$ - IFT Rosenheim)

Πιστοποιητικά:

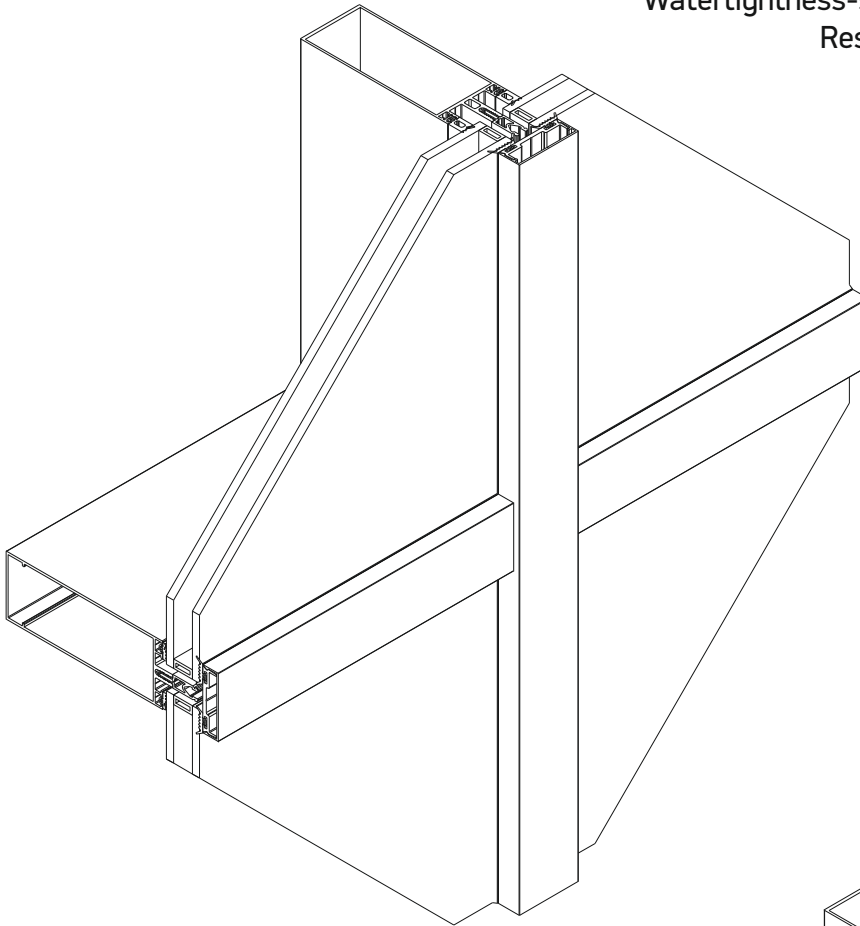
- / Ο σχεδιασμός, η διαδικασία παραγωγής, και ο ποιοτικός έλεγχος όλων των διατομών της ALUMIL είναι πιστοποιημένα με το Ευρωπαϊκό πρότυπο ISO 9001.
- / Η διαδικασία της ηλεκτροστατικής βαφής που διεξάγεται στις εγκαταστάσεις της ALUMIL είναι πιστοποιημένη από QUALICOAT και RAL (GSB).

- / Mullions and transoms are made with the different profiles with 50mm sightlines
- / Special isolator, and EPDM gaskets for high thermal and sound insulation
- / High weathertightness
- / Glazing up to 54mm
- / Comprehensive testing from recognized testing institutions contribute to the issuing of the CE mark
- / Structural Silicon Glazing (SSG)
- / Incorporates the M5600 Solar Shading system
- / Incorporates all vent systems Alumil
- / High energy savings thanks to extremely low U_f values ($U_f = 1,0 - 2,4 \text{ W}/(\text{m}^2 \cdot \text{K})$ - IFT Rosenheim)



Ift Rosenheim Test Report No.15-003425-PR01:
 Air permeability (EN12152:2002-02) - **Class AE**
 Watertightness-static (EN12154:1999-12) - **Class RE1200**
 Resistance to wind load (EN13116:2001-07)

Design load **$\pm 2.0 \text{ kN/m}^2$**
 Safety load **$\pm 3.0 \text{ kN/m}^2$**



Evidence of Performance

Air permeability, Watertightness static, Resistance to wind load

Test Report
 No. 15-003425-PR01
 (PB-B01-02-en-01)

Client ALUMIL S.A.
 Industrial Area
 61100 Kiliki
 Greece
Product Stick construction
Designation M7 Standard
Material Aluminium profiles with thermal break
Overall dimensions (W x H) 3,600 mm x 6,000 mm
Special features - / -

Results

Air permeability
 EN 12152:2002-02
Class AE

Watertightness - static
 EN 12154:1999-12
Class RE1200

Resistance to wind load
 EN 13116:2001-07
Design load
 $\pm 2.0 \text{ kN/m}^2$
Safety load
 $\pm 3.0 \text{ kN/m}^2$

Ift Rosenheim
 13.06.2016

Thomas Stefan, Dst-Ing (FH)
 Head of Testing Department
 Construction Product Testing

Thomas Krichbaum
 Operating Testing Officer
 Construction Product Testing



Basics
 EN 13030:2003-09
 Test standards
 EN 12152:2002-02
 EN 12154:1999-12
 EN 12179:2003-05
 Corresponds to the national standards (e.g. DIN EN) respectively



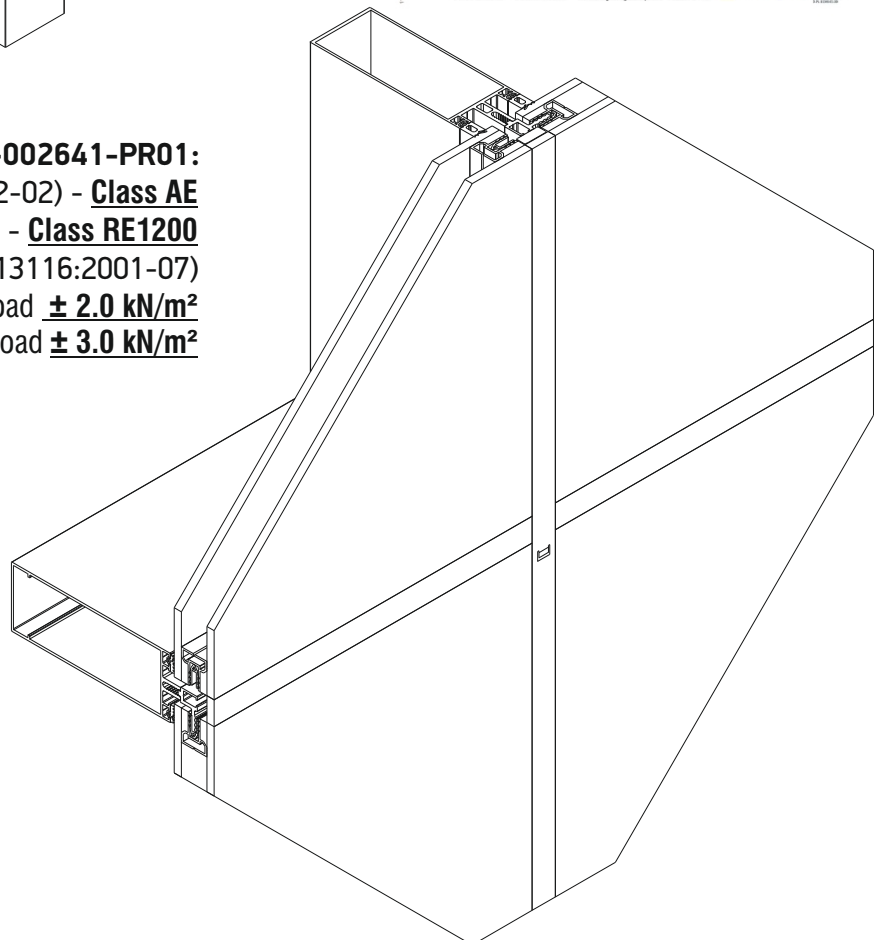
Instructions for use
 The results obtained can be used by the manufacturer for preparing the Declaration of Performance in accordance with the Construction Products Regulation 3052011/EU. The provisions of the applicable product standard have to be observed.

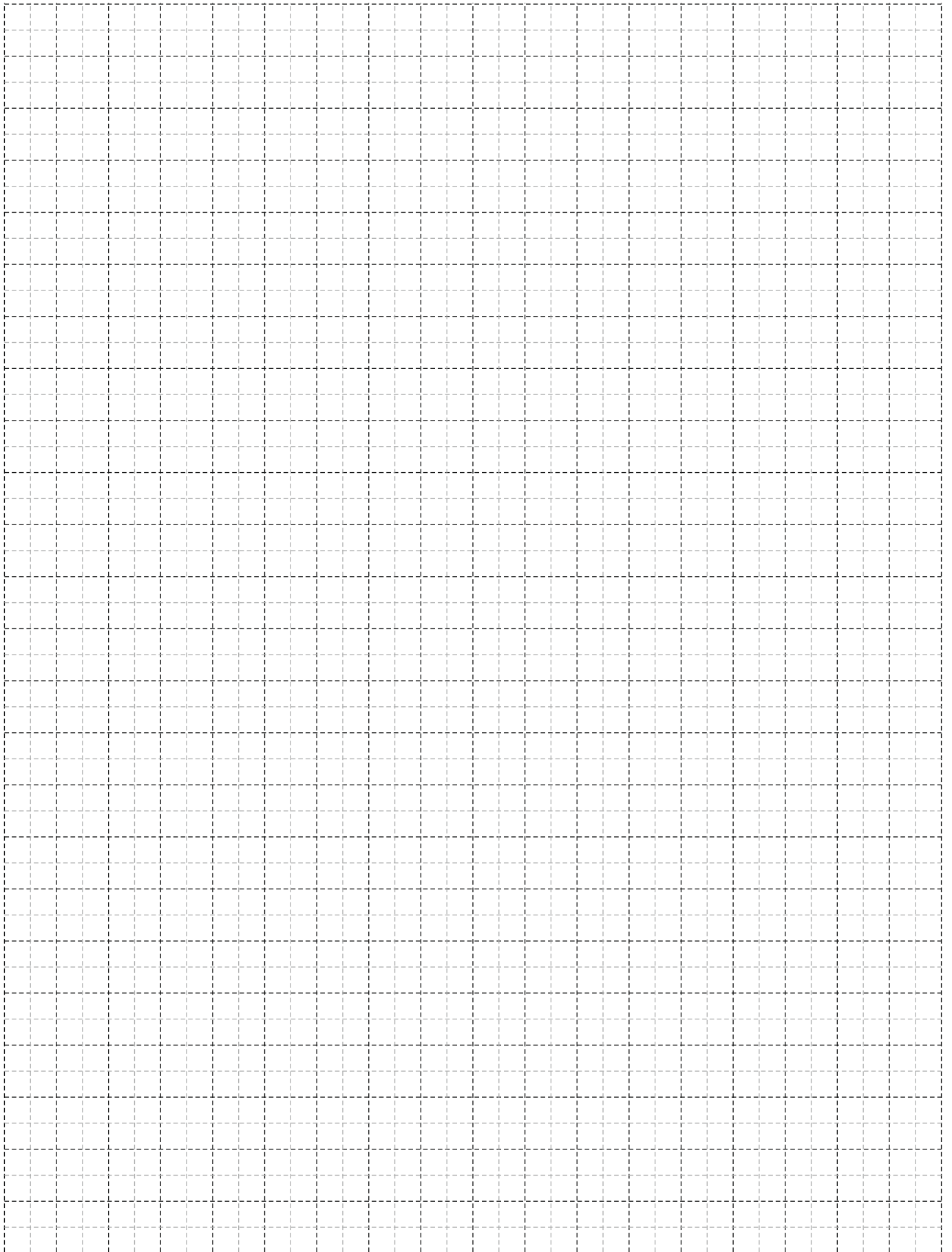
Validity
 The data and results refer solely to the tested and described specimen. Classification remains valid as long as the product and the above tests remain unchanged. The results can be extrapolated under the manufacturer's sole liability subject to observance of the relevant specifications set out by the applicable product standard. This certification does not allow any statement to be made on any further characteristics regarding performance and quality of the construction element. In particular the effects of weathering and ageing were not taken into account.

Notice on publication
 The Ift Guidance Sheet "Advertising using Ift test documents" applies. The cover sheet can be used as an abstract. The report contains a total of 46 pages.

Ift Rosenheim GmbH | Gieseler | Prüfung und Kalibrierung | EN ISO/IEC 17025
 Industriestraße 2-8 | 93049 Rosenheim | Telefon +49 (0)9301 381-0 | Zertifizierte Personelle | Ift-Gruppe | 1999
 www.ift-rosenheim.de | Zertifizierung Management Systeme - EN ISO/IEC 17021 | Ift Group, Ltd. UK | Ift Group, Ltd. USA | Ift Group, Ltd. China

Ift Rosenheim Test Report No.16-002641-PR01:
 Air permeability (EN12152:2002-02) - **Class AE**
 Watertightness-static (EN12154:1999-12) - **Class RE1200**
 Resistance to wind load (EN13116:2001-07)
 Design load **$\pm 2.0 \text{ kN/m}^2$**
 Safety load **$\pm 3.0 \text{ kN/m}^2$**





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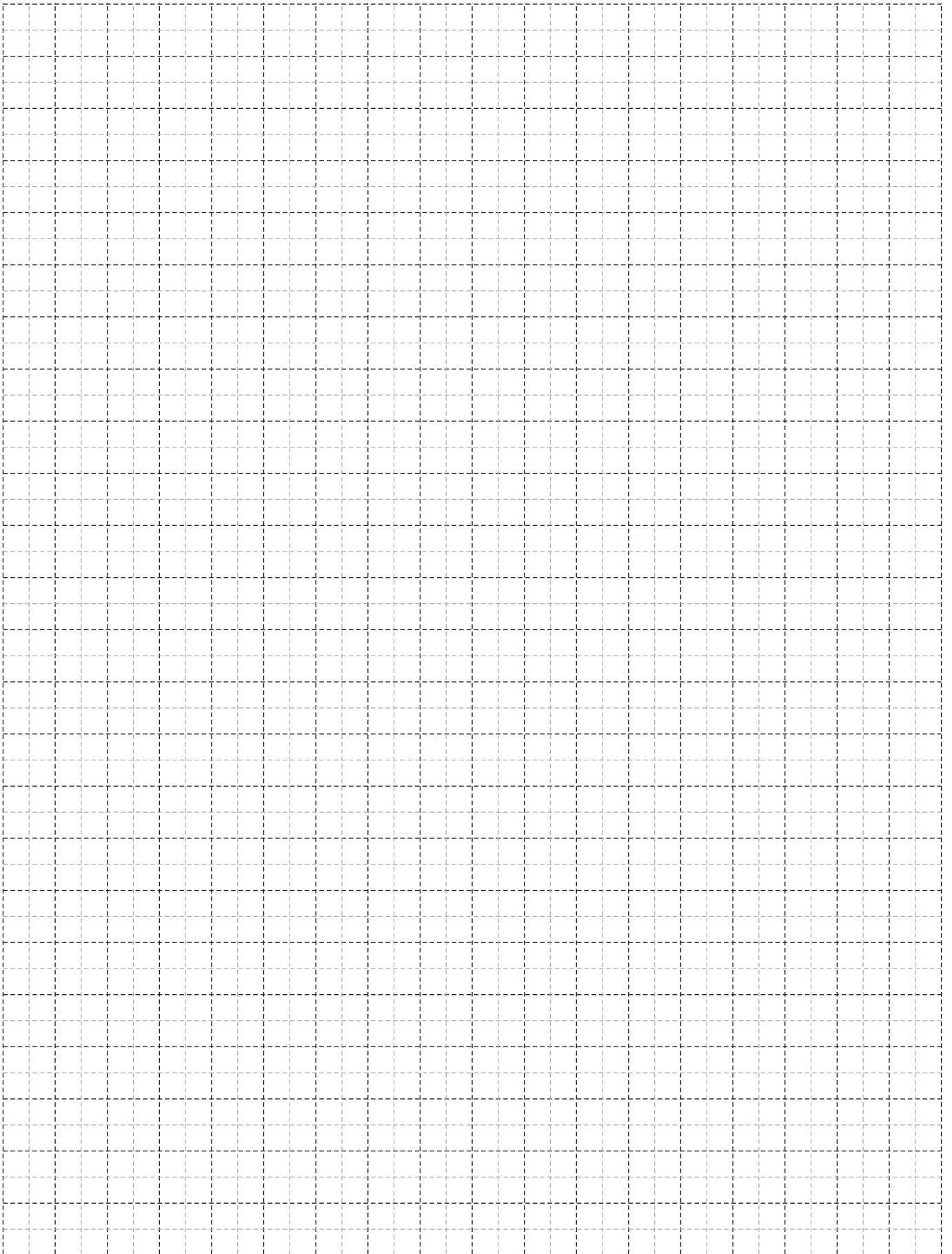
ΕΠΕΞΗΓΗΣΗ ΣΥΜΒΟΛΩΝ

SYMBOL EXPLANATION

= Γωνία επιπεδότητας	= Σύνδεσμος του αλουμινίου	= Πρεσάκι
= Γωνία σύνδεσης	= Σύνδεσμος	= Μονωτικό υλικό
= Γωνία σύνδεσης πρεσαριστή	= Γέφυρα τακαρίσματος	= Στιγμαία κόλλα
= Γωνία σύνδεσης με διπλό χτύπημα	= Ρυθμιζόμενος σύνδεσμος τραβέρας	= Μονωτική ταινία
= Γωνία σύνδεσης καρφωτή	= Πλάκα ενίσχυσης για γωνίες	= Μέγιστο πλάτος
= Γωνία σύνδεσης χυτή	= Πλάκα ενίσχυσης σύνδεσης "T"	= Μέγιστο ύψος
= Γωνία σύνδεσης μηχανική	= Ειδικό	= Εξωτερική περίμετρος
= Γωνία σύνδεσης βιδωτή	= Προφίλ ενίσχυσης	= Κύρια περίμετρος
= Γωνία σύνδεσης με REIZ	= Τάπα	= Ροπή αδρανείας x-x
= Γωνία σύνδεσης ανοξειδωτη μηχανική	= Kooltherm	= Ροπή αδρανείας y-y
= Γωνία σύνδεσης πλαστική	= Πριόνι	= Βάρος
= Γωνία για πηχάκι	= Κονδύλι	= Προφίλ
= Γωνία σύνδεσης ρυθμιζόμενη	= Ματσόλα από καουτσούκ	= Αριθμός σελίδας
= Σύνδεσμος του χυτός	= Οδηγός διάτρησης	* = Δεν υπάρχει απόθεμα
= Alignment corner	= Aluminium T - cleat	= Punch press
= Corner cleat	= T - cleat	= Sealant
= Crimp corner cleat	= Glazing bridge	= Instant glue
= Double crimp corner cleat	= Adjustable transom-mullion cleat	= Sealing tape
= Nail corner cleat	= Reinforcement plate for corners	= Width
= Cast mechanical corner cleat	= Reinforcement plate for joints	= Height
= Mechanical corner cleat	= Special	= External perimeter
= Screw corner cleat	= Reinforcement profile	= Primary perimeter
= Press corner REIZ	= End cover	= Moment of inertia x-x
= Inox mechanical corner cleat	= Kooltherm	= Moment of inertia y-y
= Plastic corner cleat	= Saw	= Weight
= Glazing holder corner	= Milling bit	= Profile
= Corner cleat, adjustable	= Rubber mallet	= Page number
= Cast T - cleat	= Drill jig	* = Not a stock item

A large, abstract graphic on the left side of the page, consisting of several overlapping diagonal bands in different shades of yellow and orange, creating a dynamic, geometric pattern.

ΕΥΡΕΤΗΡΙΟ ΠΡΟΦΙΛ PROFILE INDEX





		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M70001	50	28	248	72	1,9	5,4	817	#33
	M70002	50	67	326	150	22,2	14,9	1426	#33
	M70003	50	82	356	180	39,3	17,8	1564	#33
	M70004	50	102	396	220	72,0	21,8	1748	#33
	M70005	50	122	436	260	120,9	25,9	1956	#34
	M70006	50	142	474	300	193,4	30,4	2247	#34
	M70007	50	167	524	349	318,3	35,9	2583	#35

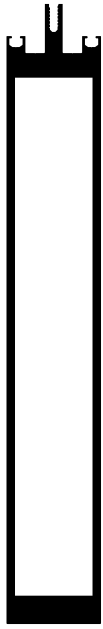


		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M71208	50	172,75	535,0	360	396,4	50,73	3332,3	#34
	M70034	50	192	588	417	505,2	43,1	3033	#34
	M70008	50	217	626	450	805,0	49,9	3595	#36
	M70073	50	217	626	450	805,0	49,9	3595	#36



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M70138	50	217	630	450	1853,7	83,5	7789	#37
	M70098	50	260	720,3	535	2788	131,18	9661	#36
	M70009	50	267	726	550	1475,2	61,0	4268	#37



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M71214	50	328	856	672	5161	164	11400	#37



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M70010	50	16,5	237	66	0,4	3,8	584	#41
	M70011	50	28	260	89	2,0	7,5	895	#41
	M70012	50	47	298	127	9,0	11,5	1084	#41
	M70083	50	53,5	311	139	12,9	12,5	1127	#41
	M70013	50	66	336	165	22,9	15,2	1254	#41
	M70014	50	81	366	195	39,7	18,1	1387	#42
	M70015	50	101	406	235	70,1	21,9	1566	#42
	M70016	50	121	446	275	113,8	26,3	1764	#42
	M70017	50	141	486	315	176,4	32,9	2079	#42
	M70018	50	166	536	365	271,4	38,4	2336	#43
	M70055	50	191	586	415	404,7	44,1	2628	#43
	M70019	50	216	636	465	559,9	49,6	2884	#44
	M70020	50	266	736	565	973,5	60,6	3397	#44



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M70037	22,5	65	251	88	15,9	2,0	1027	#45
	M70038	22,5	85	291	108	34,5	2,8	1295	#45
	M70039	22,5	105	331	128	62,5	3,5	1544	#45
	M70040	22,5	125	371	148	100,9	4,2	1770	#45
	M70041	22,5	150	435	173	178,9	5,1	2127	#46
	M70042	22,5	175	471	198	265,8	5,9	2357	#46



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M70043	22,5	200	521	223	420,2	7,0	2863	#46
	M70044	22,5	250	621	273	774,3	8,6	3430	#46
	M500130	135,9	15,3	303	135	0,3	68,4	1037	#47
	M70052	207,3	15,3	254	58	0,3	227,0	1518	#47
	M70078	250,0	45,6	771	0	43,6	2781,7	12521	#49
	M500087	50,0	13,6	178	0	0,6	8,6	824	#48
	M500088	70,0	13,6	271	0	0,9	21,6	1236	#48
	M500065	110,0	13,6	371	0	1,2	70,6	1641	#48
	M500089	140,0	13,6	431	0	1,3	132,0	1884	#48



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M109422	20,5	7,0	78	21	0	0,3	263	#55
	M70137	45,6	70,6	0	0	49,2	10	2119	#38
	M70132	45,6	109,6	434,3	220,5	152,47	11,52	2751,6	#38
	M70131	45,6	120,9	482,3	268,5	253,44	12,45	3140,4	#38
	M70029	250	45,6	700	0	94,5	1798,2	7530	#39
	M70030	165,8	45,6	484	0	82,5	789,7	7672	#39
	M70118	157,6	45,6	410,1	0	46,53	164,6	4320,7	#39
	AL70002	159,6	162	836,1	128	1373	314	11595,4	#40
	M70053	159,6	120	555	0	250,7	233,9	4265	#49



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg.σελ.
	M70027	31,8	45,6	227	0	11,8	3,3	1138	#49
	M70028	38,2	45,6	230	0	14,4	8,5	1717	#49
	M70097	32,5	49,0	188	0	13,6	4,3	1273	#49
	M70025	47,4	11,6	164	0	0,1	4,1	481	#50
	M510007	47,4	8,3	147	0	0,1	3,1	429	#50
	M70025	48,2	29,6	247,7	0	2,17	8,82	800,5	#50
	M10940	55,0	6,3	163	68	0,1	6,0	554	#50
	M500113	50	6,8	137	59	0,1	4,6	619	#50
	M500018	48,2	8,5	116	52	0,1	2,2	558	#50
	AL500001	4,5	34,8	84	0	1,0	0,1	287	#55
	M109421	36,0	12,1	107	23	0,1	1,0	276	#55
	M500122	55,0	10,0	138	43	0,1	2,9	368	#55
	M9010	25,0	7,2	75	27	0,1	0,3	132	#55
	M9351	16,9	4,6	48	17	0	0,1	70	#55
	M70129	83,54	12,1	229,3	0	0,24	10,12	563,7	#74
	M500081	46,4	12,9	147	0	0,1	3,6	507	#50
	M500082	50,0	13,5	140	70	0,2	2,8	257	#51
	M9935	55,2	14,1	195	72	0,2	2,7	295	#57
	M9934	52,3	12,5	195	0	0,1	3,2	457	#57
	M9932	48,7	16,7	175	57	0,2	1,5	260	#57
	M9931	47,0	14,7	197	0	0,2	2,6	484	#57
	M10841	111,5	26	319	130	0,8	34,0	835	#50



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M109401	79,5	21,6	339	86	1,3	31,7	1342	#58
	M109402	93,7	25,3	372	104	2,1	48,4	1508	#58
	M109403	106,8	29,4	405	123	3,6	68,8	1660	#58
	M109404	128,6	39,3	477	159	9,9	121,4	1978	#58
	M70140	168	44	548,4	201,6	17,2	280,6	2641	#58
	M500080	50	21	190	91	0,47	4,38	324	#51
	M70031	50	13,2	150	76	0,1	3,1	264	#51
	M500053	50	15	166	79	0,2	3,7	292	#51
	M500063	50	18	178	85	0,3	4,0	307	#51
	M500077	50	38,6	192	105	2,4	6,6	570	#52
	M500078	50	50	228	141	6,7	10,0	705	#52
	M500079	50	100	302	216	43,4	13,2	1119	#52
	M70054	50	100	333	243	54,5	18,2	1316	#52
	M70220	50	113,6	408,4	275	87	30,1	724	#53
	M70223	50	300	780	662	82,5	1504,1	1850,9	#53



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	4000004	24,7	15,8	96,7	0	0,23	0,69	332	#56
	M10968	29,7	15,8	107	0	0,3	1,2	366	#56
	4000022	26,2	20,2	118,5	0	0,52	0,91	393,7	#56
	4000023	26,2	24,2	134,5	0	0,90	0,97	436,9	#56
	M109680	45,2	14,6	144	0	0,3	3,9	491	#56
	M500097	20,9	4,5	50	0	0	0,2	128	#56
	M500135	20,9	7,2	55	0	0	0,2	218	#56
	M109683	24,8	21,3	124	0	0,5	0,6	348	#56
	M10969	20	10	88	0	0,1	0,2	174	#56
	M109690	26,8	21,3	154	0	0,5	0,6	327	#56
	M109685	22,5	26,7	127	29	1,2	0,9	526	#56
	M500098	8,6	4,4	37	0	0	0	45	#56
	S77116	8,2	13,3	50,3	12	0,05	0,03	95,5	#75
	M70036	33,1	51,8	204	0	4,8	1,3	818	#45
	M500055	33,1	23,5	111	0	0,6	1,1	430	#45



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M70026	35,9	8,6	85	0	0	1,0	262	#54
	M70130	36,2	8,6	94,9	0	0,03	1,49	288,4	#54
	M72017	50,12	8,6	113,1	0	0	2,45	322,9	#54
	M70049	57,9	8,6	129	0	0	3,7	365	#54
	M70079	35,9	23,6	158	0	1,0	3,4	847	#54
	M70080	54,7	23,6	220,1	0	1,5	10,1	1213,8	#54
	M70085	58,7	23,6	203,6	0	1,66	15,21	1324,6	#54
	M70021	50	44	385	111	5,2	6,4	1160	#57
	M10960	10,0	11,6	57	0	0,1	0,1	122	#59
	M70045	10,0	13,5	62	4	0,1	0,1	116	#57
	M70046	10,0	12,4	60	5	0,1	0,1	113	#57
	M70047	10,0	11,8	59	5	0,1	0,1	111	#57
	M70048	10,0	11,0	58	6	0,1	0,1	109	#57
	M10957	50,1	15,7	141	0	0,3	4,4	562	#59
	M10958	52,8	16,1	142	0	0,3	4,2	563	#59
	M70022	10,0	10,9	70	9	0,1	0,1	120,5	#54
	M70134	10,0	19,9	79,6	34,7	0,24	0,10	219,2	#54
	M70135	10,0	27,9	96,6	51,7	0,73	0,15	288,1	#54
	M70136	10,0	36,4	113,6	68,7	1,6	0,2	356,9	#54
	15x10x1,5	15,0	10,0	50	0	0,09	0,18	178,2	#80
	20x15x1,3	20,0	15,0	70	0	0,5	0,3	227	#80
	30x15x1,3	30,0	15,0	90	0	0,6	1,8	443	#80
	M70221	37,0	15,0	104	0	0,67	3,0	517,4	#80
	40x20x1,2	40,0	20,0	120	0	0,96	2,87	373,2	#80
	40x20x1,2	40,0	20,0	120	0	0,96	2,87	373,2	#80



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M9984	45,4	37,6	198	64	3,4	7,4	800	#60
	M10982	56,7	54,5	279	59	7,3	12,8	1145	#60
	M70077	72	83	375,5	102,1	19,48	1,65	1782	#60
	M70050	124,2	61	461	46	17,0	123,8	1995	#61
	M70051	113,5	50,5	329	90	18,3	95,0	1923	#61
	M70023	102,2	61	417	46	14,3	75,5	1846	#62
	M70024	91,5	50,5	329	90	15,4	55,4	1767	#62
	S67508	51	67	344,7	92,1	24,68	5,80	1223,6	#63
	S67936	73	75	430	145	38,50	10,90	1493	#63
	M70122	50,5	109,1	364,1	108,4	82,98	16,49	1844,5	#64
<small>*Only for Parallel projected outward window *Μόνο για παράρτητη προβολή</small>									
	M70123	58,6	121,65	463,4	46	94,44	13,97	1785,5	#64
<small>*Only for Parallel projected outward window *Μόνο για παράρτητη προβολή</small>									



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M109426	87,3	72,0	415	59	19,1	47,0	1702	#65
	M109910	62,9	37,6	254	58	17,4	6,1	1229	#65
	M70032	98,5	58,6	426	46	12,0	55,4	1665	#66
	M70033	86,5	50,5	326	80	12,8	44,7	1544	#66
	S67584	109	67	468,2	198,7	46,01	53,81	2094	#67
	S67586	71	67	350,6	164,7	34,66	24,32	1796	#67
	S67582	109	67	472,2	198,3	46,49	54,95	2131	#68
	M500126	70,2	63,9	390	110	9,1	29,8	1490	#76
	M500129	83,6	52,9	391	23	8,0	33,2	1650	#76
	M10837	97,5	89,7	562	98	54,8	48,7	2114	#76
	M10840	86,9	86,8	495	70	39,8	47,0	2191	#76



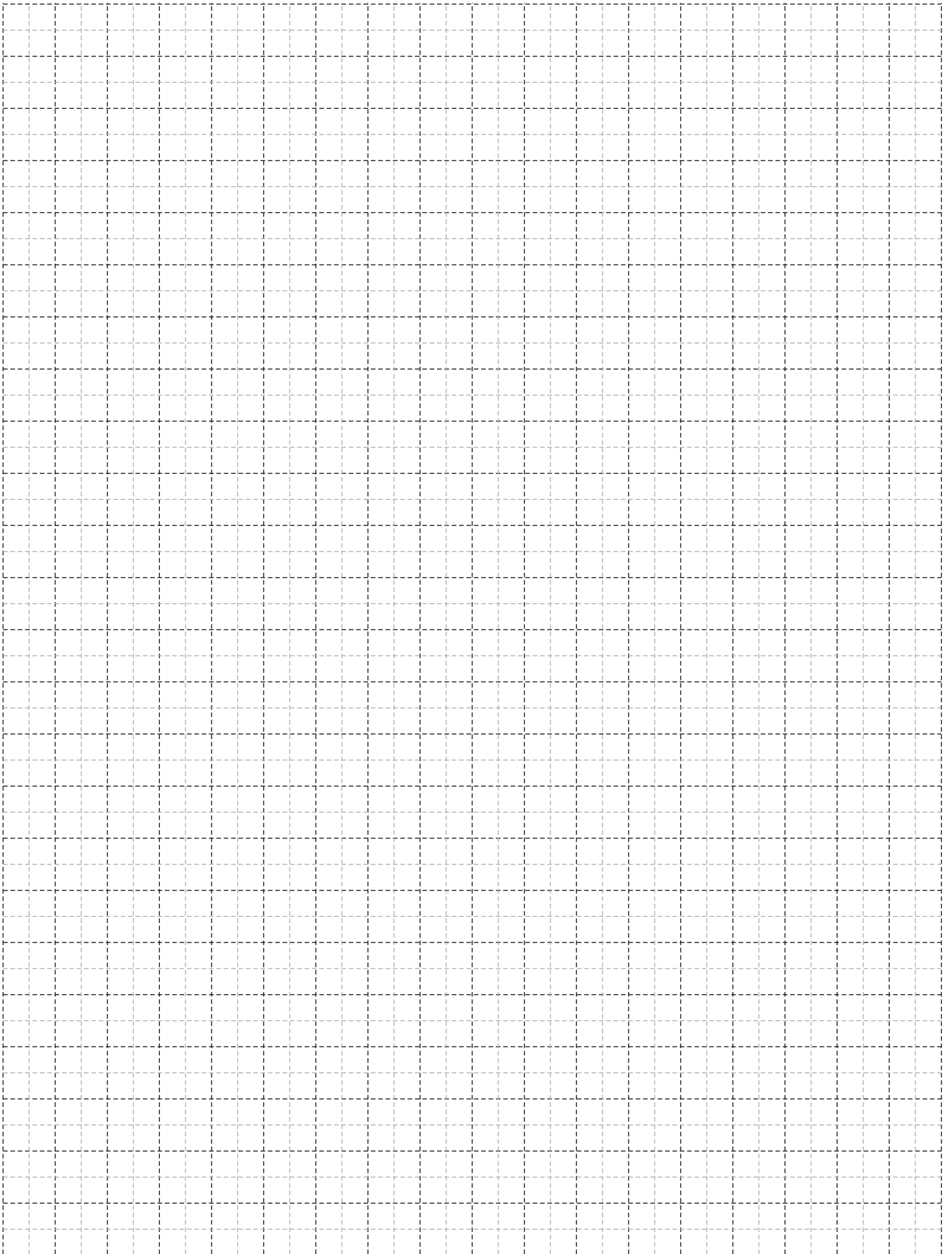
		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M70124	68	49,6	331,2	95,6	11,40	13,33	1307	#74
	M70127	61,9	56,3	344	0	16,61	6,71	1167,8	#74
	S67774	14	67	242,7	69,3	10,91	0,46	714	#75
	S67334	86	67	384,3	223	26,24	40,1	1940,2	#70
	S67336	86	67	380,8	213	30	38,8	2099	#69
	S77334	86	77	400,1	223	37	40,76	2000,5	#71
	S77582	109	77	472,4	198,3	66,72	65,25	2131	#71
	S77336	86	77	396,3	217	41,7	42,24	2235	#72
	S77584	109	77	465,1	198,7	65,9	16,7	2181	#72
	S95778	89	95	447,8	143	61,3	59,6	2409,1	#73



		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	S95004	89	95	632,6	181,5	123	96,1	2941	#73
	S95776	89	95	448,3	143	68,5	60,84	2660,3	#74
	S95006	114,4	95	632,6	184,4	122,4	96,1	2941	#74
	M71215	14,74	14,3	68,4	0	0,16	0,14	181,1	#55
	M500099	93,3	25,7	262	10	3,0	17,7	935	#79
	M500070	80,5	25,7	239	5	2,9	15,1	892	#79
	M500071	76,5	25,7	231	5	2,7	12,8	870	#79
	M500072	74,5	25,7	227	5	2,6	11,8	860	#79
	M500073	72,5	25,7	223	5	2,5	10,8	850	#79
	M500074	68,5	25,7	230	5	2,1	9,0	806	#79
	M71118	24	20	90,3	0	2,08	1,23	643	#82
	M71120	32	20	106,5	0	4,45	1,51	691	#82
	M9317	20,0	15,7	85	29	0,1	0,3	180	#55
	M10930	22,0	28	152,7	30,7	0,53	0,74	279,7	#55

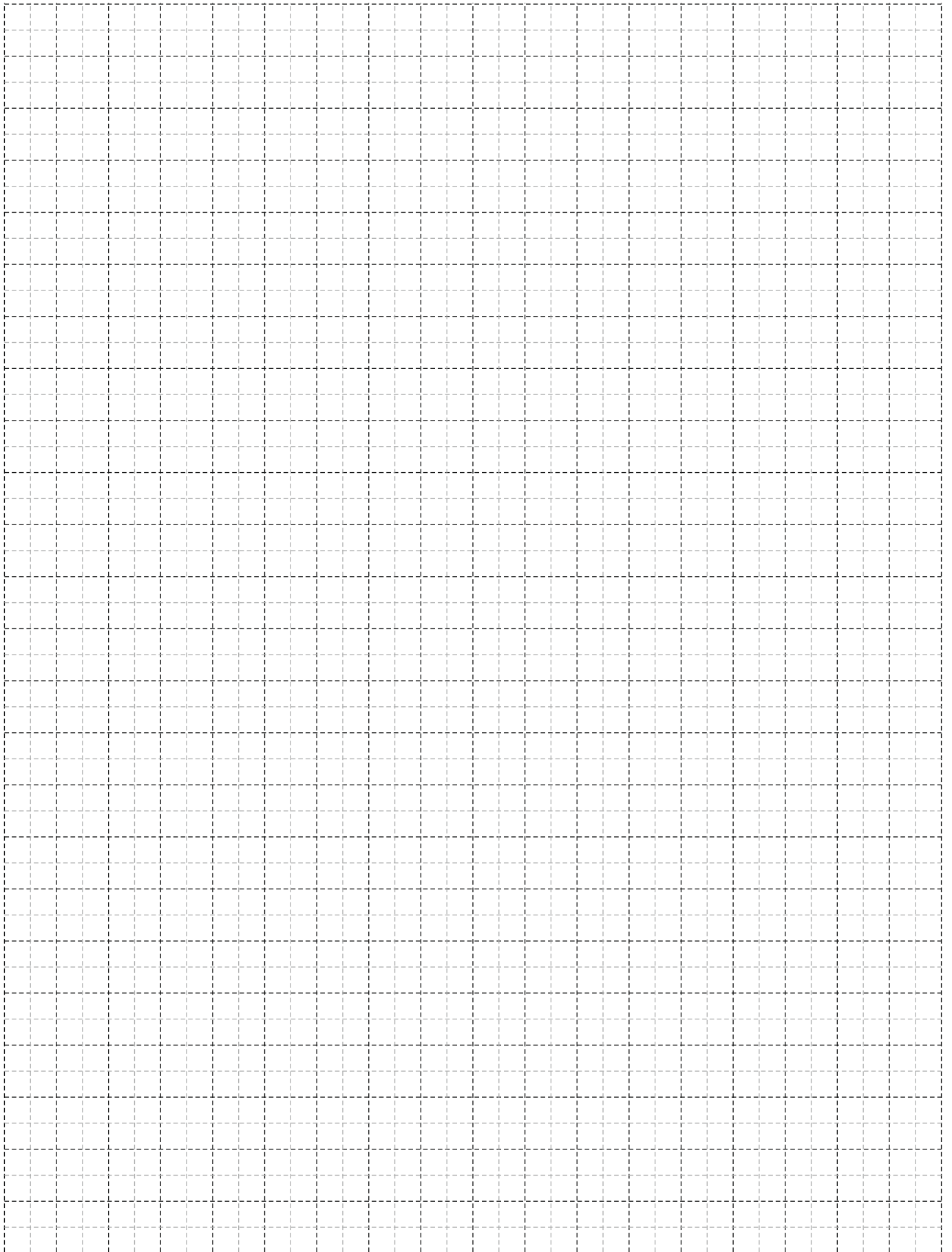


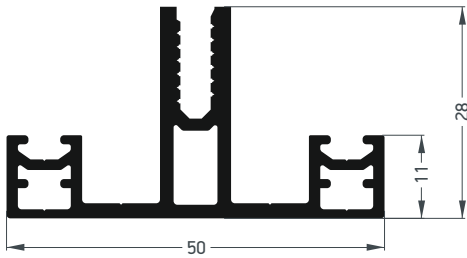
		mm	mm	mm	mm	cm ⁴	cm ⁴	gr/m	pg:σελ.
	M10963	84,8	68,5	506	139	36,2	63,7	1871	#59
	M10964	14,3	49,3	160	0	5,6	0,5	539	#59
	M71121	70,9	9	220,7	85	0,28	11,93	656	#82
	M71967	48,8	6,7	121	0	3,30	0,03	459	#82
	M9970	36,6	51,7	181	74	2,4	2,2	313	#81
	M9962	72,6	48,0	359	121	5,1	14,4	783	#81
	M9961	186,5	62,5	606	84	9,7	170,9	1178	#81



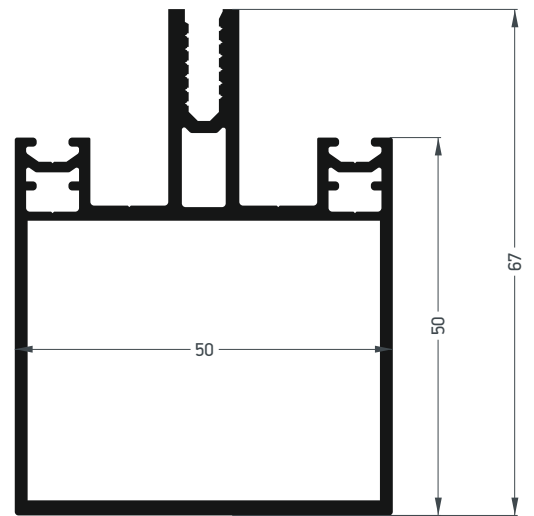


ΠΡΟΦΙΛ 1:1
PROFILES 1:1

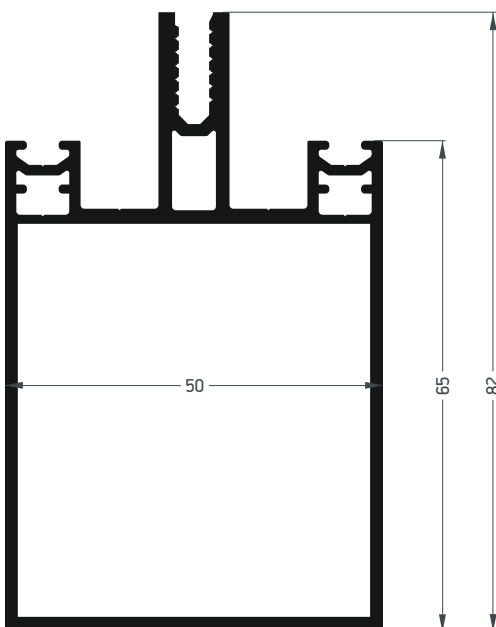




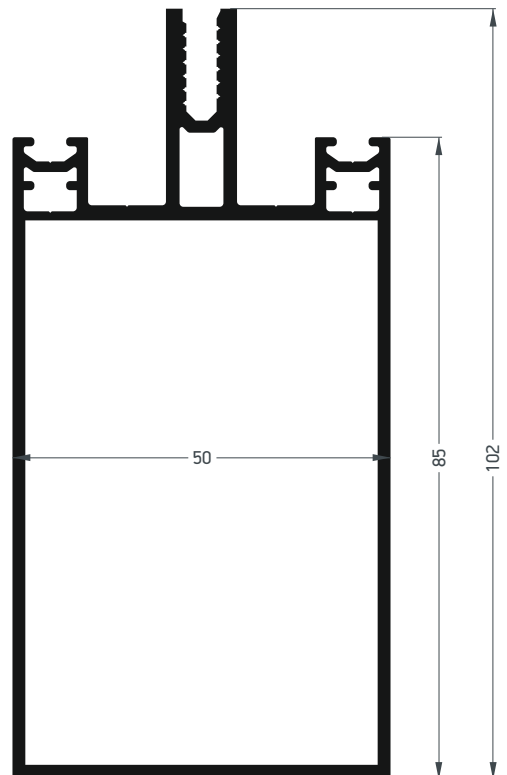
M70001	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	817 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	5,4 cm ⁴



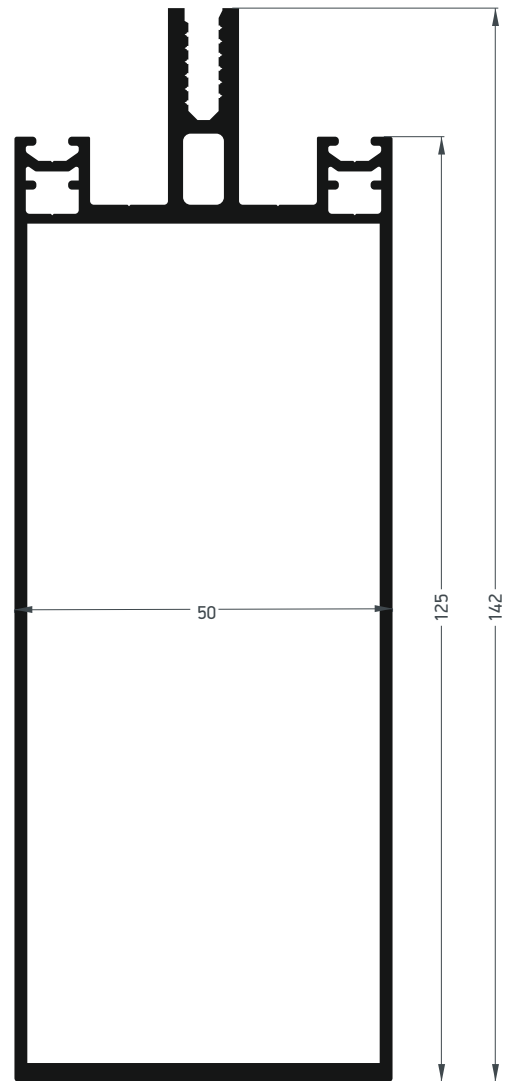
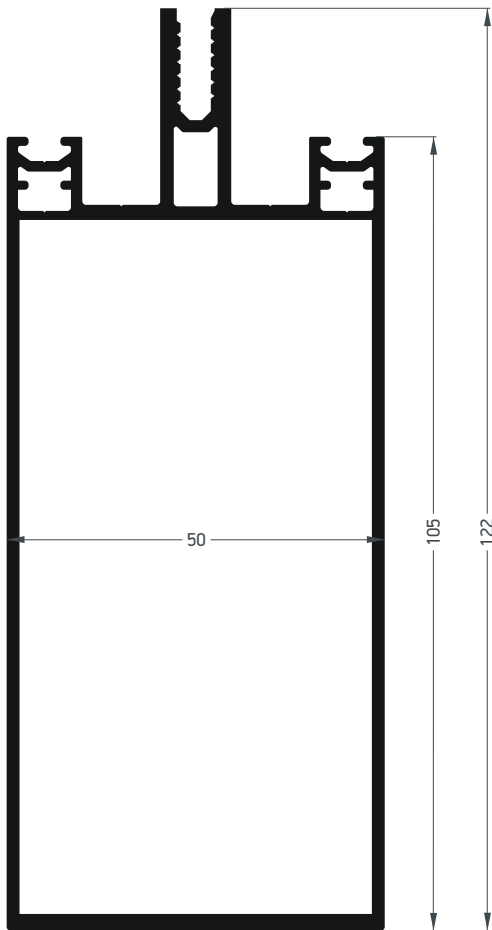
M70002	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	1426 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	22,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	14,9 cm ⁴



M70003	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	1564 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	39,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	17,8 cm ⁴

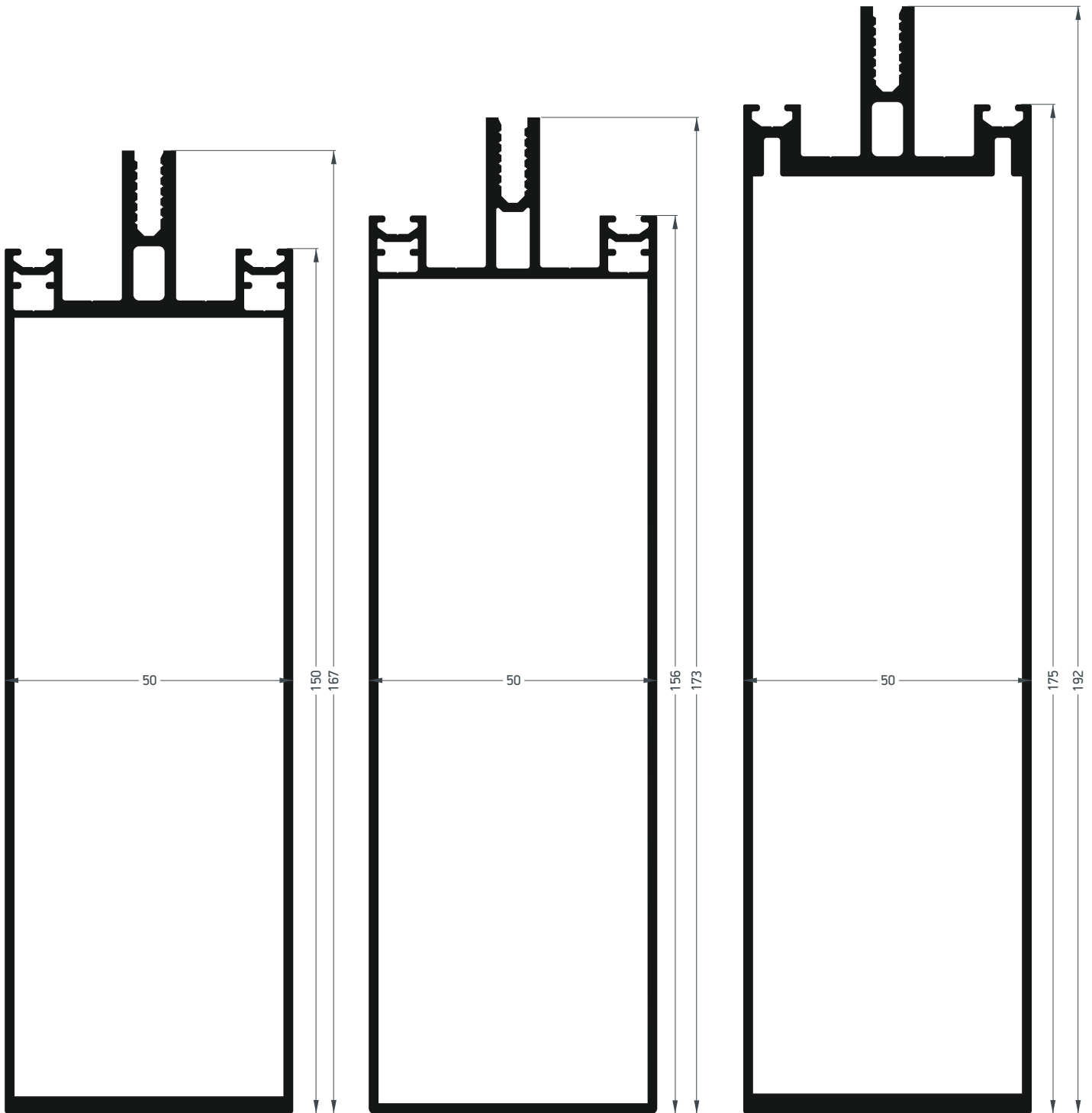


M70004	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	1748 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	72,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	21,8 cm ⁴



M70005	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	1956 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	120,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	25,9 cm ⁴

M70006	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	2247 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	193,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	30,4 cm ⁴

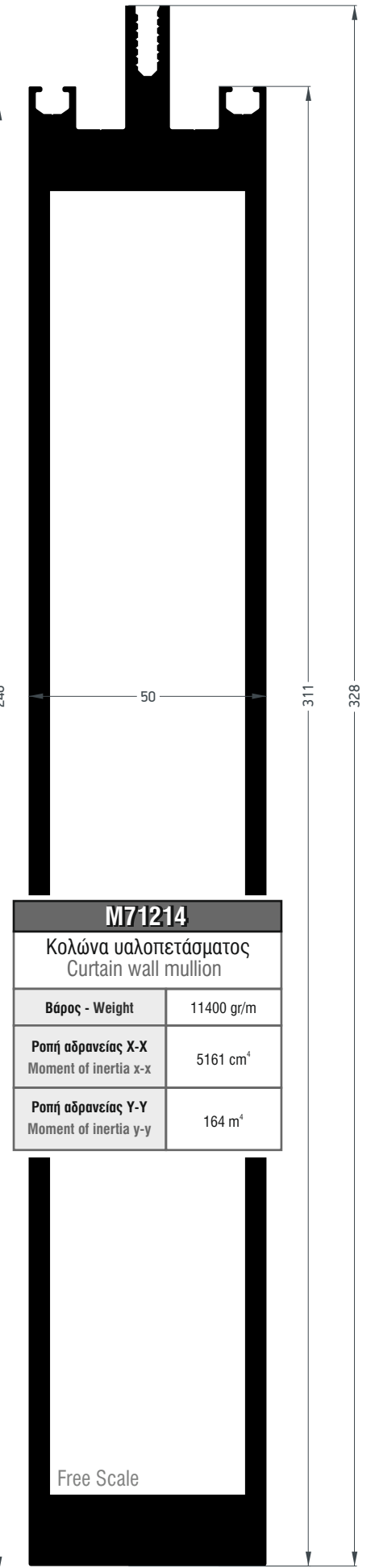
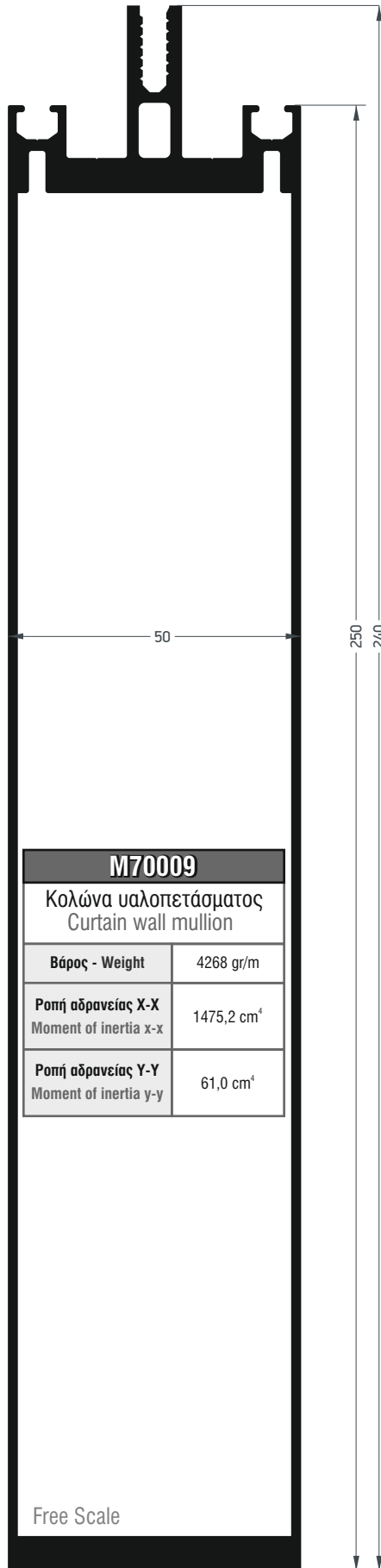


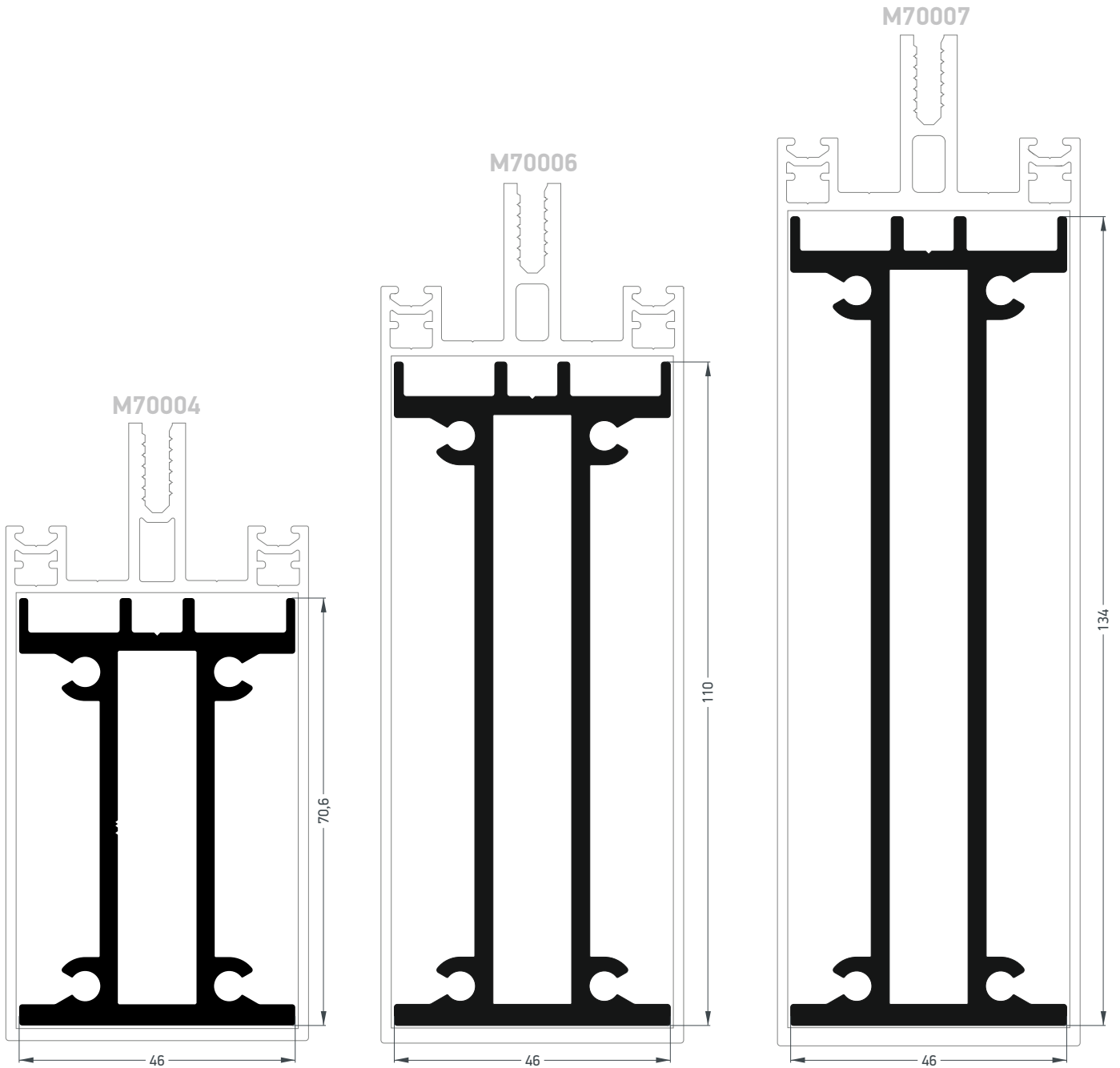
M70007	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	2583 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	318,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	35,9 cm ⁴

M71208	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	3332,3 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	396,36 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	50,73 cm ⁴

M70034	
Κολώνα υαλοπετάσματος Curtain wall mullion	
Βάρος - Weight	3033 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	505,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	43,1 cm ⁴





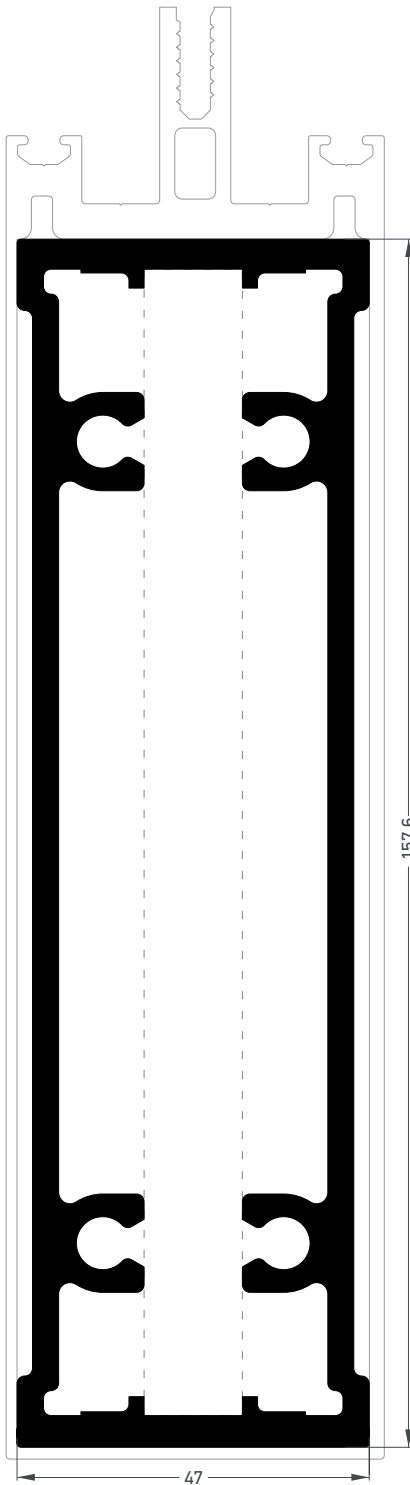


M70137	
Πυρήνας Γαλοπετάσματος Curtain wall sleeve core profile	
Βάρος - Weight	2118,9 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	49,15 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	10,0 cm ⁴

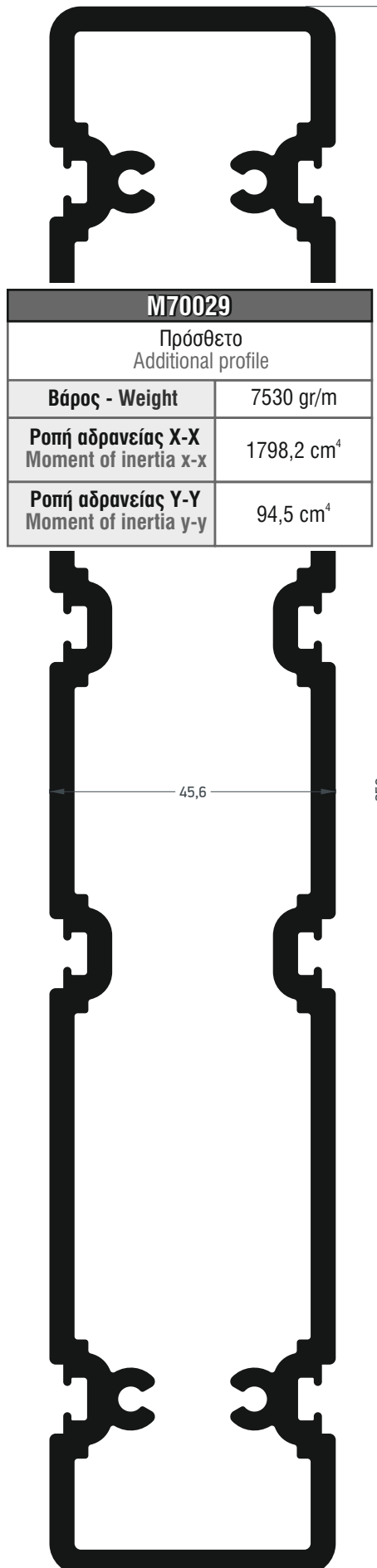
M70132	
Πυρήνας Γαλοπετάσματος Curtain wall sleeve core profile	
Βάρος - Weight	2751,6 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	152,47 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	11,52 cm ⁴

M70131	
Πυρήνας Γαλοπετάσματος Curtain wall sleeve core profile	
Βάρος - Weight	3140 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	253,44 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	12,45 cm ⁴

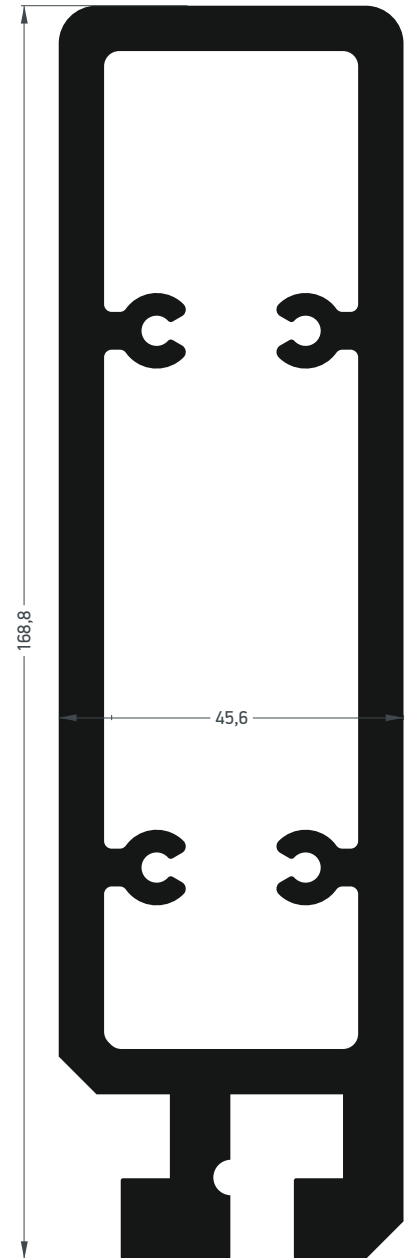
M70034



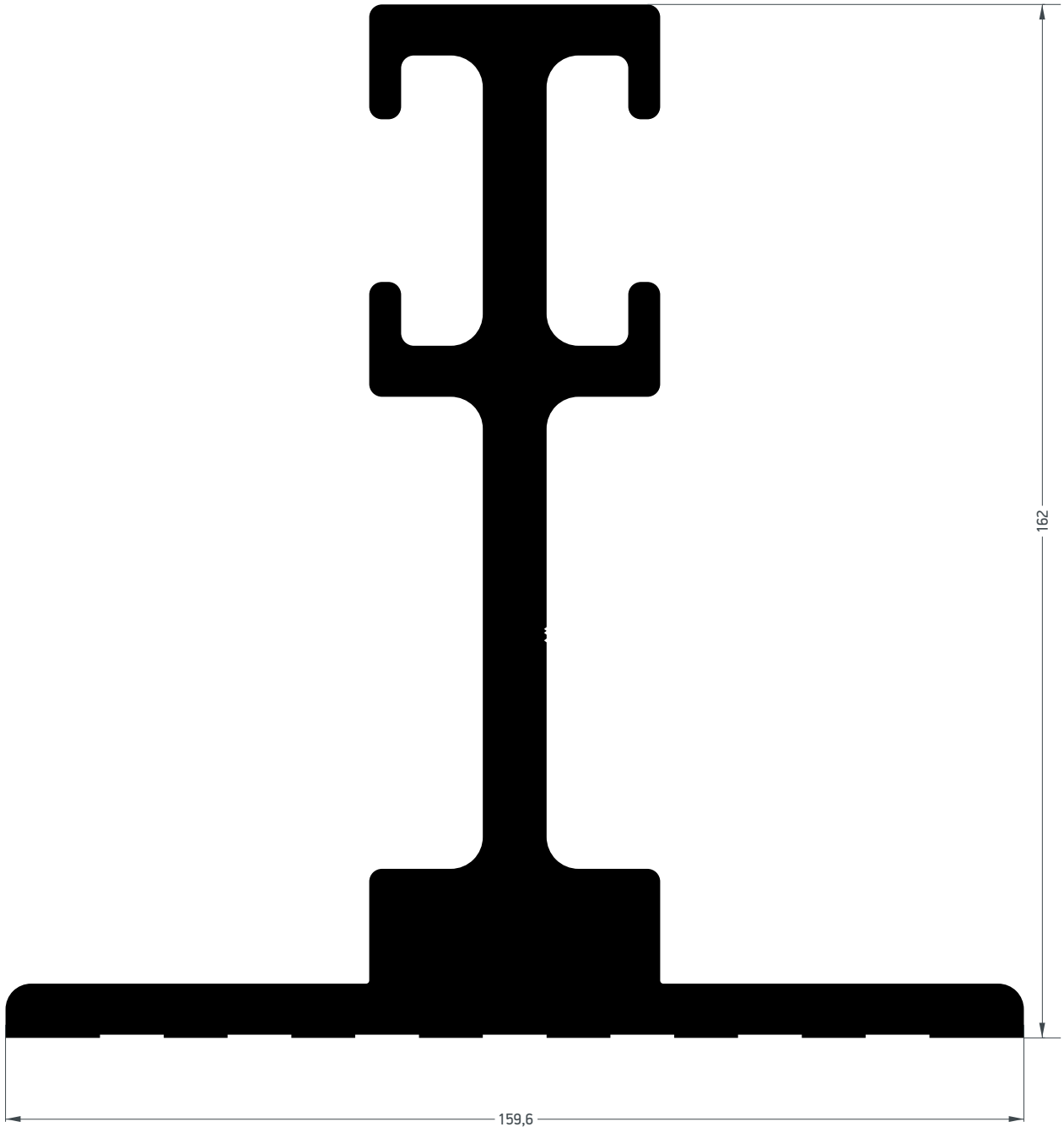
M70118	
Πυρήνας υαλοπετάσματος Curtain wall sleeve core profile	
Βάρος - Weight	4320,7 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	46,53 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	470,48 cm ⁴



M70029	
Πρόσθετο Additional profile	
Βάρος - Weight	7530 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1798,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	94,5 cm ⁴



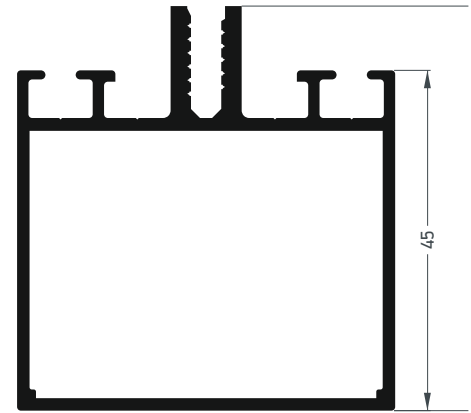
M70030	
Πρόσθετο Additional profile	
Βάρος - Weight	7672 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	789,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	82,5 cm ⁴



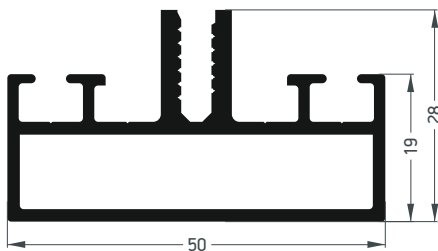
AL70002	
Πρόσθετο Additional profile	
Βάρος - Weight	11595,4 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1373,07 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	313,93 cm ⁴



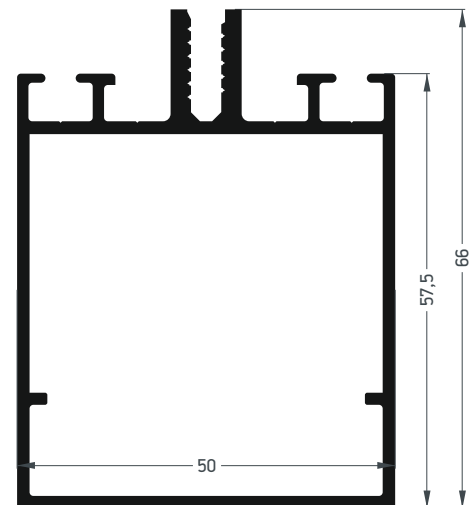
M70010	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	584 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,8 cm ⁴



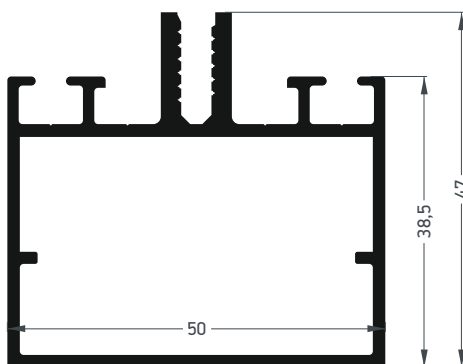
M70083	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	1126,9 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	12,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	12,5 cm ⁴



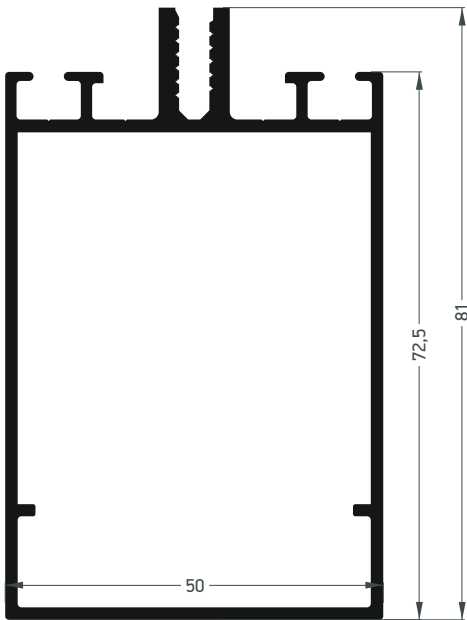
M70011	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	895 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	7,5 cm ⁴



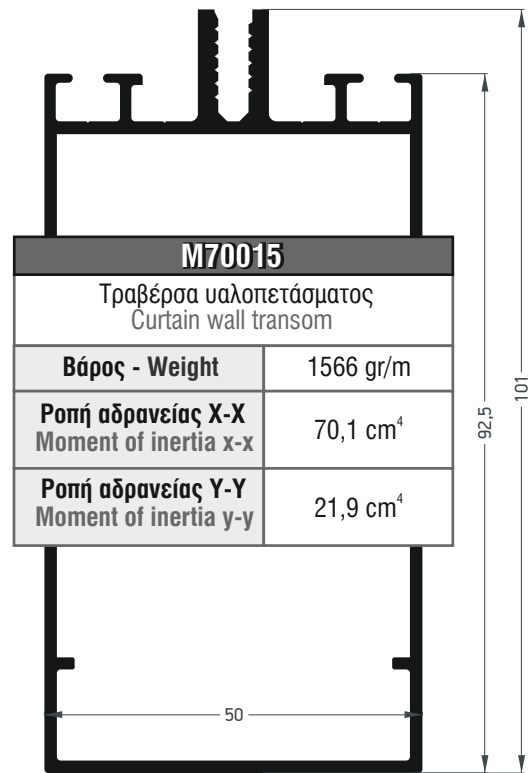
M70013	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	1254 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	22,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	15,2 cm ⁴



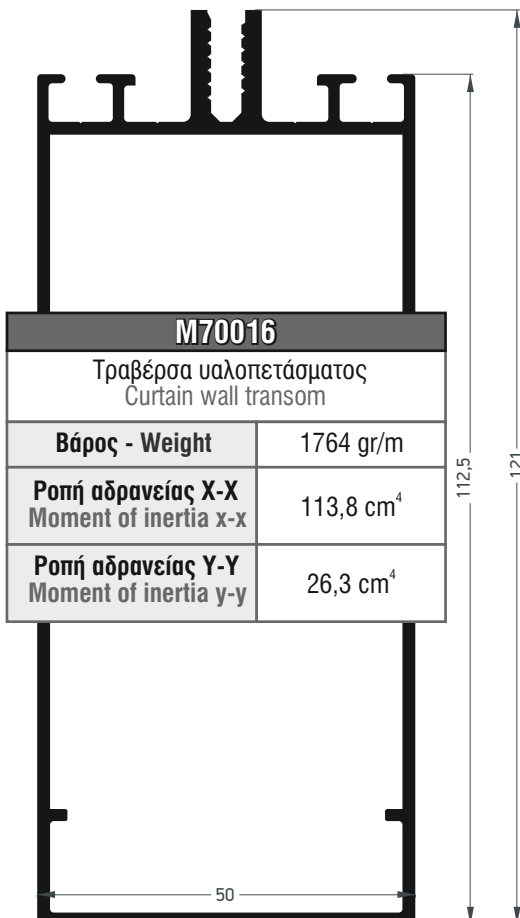
M70012	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	1084 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	9,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	11,5 cm ⁴



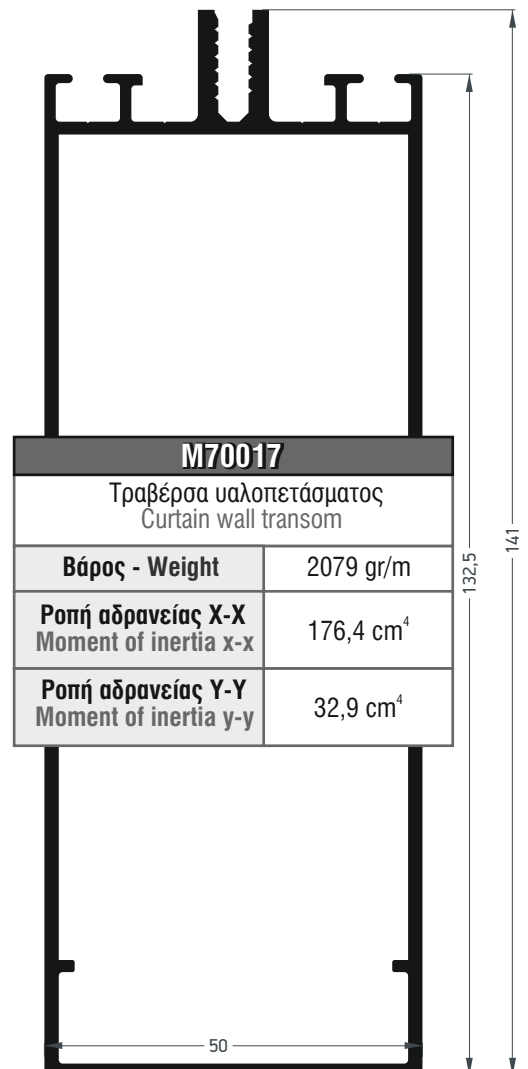
M70014	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	1387 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	39,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	18,1 cm ⁴



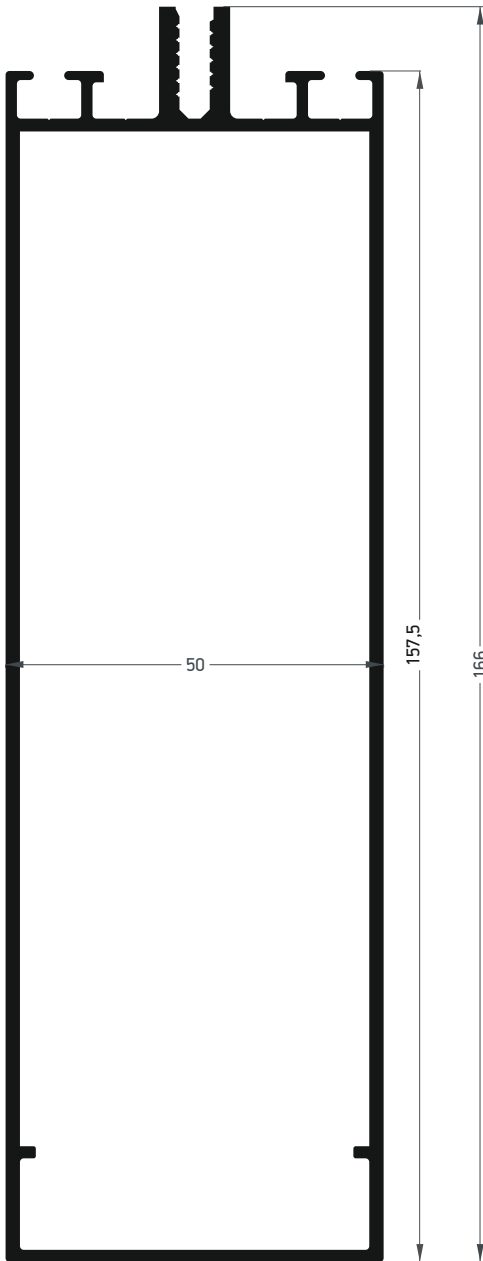
M70015	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	1566 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	70,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	21,9 cm ⁴



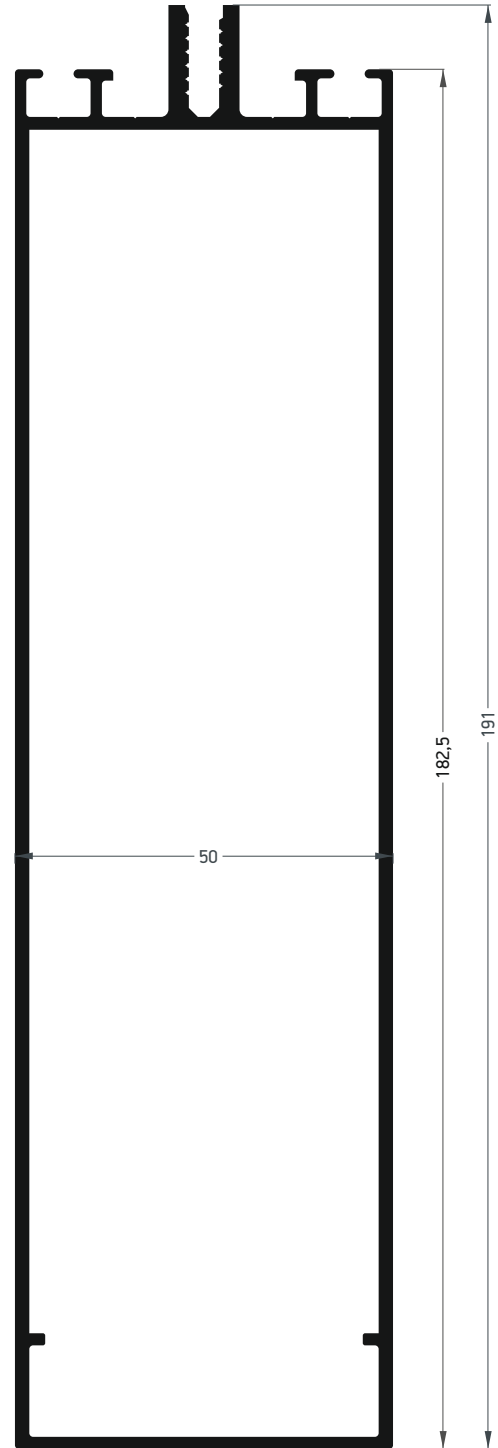
M70016	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	1764 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	113,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	26,3 cm ⁴



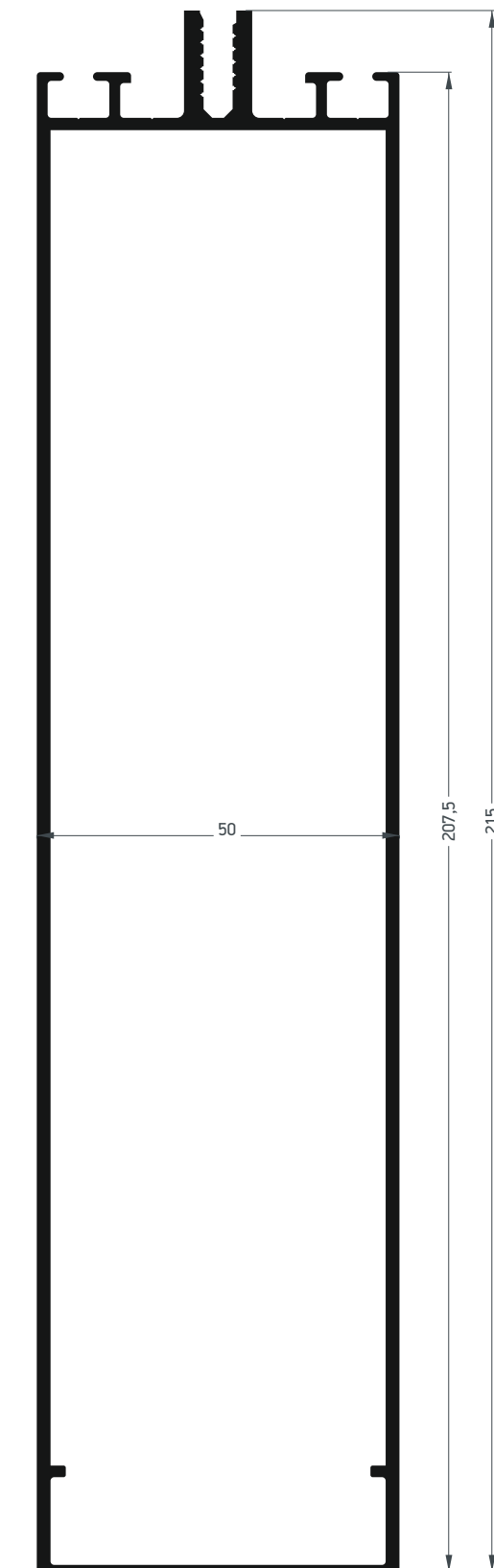
M70017	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	2079 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	176,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	32,9 cm ⁴



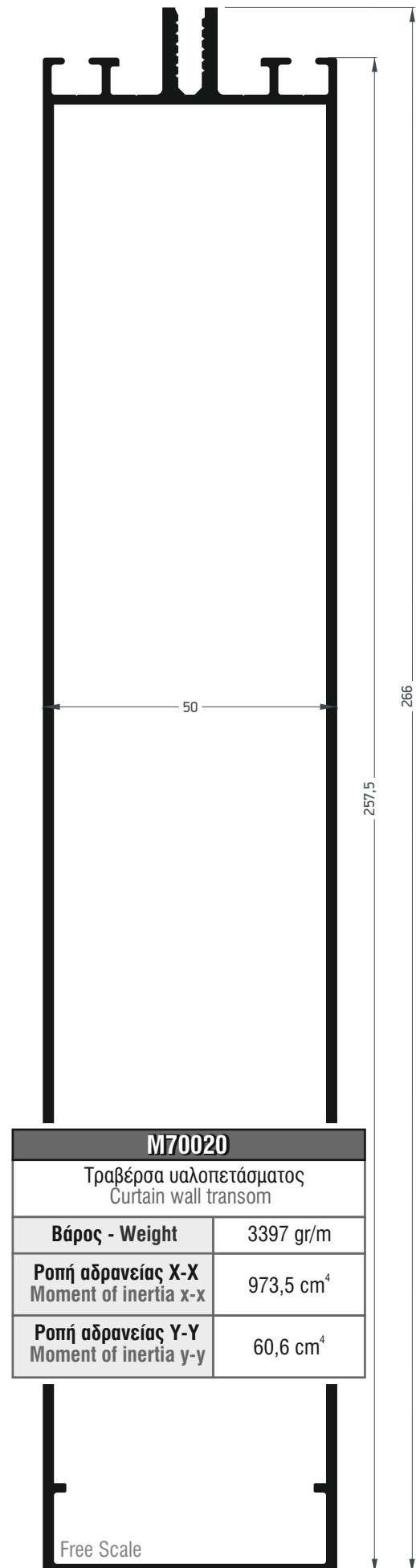
M70018	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	2336 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	271,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	38,4 cm ⁴



M70055	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	2628 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	404,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	44,1 cm ⁴

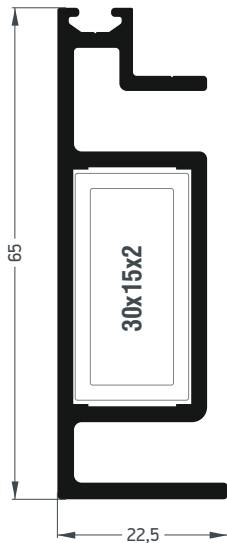


M70019	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	2884 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	559,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	49,6 cm ⁴

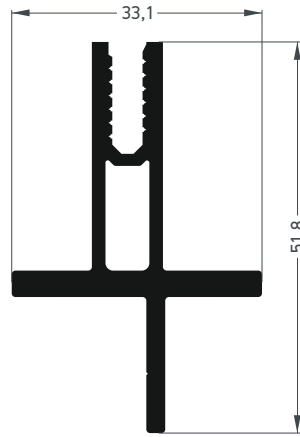


M70020	
Τραβέρσα υαλοπετάσματος Curtain wall transom	
Βάρος - Weight	3397 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	973,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	60,6 cm ⁴

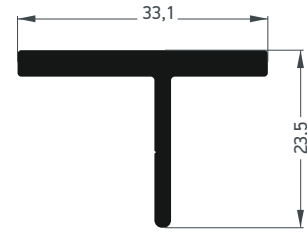
Free Scale



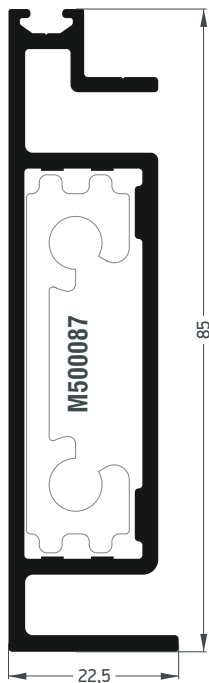
M70037	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	1027 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	15,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,0 cm ⁴



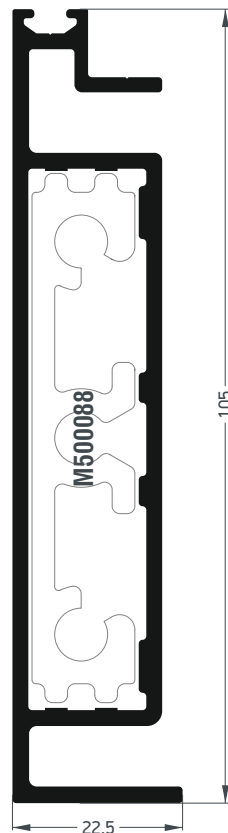
M70036	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	818 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	4,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,3 cm ⁴



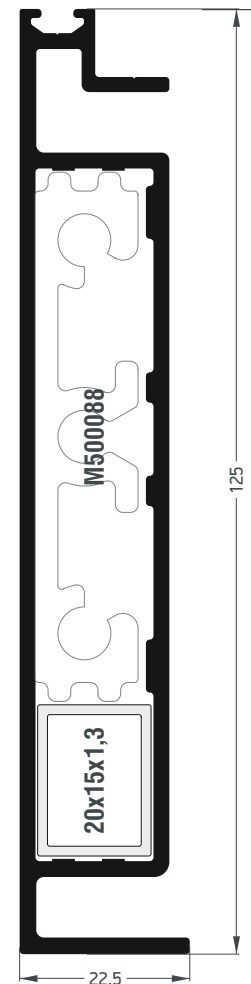
M500055	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	430 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,1 cm ⁴



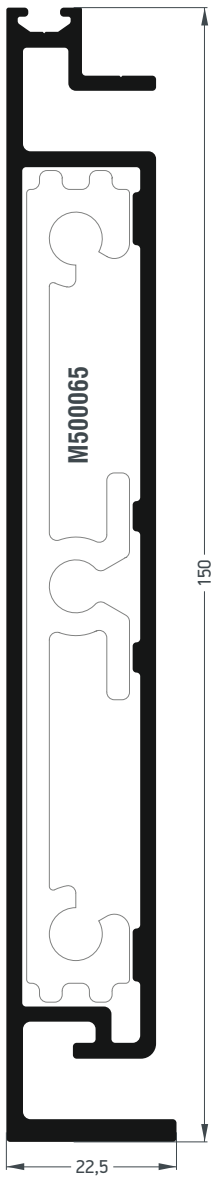
M70038	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	1295 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	34,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,8 cm ⁴



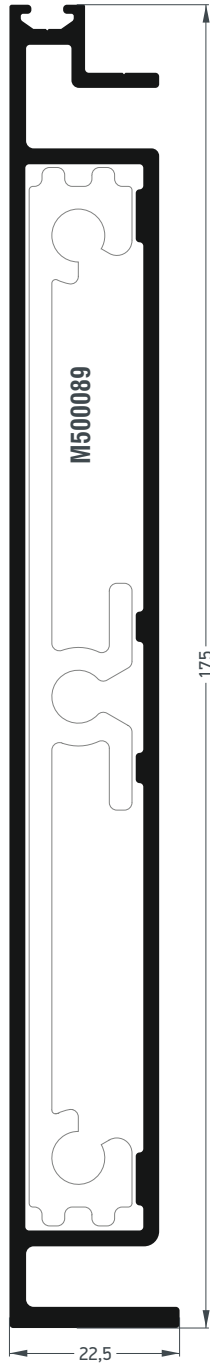
M70039	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	1544 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	62,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,5 cm ⁴



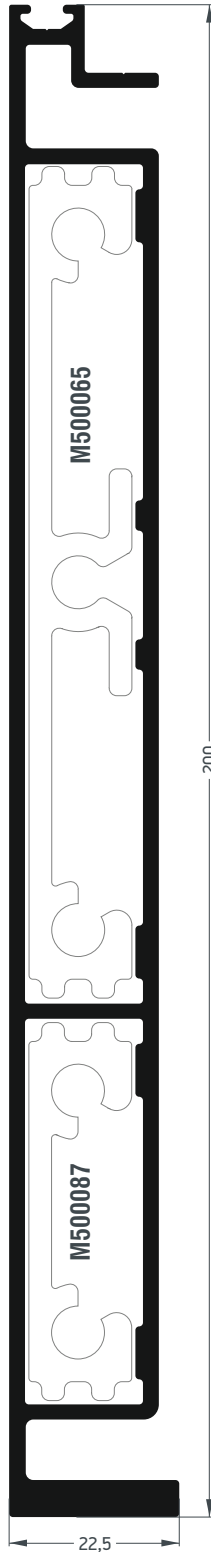
M70040	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	1770 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	100,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	4,2 cm ⁴



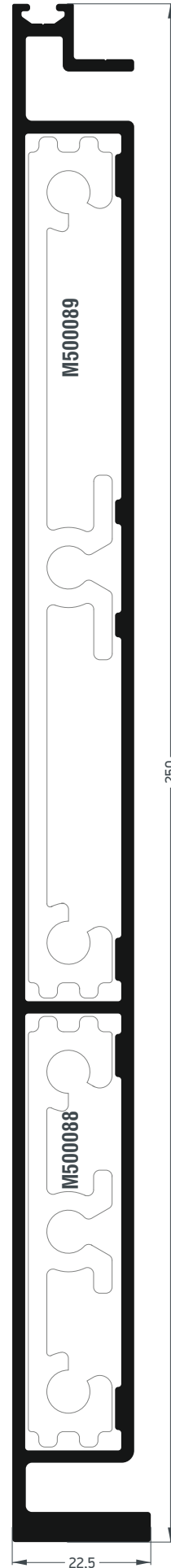
M70041	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	2127 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	178,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	5,1 cm ⁴



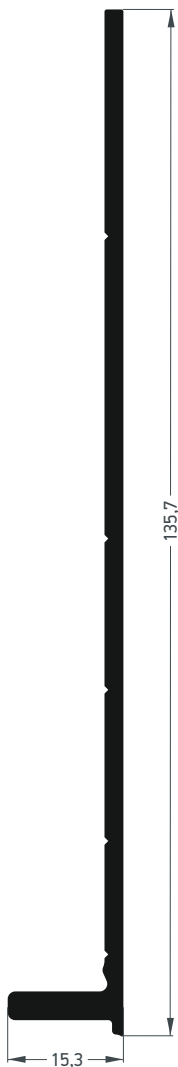
M70042	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	2357 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	265,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	5,9 cm ⁴



M70043	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	2863 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	420,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	7,0 cm ⁴



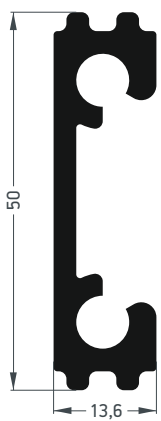
M70044	
Κολώνα διαιρούμενη υαλοπετάσματος Split curtain wall mullion	
Βάρος - Weight	3430 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	774,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	8,6 cm ⁴



M500130	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	1037 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	68,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,3 cm ⁴



M70052	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	1518 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	227,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,3 cm ⁴



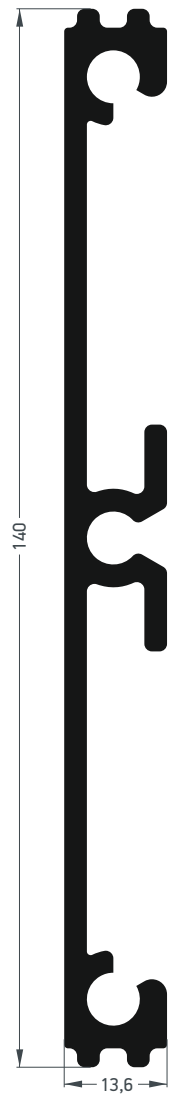
M500087	
Πρόσθετο Additional profile	
Βάρος - Weight	824 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	8,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,6 cm ⁴



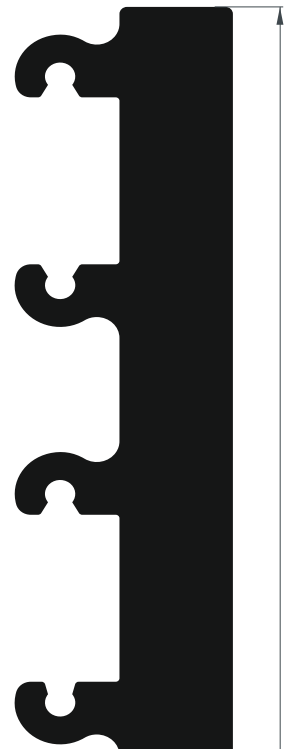
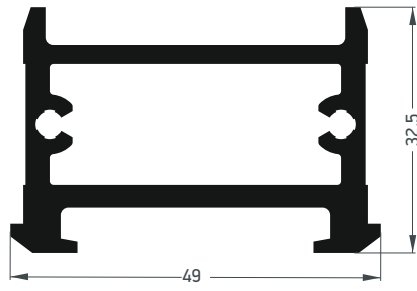
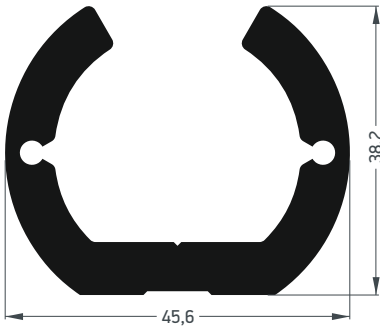
M500088	
Πρόσθετο Additional profile	
Βάρος - Weight	1236 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	21,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,9 cm ⁴



M500065	
Πρόσθετο Additional profile	
Βάρος - Weight	1641 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	70,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,2 cm ⁴

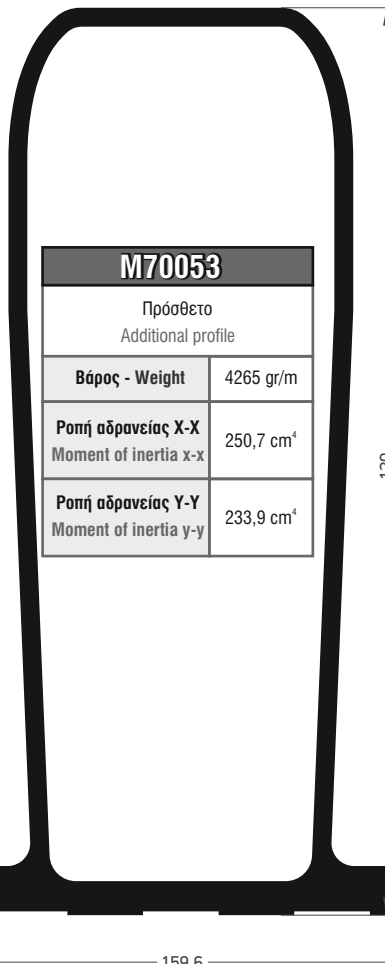
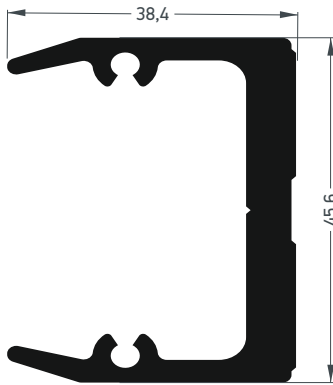


M500089	
Πρόσθετο Additional profile	
Βάρος - Weight	1884 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	132,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,3 cm ⁴



M70028	
Πρόσθετο Additional profile	
Βάρος - Weight	1717 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	134,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	8,5 cm ⁴

M70097	
Πρόσθετο Additional profile	
Βάρος - Weight	1273 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	13,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	24,3 cm ⁴

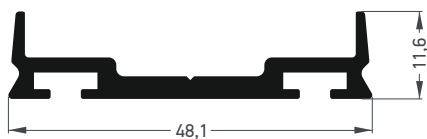


M70027	
Πρόσθετο Additional profile	
Βάρος - Weight	1138 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	11,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,3 cm ⁴

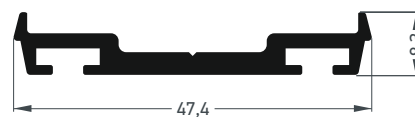
M70053	
Πρόσθετο Additional profile	
Βάρος - Weight	4265 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	250,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	233,9 cm ⁴

M70078	
Πρόσθετο Additional profile	
Βάρος - Weight	12521 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2781,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	43,6 cm ⁴





M70025	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	481 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	4,1 cm ⁴



M510007	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	429 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,1 cm ⁴



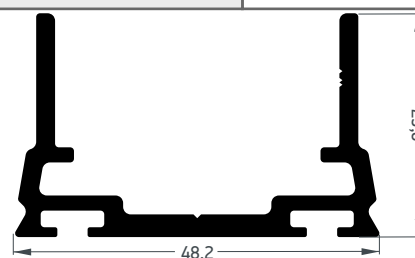
M10940	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	554 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	6,0 cm ⁴



M10841	
Πλάκα πίεσης M10800 Pressure plate profile M10800	
Βάρος - Weight	835 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	34,0 cm ⁴



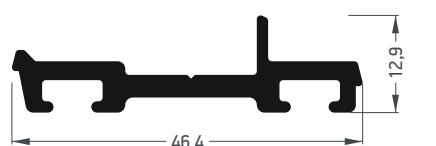
M500113	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	619 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	4,6 cm ⁴



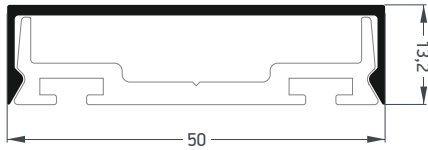
M70222	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	800,5 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,17 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	8,82 cm ⁴



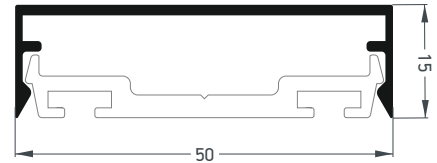
M500018	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	558 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,2 cm ⁴



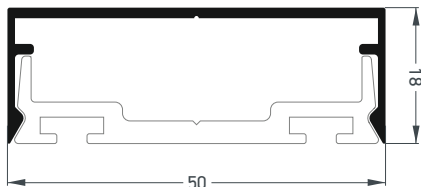
M500081	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	507 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,6 cm ⁴



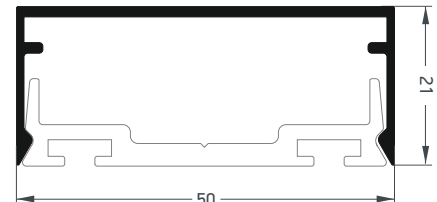
M70031	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	264 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,1 cm ⁴



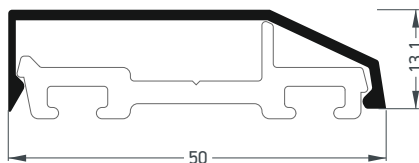
M500053	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	292 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,7 cm ⁴



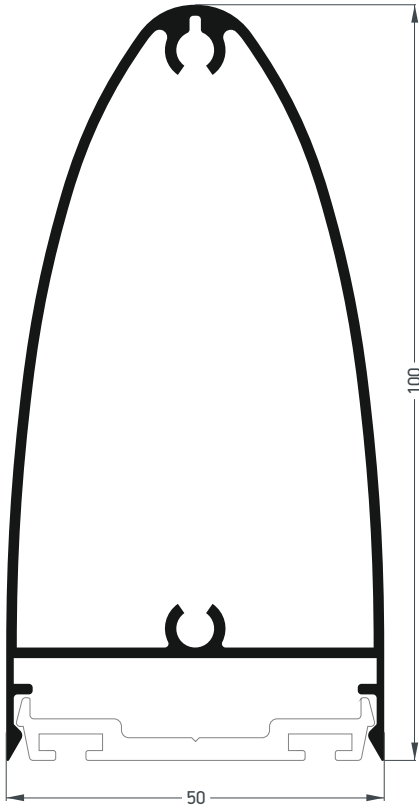
M500063	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	307 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	4,0 cm ⁴



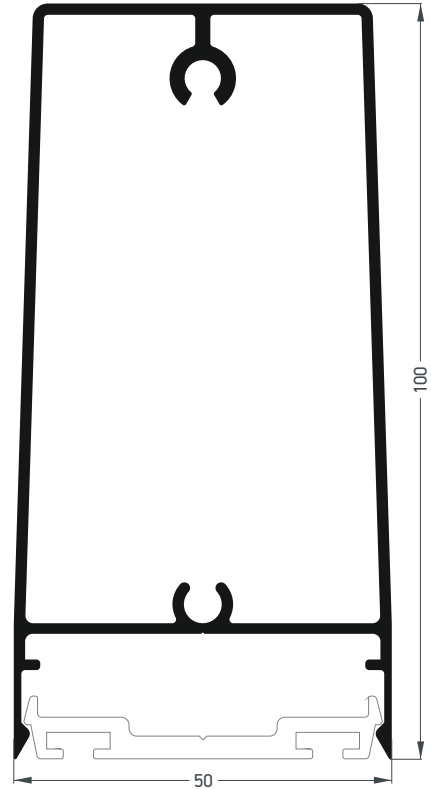
M500080	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	324 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,47 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	4,38 cm ⁴



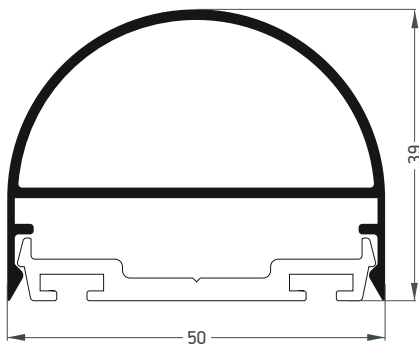
M500082	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	257 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,8 cm ⁴



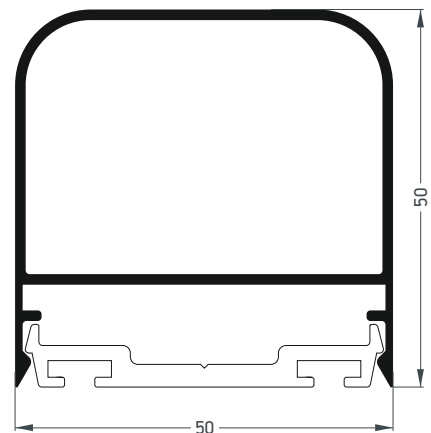
M500079	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	1119 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	43,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	13,2 cm ⁴



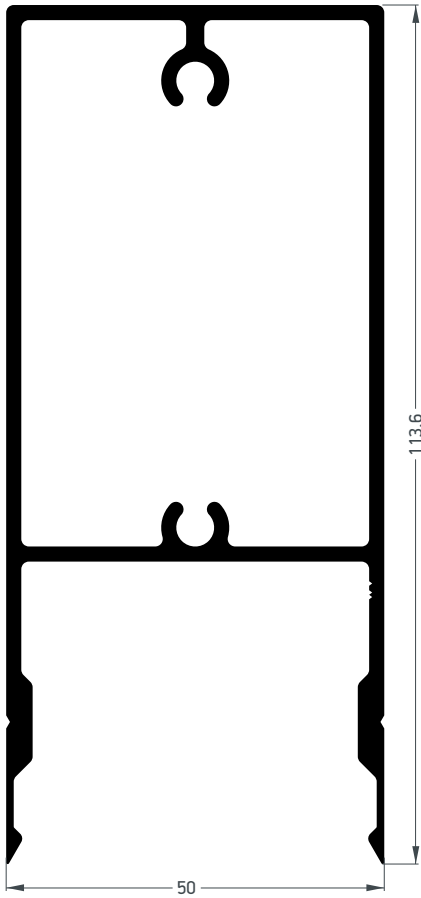
M70054	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	1316 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	54,49 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	18,19 cm ⁴



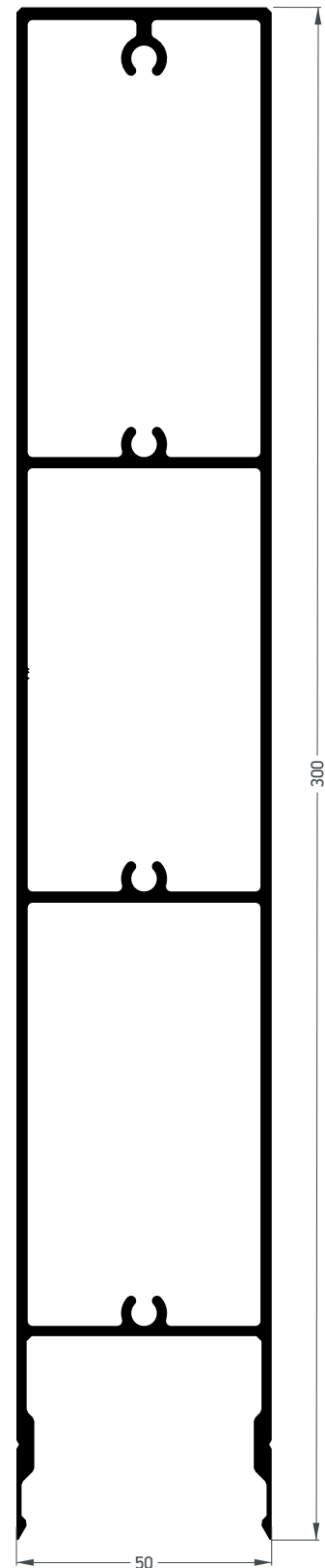
M500077	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	570 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	6,6 cm ⁴



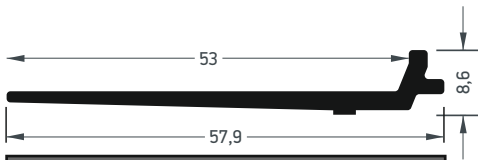
M500078	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	705 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	6,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	10,0 cm ⁴



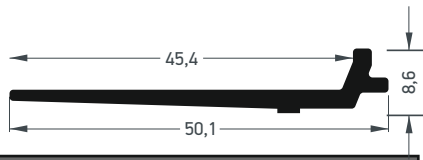
M70220	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	723,9 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	87 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	30,1 cm ⁴



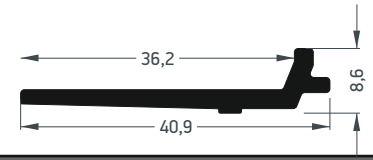
M70223	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	4997,4 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	82,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1504 cm ⁴



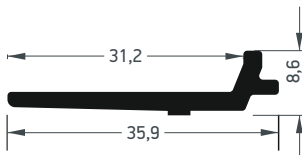
M70049	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	365 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,7 cm ⁴



M70217	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	322,9 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,45 cm ⁴



M70130	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	288,4 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,5 cm ⁴



M70026	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	262 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,0 cm ⁴



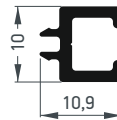
M70079	
Πρόσθετο Additional profile	
Βάρος - Weight	847 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,4 cm ⁴



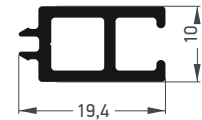
M70080	
Πρόσθετο Additional profile	
Βάρος - Weight	1213,8 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	10,1 cm ⁴



M70085	
Πρόσθετο Additional profile	
Βάρος - Weight	1324 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,66 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	15,2 cm ⁴



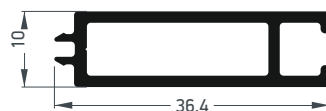
M70022	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	120,5 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴



M70134	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	219,2 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,24 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,10 cm ⁴



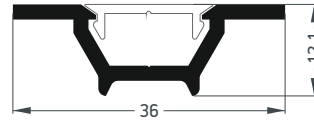
M70135	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	288,1 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,73 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,15 cm ⁴



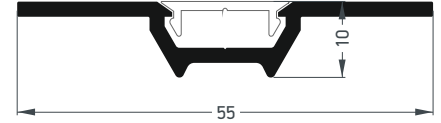
M70136	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	356,9 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,60 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,20 cm ⁴



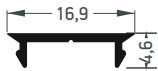
AL500001	
Πρόσθετο Additional profile	
Βάρος - Weight	287 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴



M109421	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	276 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,0 cm ⁴



M500122	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	368 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,9 cm ⁴



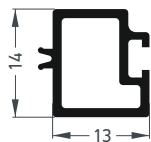
M9351	
Καπάκι Cover cap	
Βάρος - Weight	70 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴



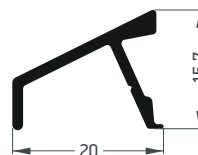
M109422	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	263 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,3 cm ⁴



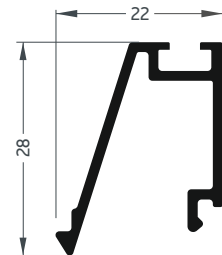
M9010	
Πρόσθετο Additional profile	
Βάρος - Weight	132 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,3 cm ⁴



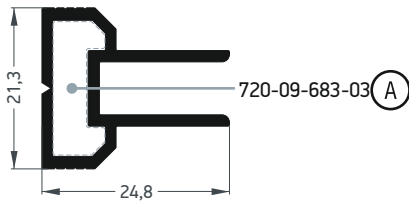
M71215	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	181 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,16 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,14 cm ⁴



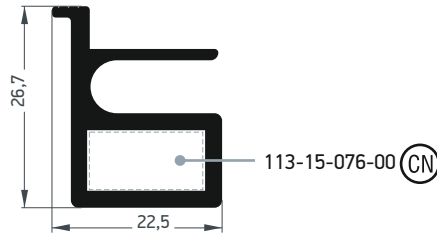
M9317	
Νεροσταλάκτης Waterproofing profile	
Βάρος - Weight	180 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,3 cm ⁴



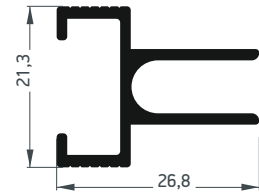
M10930	
Πρόσθετο προφίλ Additional profile	
Βάρος - Weight	152,7 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,53 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,74 cm ⁴



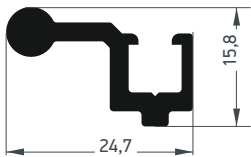
M109683	
Αποστάτης υάλωσης υαλοπινάκα/Structural Glazing spacer/Structural	
Βάρος - Weight	348 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,49 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,64 cm ⁴
Γωνία επιπεδότητας Alignment corner	720-09-683-03



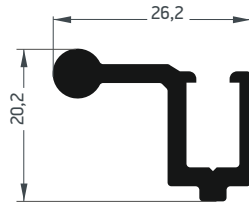
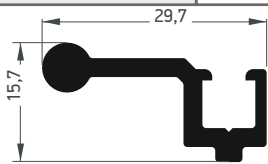
M109685	
Αποστάτης υάλωσης υαλοπινάκα/Structural Glazing spacer/Structural	
Βάρος - Weight	526 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,9 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-15-076-00



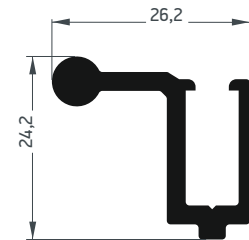
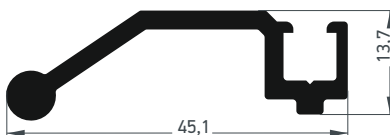
M109690	
Αποστάτης υάλωσης υαλοπινάκα/Structural Glazing spacer/Structural	
Βάρος - Weight	327 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,6 cm ⁴



4000004	
Κλείδωμα για Structural Structural locker	
Βάρος - Weight	332 gr/m



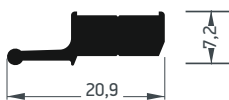
4000022	
Κλείδωμα για Structural Structural locker	
Βάρος - Weight	394 gr/m



4000023	
Κλείδωμα για Structural Structural locker	
Βάρος - Weight	437 gr/m



M10968	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	366 gr/m



M109680	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	491 gr/m



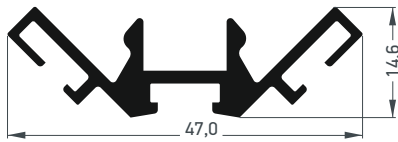
M10969	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	174 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,2 cm ⁴



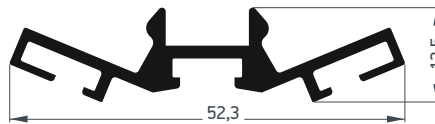
M500135	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	218 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,2 cm ⁴

M500097	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	128 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,2 cm ⁴

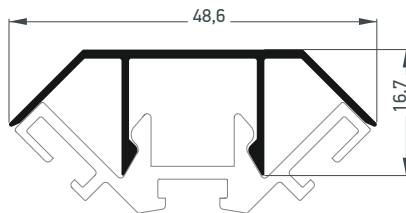
M500098	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	45 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,0 cm ⁴



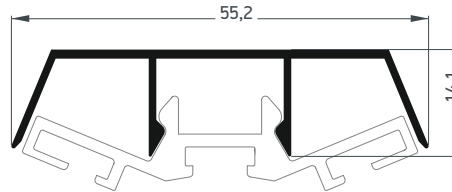
M9931	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	484 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,6 cm ⁴



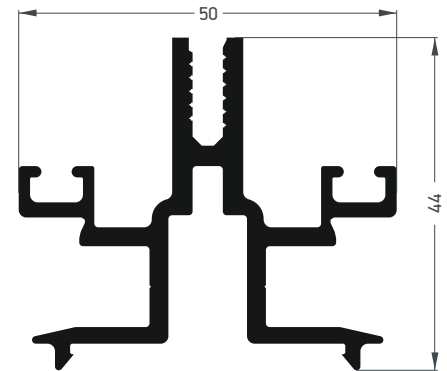
M9934	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	457 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,2 cm ⁴



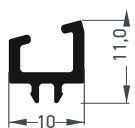
M9932	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	260 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,5 cm ⁴



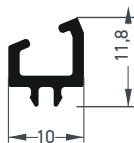
M9935	
Καπάκι υαλοπετάσματος Curtain wall cover cap	
Βάρος - Weight	295 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,7 cm ⁴



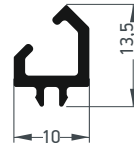
M70021	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	1160 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	5,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	6,4 cm ⁴



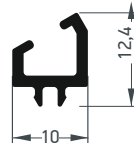
M70048	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	109 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴



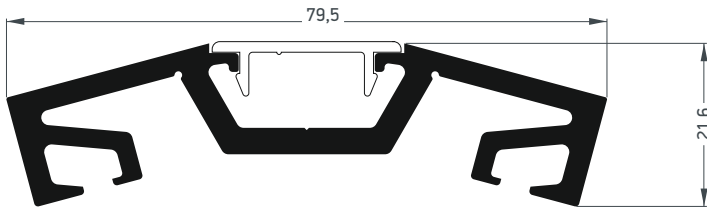
M70047	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	111 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴



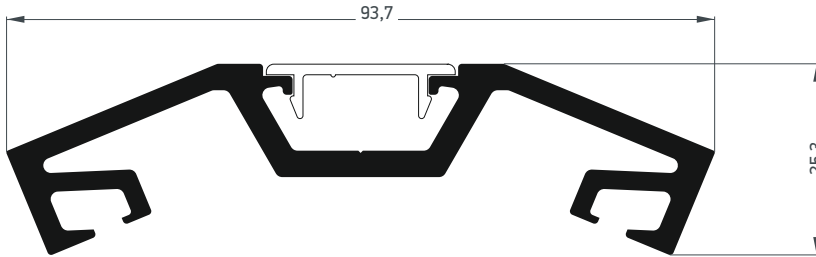
M70045	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	116 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴



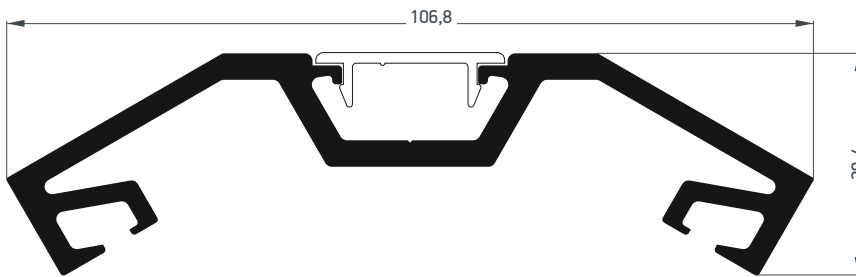
M70046	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	113 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴



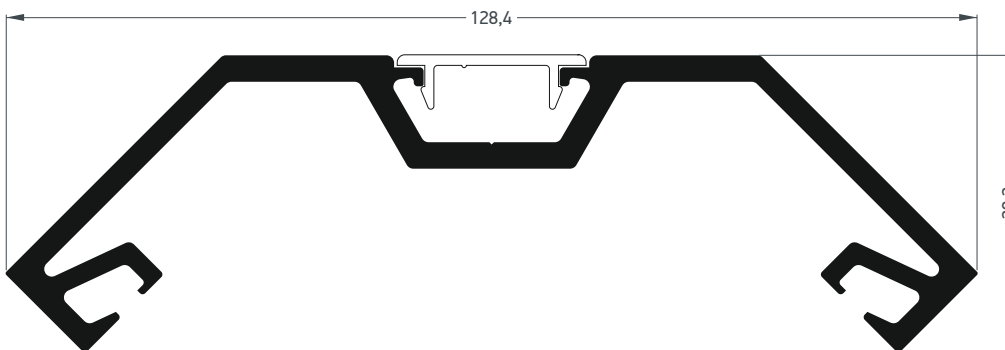
M109401	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	1342 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	31,7 cm ⁴



M109402	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	1508 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	48,4 cm ⁴



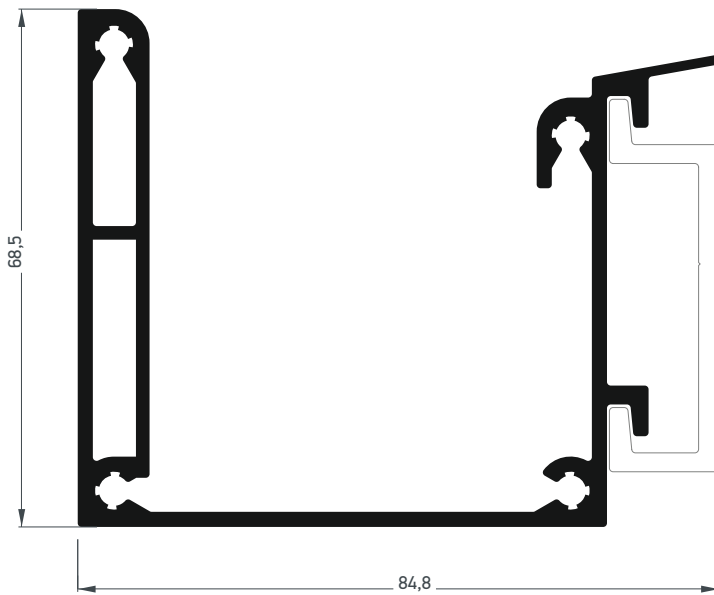
M109403	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	1660 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	3,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	68,8 cm ⁴



M109404	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	1978 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	9,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	121,4 cm ⁴

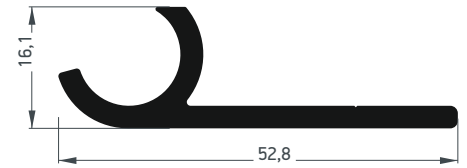
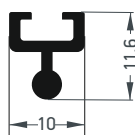


M70140	
Πλάκα πίεσης υαλοπετάσματος Curtain wall pressure plate profile	
Βάρος - Weight	2641 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	17,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	280,6 cm ⁴



M10963	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	1871 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	36,2 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	63,7 cm ⁴

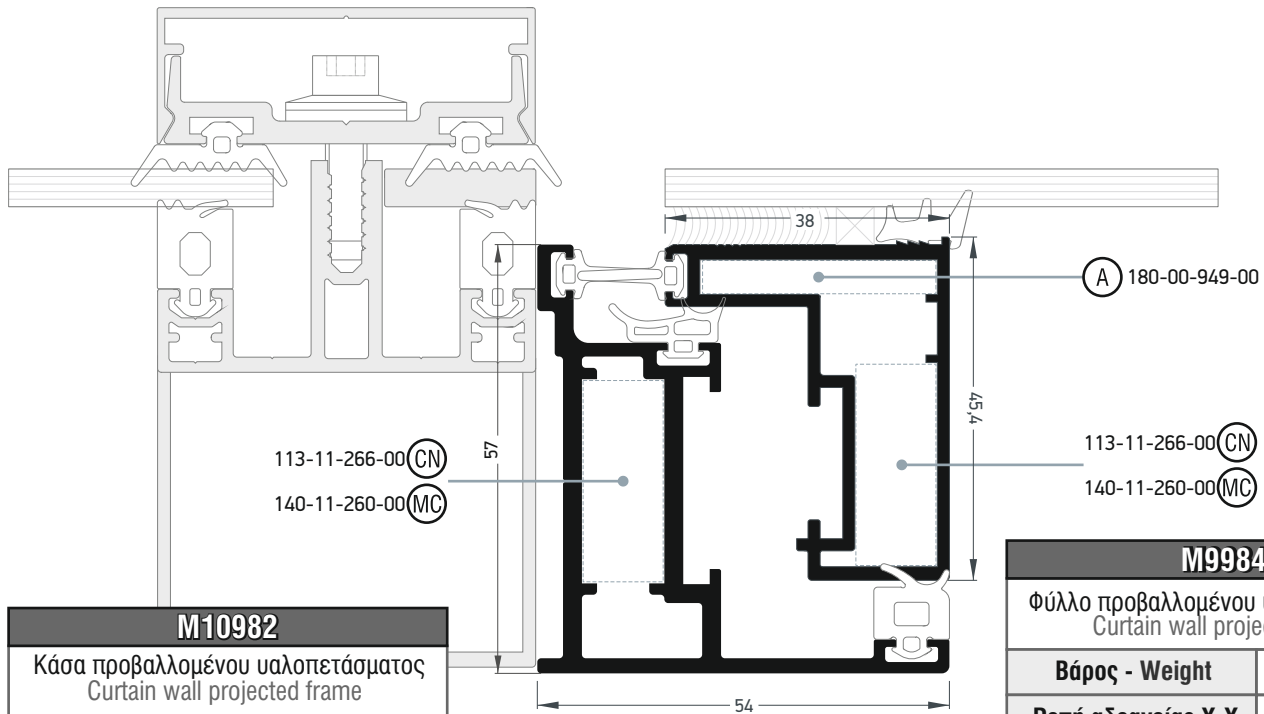
M10964	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	539 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	5,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,5 cm ⁴



M10960	
Πρόσθετο Additional profile	
Βάρος - Weight	122 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,1 cm ⁴

M10957	
Πρόσθετο Additional profile	
Βάρος - Weight	562 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	4,4 cm ⁴

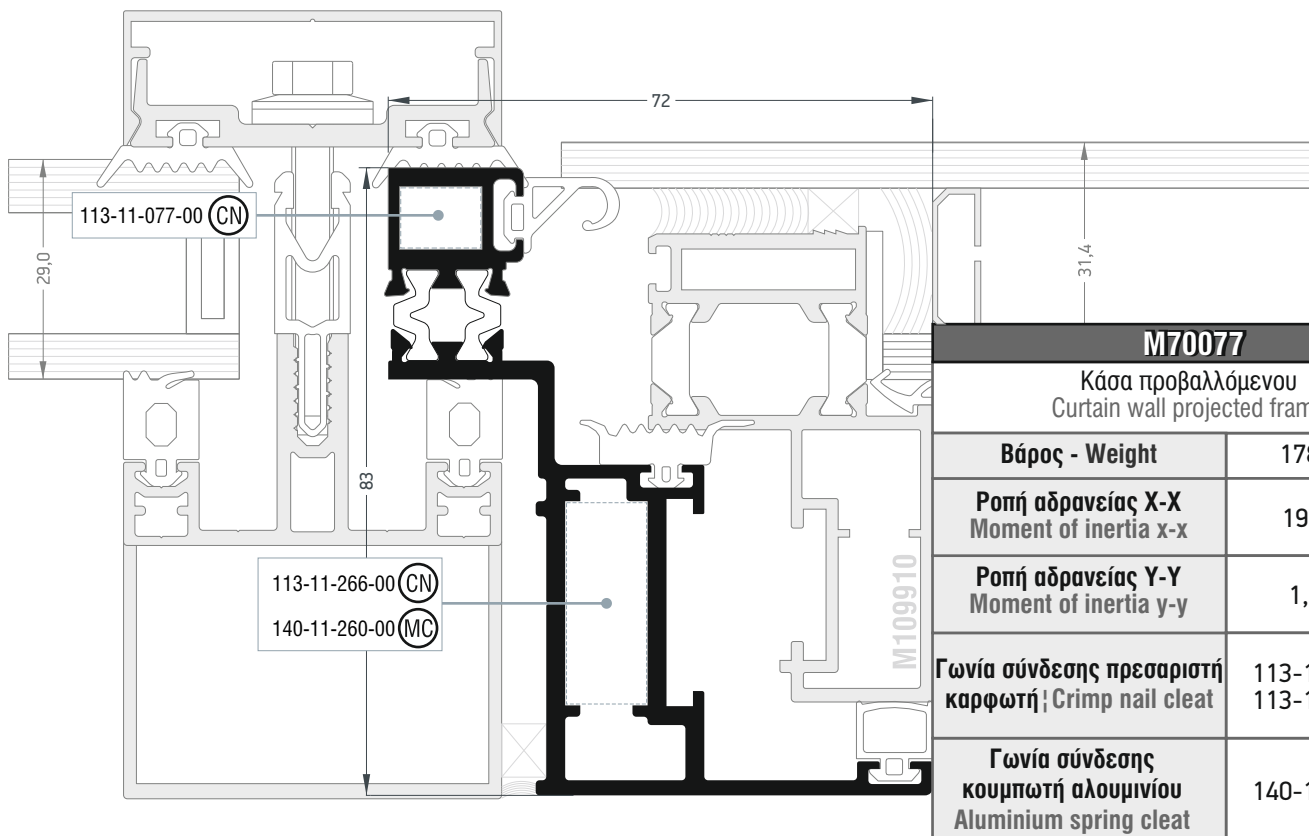
M10958	
Πρόσθετο Additional profile	
Βάρος - Weight	563 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	4,2 cm ⁴



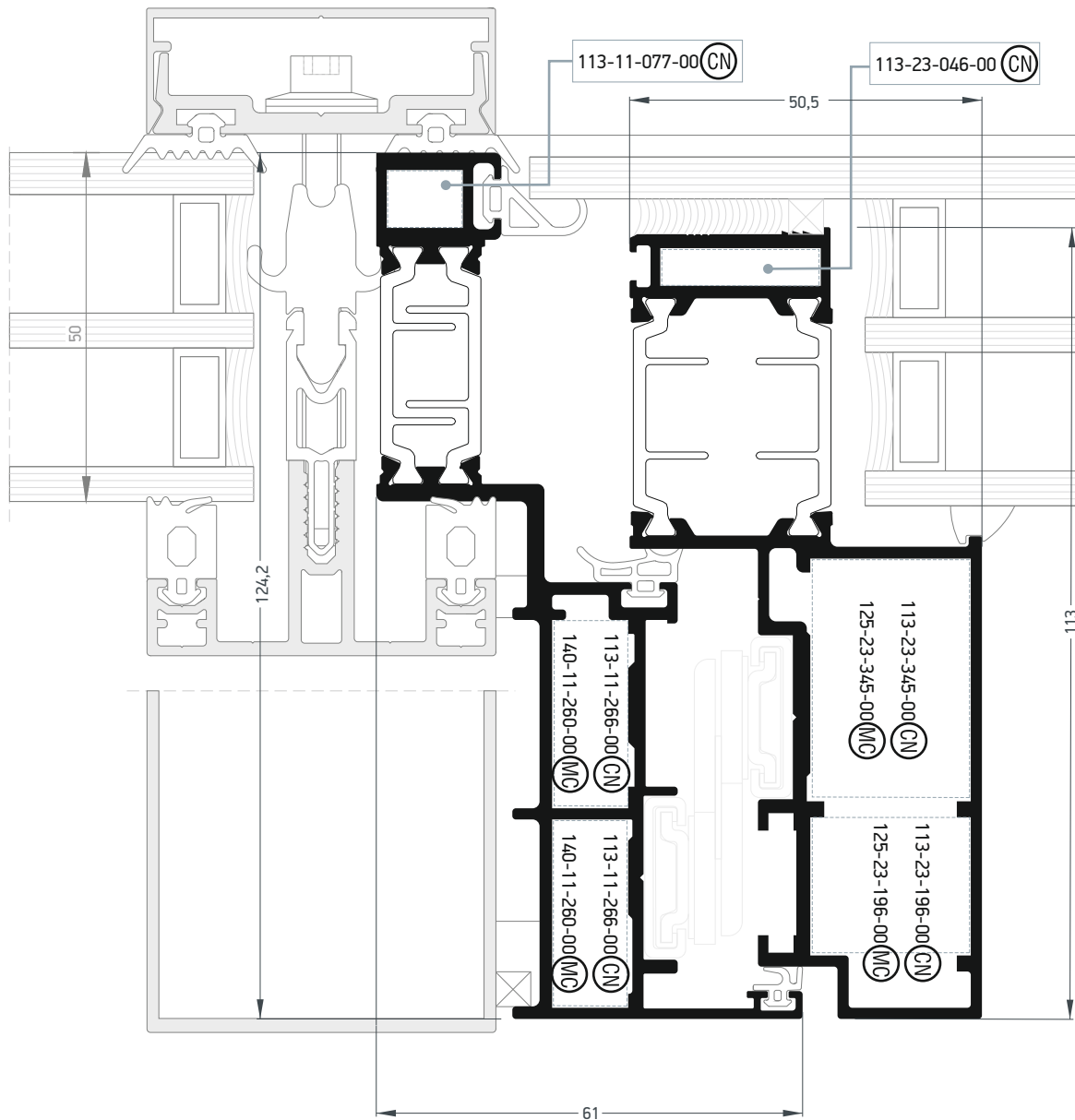
M10982	
Κάσα προβαλλομένου υαλοπετάσματος Curtain wall projected frame	
Βάρος - Weight	1145 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	7,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	12,8 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-11-266-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00

M9984	
Φύλλο προβαλλομένου υαλοπετάσματος Curtain wall projected sash	
Βάρος - Weight	1702 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	19,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	47,0 cm ⁴

Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-11-266-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00
Γωνία επιπεδότηας Alignment corner	180-00-949-00

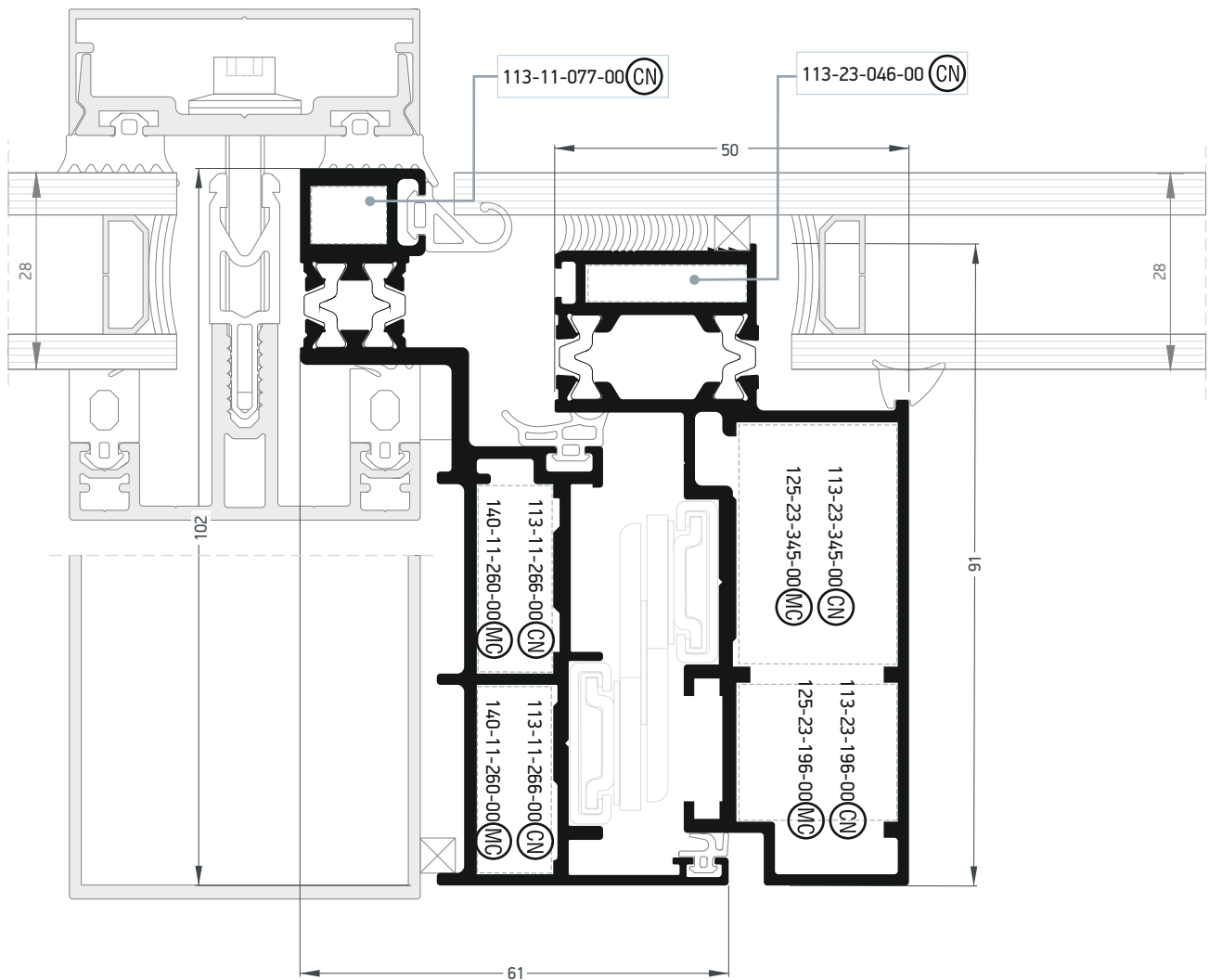


M70077	
Κάσα προβαλλομένου Curtain wall projected frame	
Βάρος - Weight	1782 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	19,48 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,65 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-11-077-00 113-11-266-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00



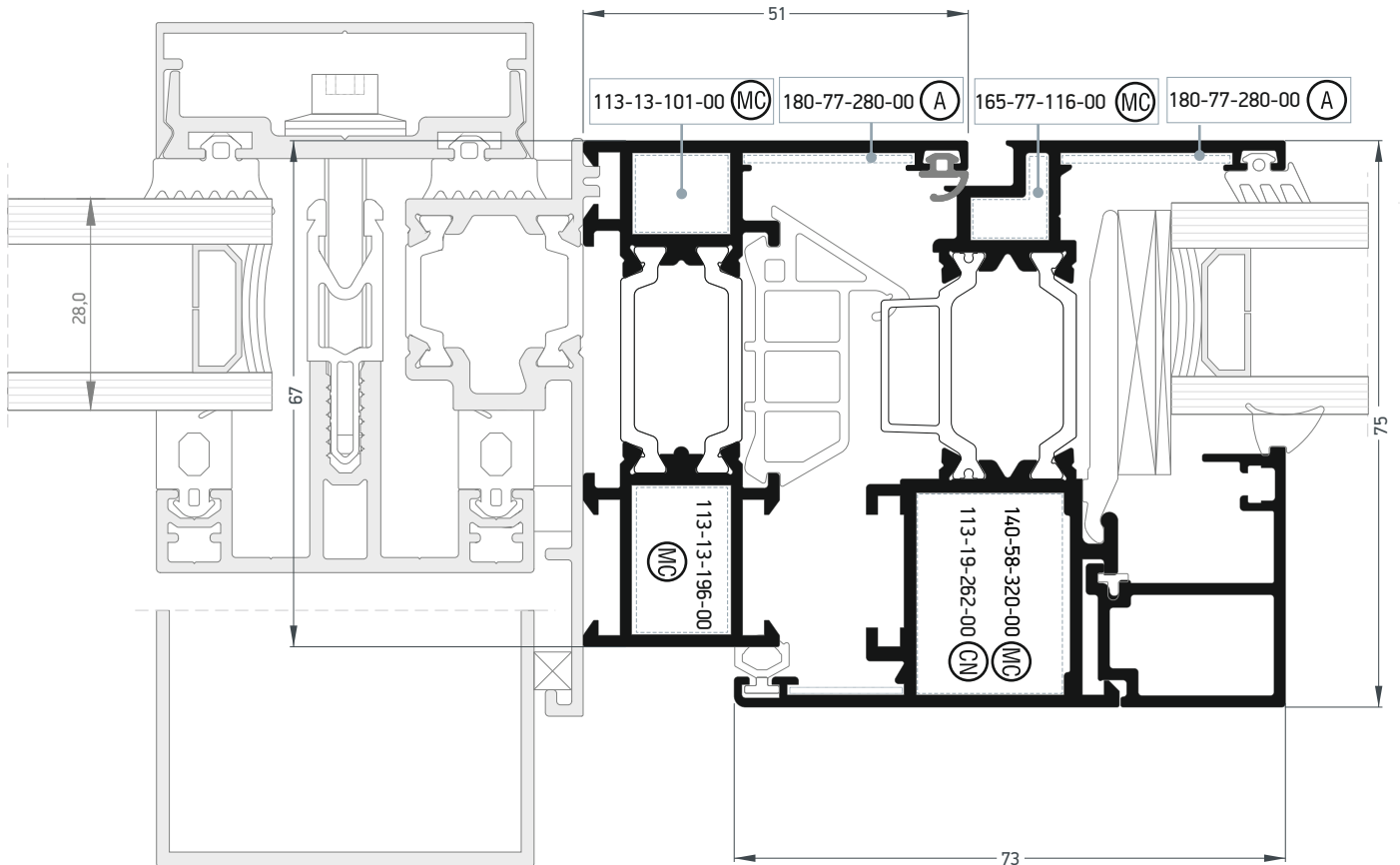
M70050	
Κάσα παράλληλης προβολής Parallel projected frame	
Βάρος - Weight	1995 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	16,97 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	123,75 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-11-077-00 113-11-266-00 113-11-266-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00 140-11-260-00

M70051	
Φύλλο παράλληλης προβολής Parallel projected sash	
Βάρος - Weight	11906,5 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	18,27 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	95 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-23-046-00 113-23-196-00 113-23-345-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-23-196-00 125-23-345-00



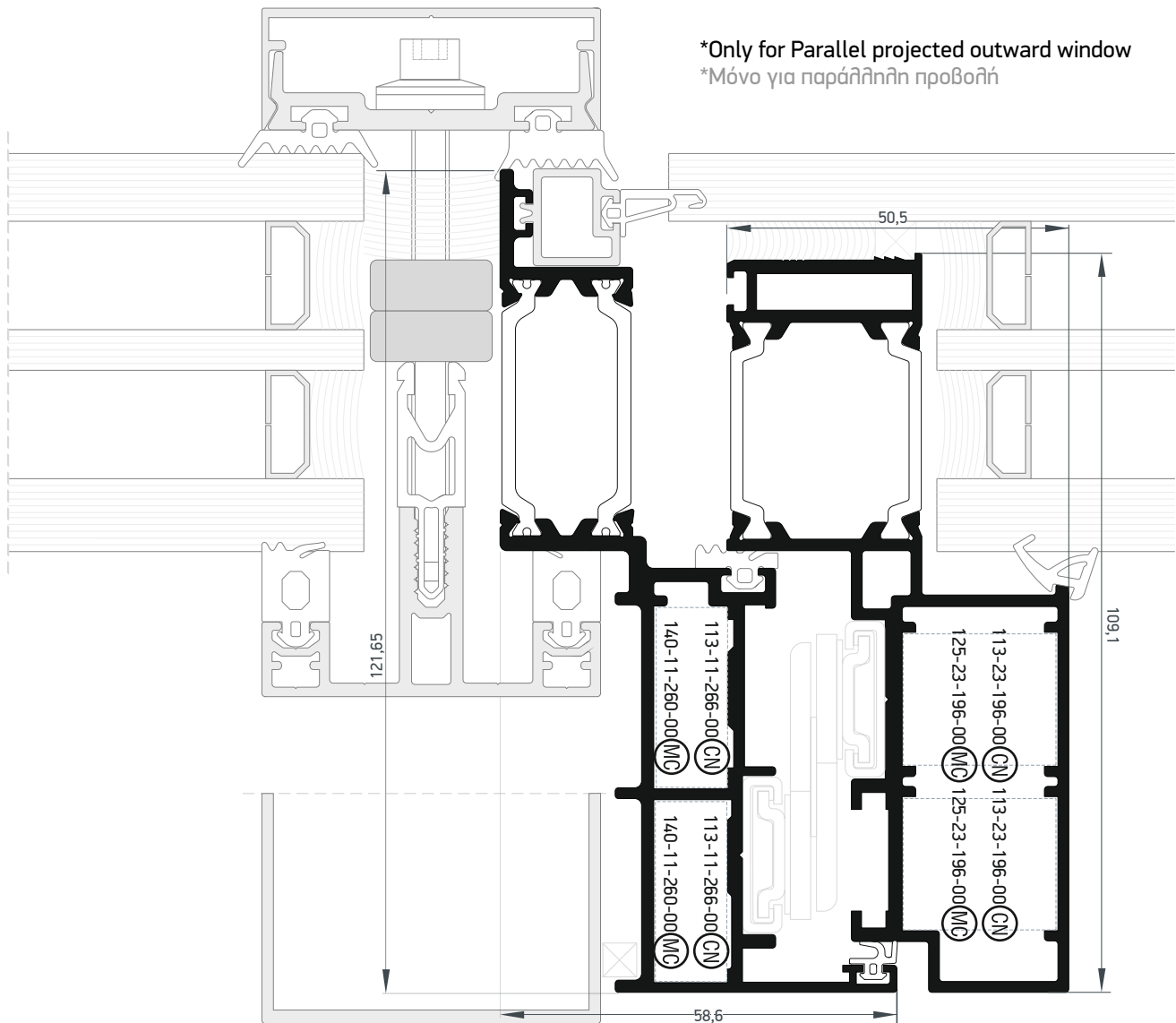
M70023	
Κάσα παράλληλης προβολής Parallel projected frame	
Βάρος - Weight	1846 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	14,3 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	75,5 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-11-077-00 113-11-266-00 113-11-266-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00 140-11-260-00

M70024	
Φύλλο παράλληλης προβολής Parallel projected sash	
Βάρος - Weight	1767 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	15,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	55,4 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-23-046-00 113-23-196-00 113-23-345-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-23-196-00 125-23-345-00



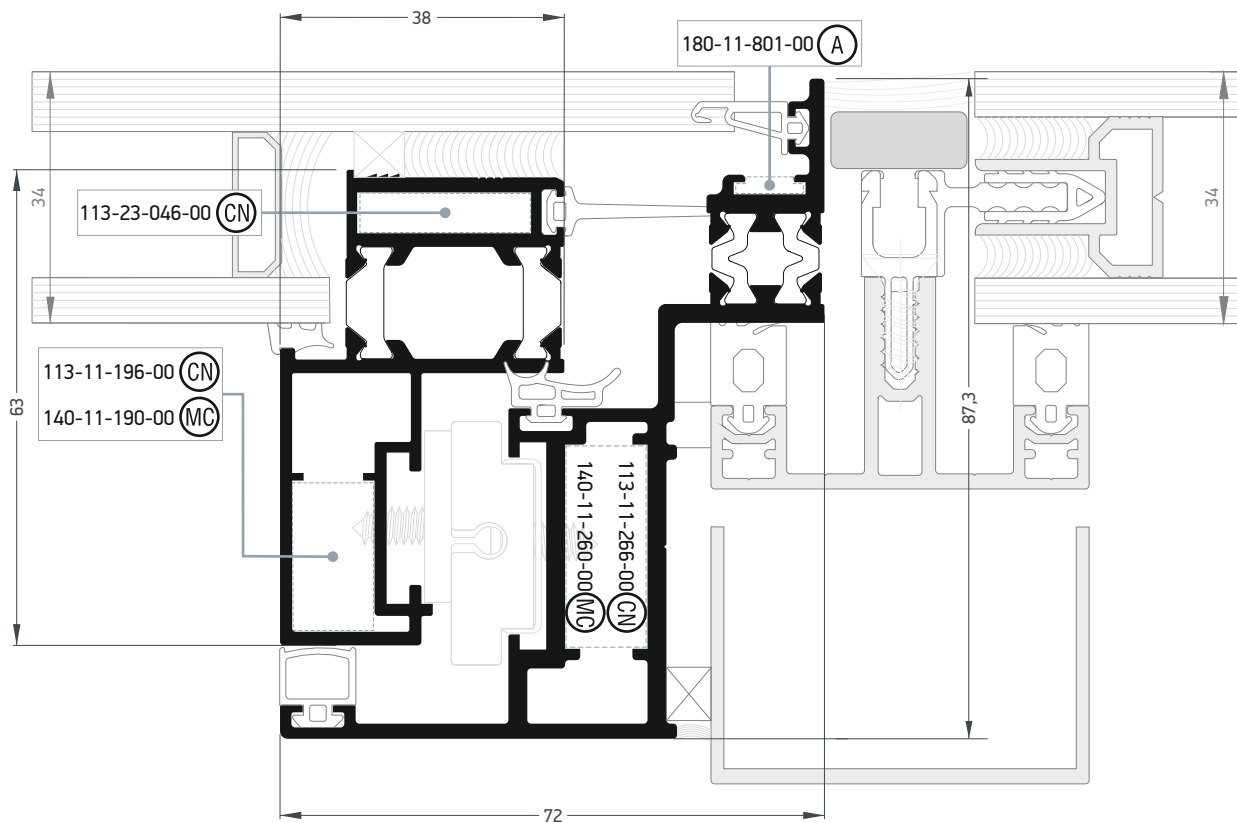
S67508	
Κάσα Frame	
Βάρος - Weight	1223,6 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	24,68 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	5,8 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-13-101-00 113-13-196-00
Γωνία επιπεδότητος Alignment corner	180-77-280-00

S67936	
Φύλλο Sash	
Βάρος - Weight	1492,7 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	38,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	10,9 cm ⁴
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-58-320-00
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-19-262-00
Γωνία επιπεδότητος Alignment corner	180-77-280-00



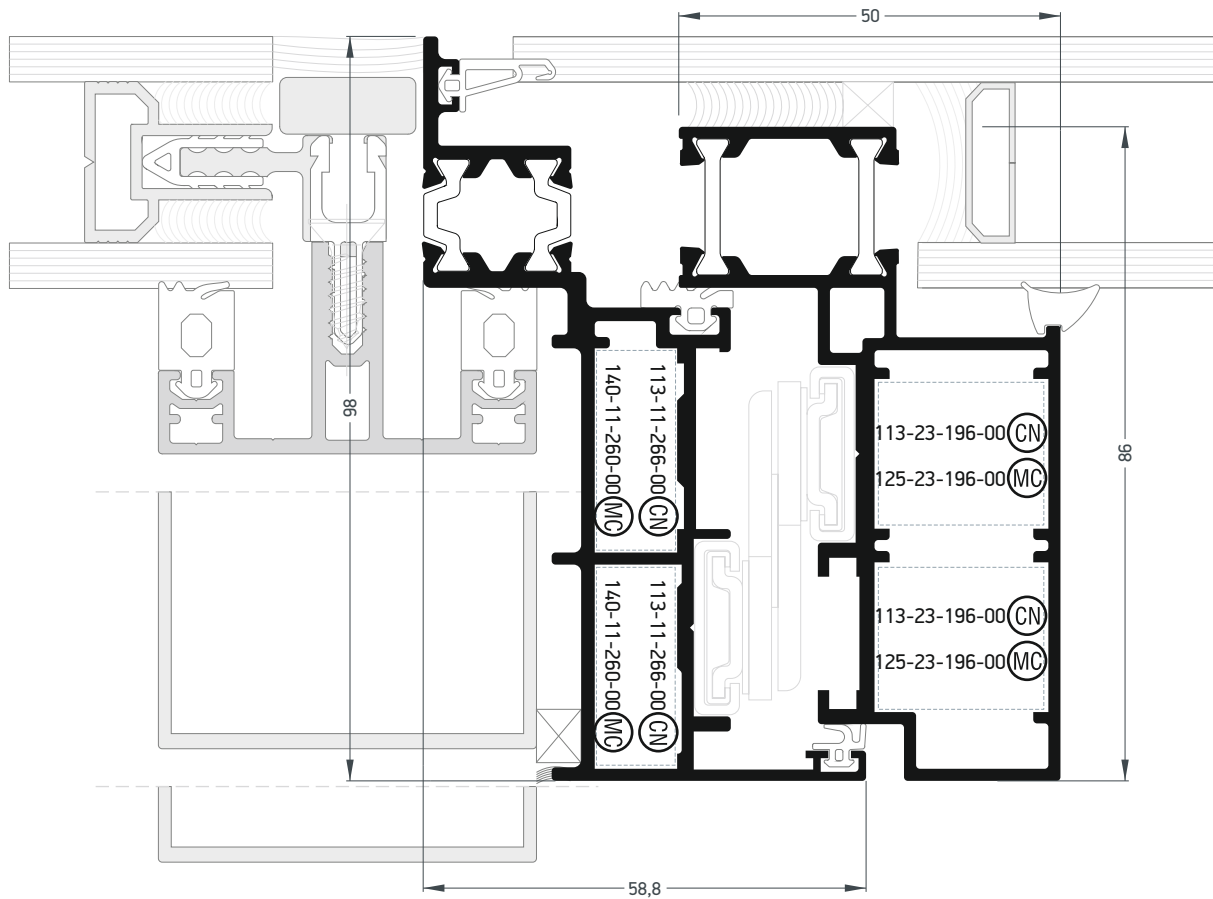
M70123	
Κάσα παράλληλης προβολής Parallel projected frame	
Βάρος - Weight	1785,5gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	94,44 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	13,97 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-19-262-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00 140-11-260-00

M70122	
Φύλλο παράλληλης προβολής Parallel projected sash	
Βάρος - Weight	1844,5 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	82,98 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	16,49 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-13-101-00 113-13-196-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-23-196-00



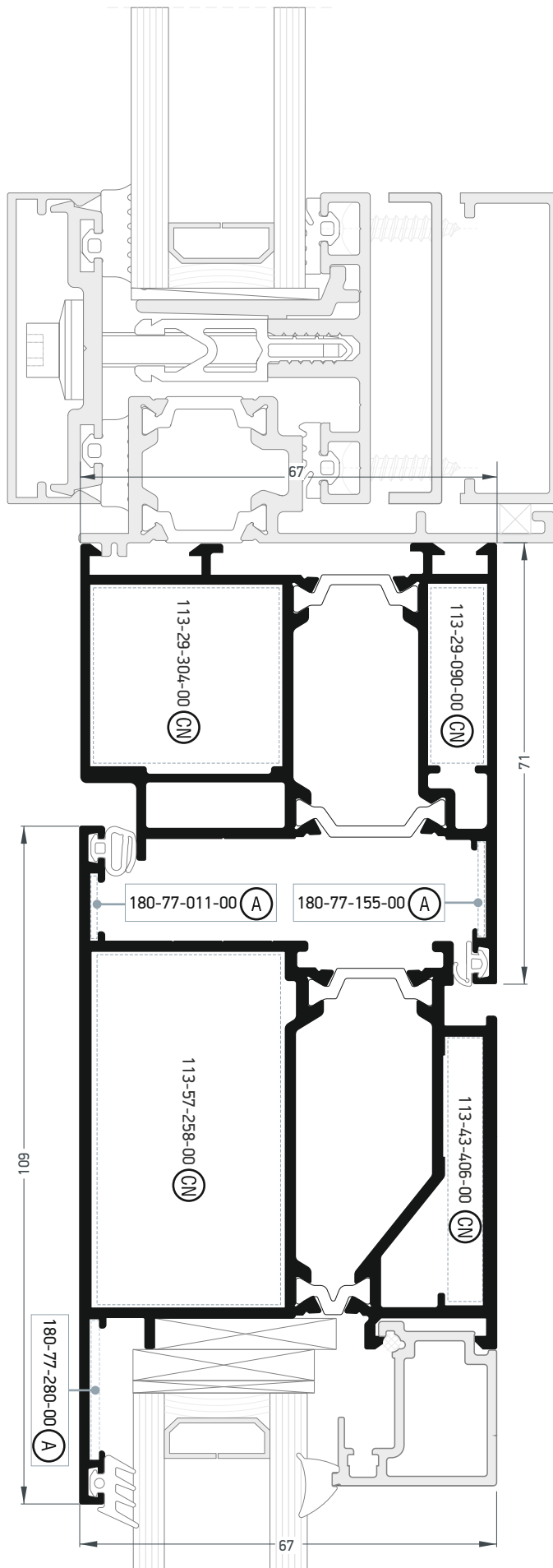
M109910	
Φύλλο προβαλλομένου υαλοπετάσματος Curtain wall projected sash profile	
Βάρος - Weight	1229 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	17,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	6,1 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-23-046-00 113-11-196-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-190-00

M109426	
Κάσα προβαλλομένου υαλοπετάσματος Curtain wall projected frame profile	
Βάρος - Weight	1702 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	19,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	47,0 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-11-266-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00
Γωνία επιπεδότητας Alignment corner	180-11-801-00



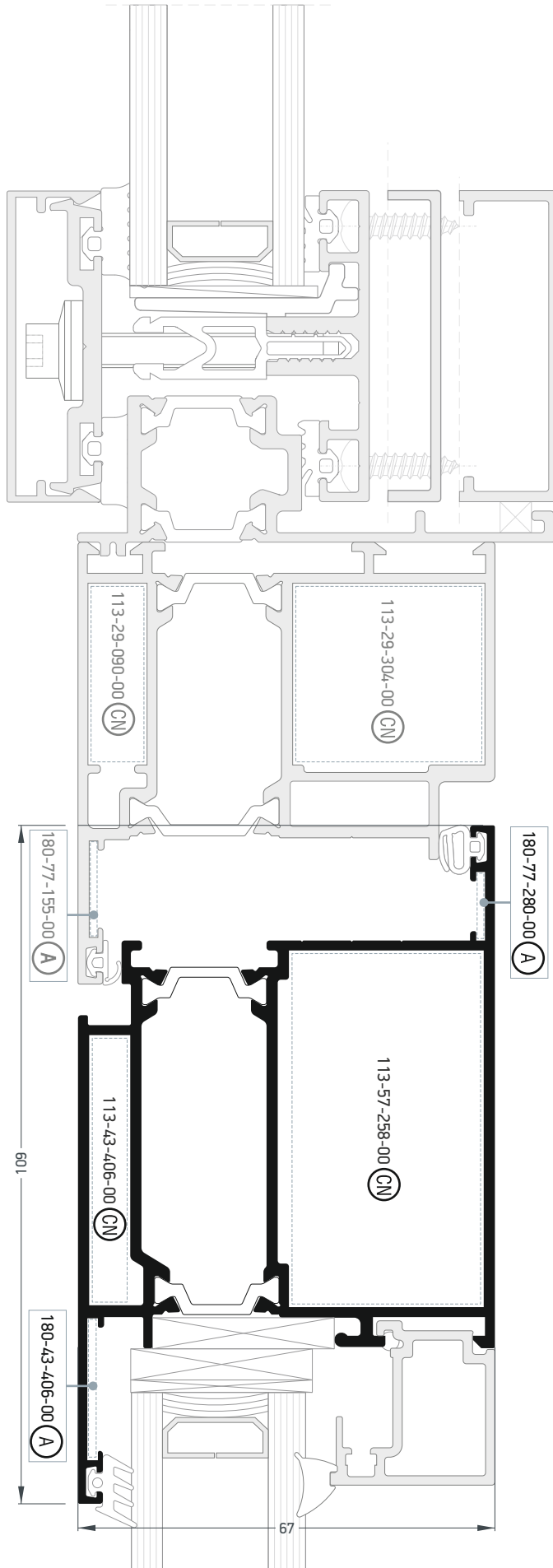
M70032	
Κάσα παράλληλης προβολής Parallel projected frame	
Βάρος - Weight	1665 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	12,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	55,4 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-11-266-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-260-00

M70033	
Φύλλο παράλληλης προβολής Parallel projected frame	
Βάρος - Weight	1544 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	12,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	44,7 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-23-196-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-23-196-00

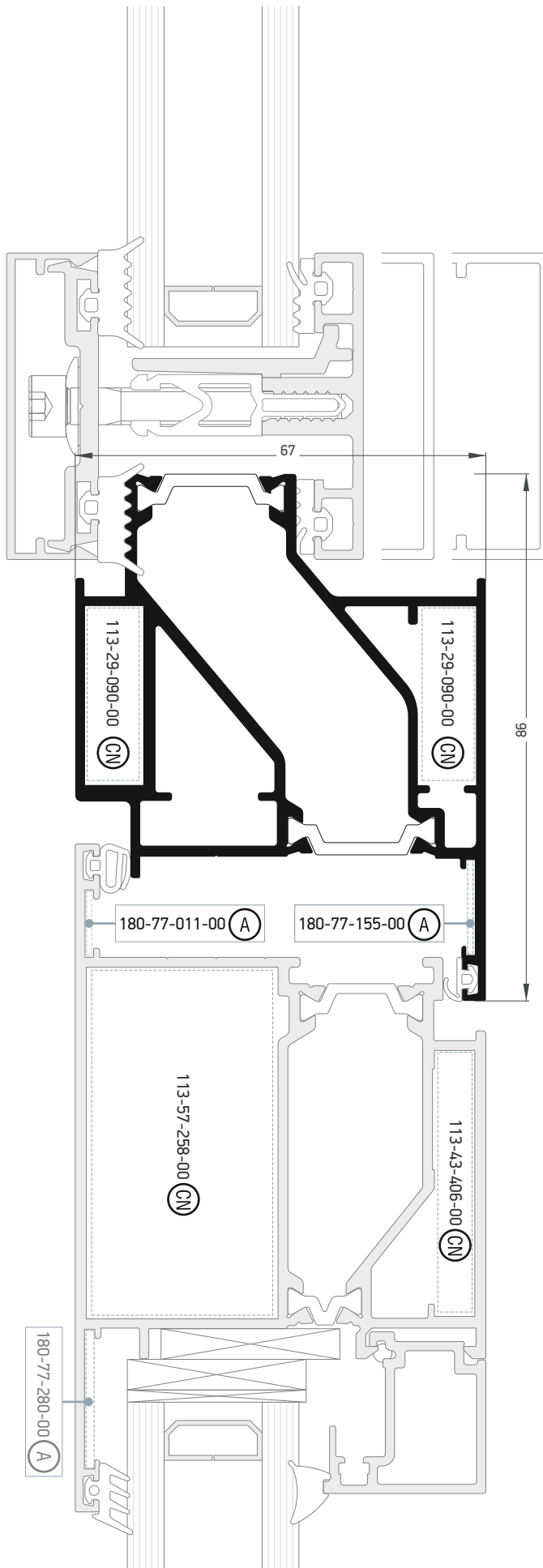


S67586	
Κάσα κύριας εισόδου Hinged frame for entrance door	
Βάρος - Weight	1796 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	34,66 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	24,32 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-29-090-00 113-29-304-00
Γωνία επιπεδότητας Alignment corner	180-77-155-00

S67584	
Φύλλο κύριας εισόδου ανοιγόμενης έξω Hinged sash for entrance door outwards	
Βάρος - Weight	2094,4gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	46,1cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	53,81cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-43-406-00 113-57-258-00
Γωνία επιπεδότητας Alignment corner	180-77-011-00 180-77-280-00

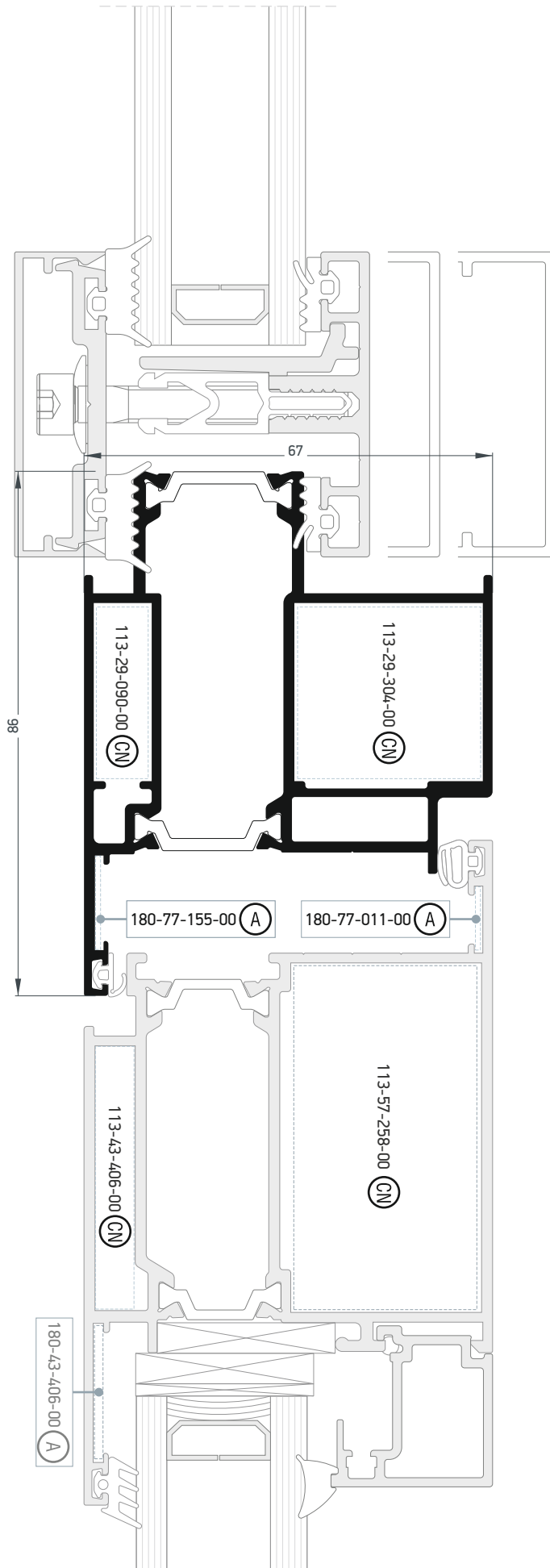


S67582	
Φύλλο κύριας εισόδου ανοιγόμενης μέσα Hinged sash for entrance door inwards	
Βάρος - Weight	2131gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	46,5cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	55 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-43-406-00 113-57-258-00
Γωνία επιπεδότητος Alignment corner	180-43-406-00 180-77-280-00



S67336	
Κάσα κύριας εισόδου Hinged frame for entrance door	
Βάρος - Weight	2099 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	30 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	38.8 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-29-090-00
Γωνία επιπεδότητας Alignment corner	180-77-155-00

S67584	
Φύλλο κύριας εισόδου ανοιγόμενης έξω Hinged sash for entrance door outwards	



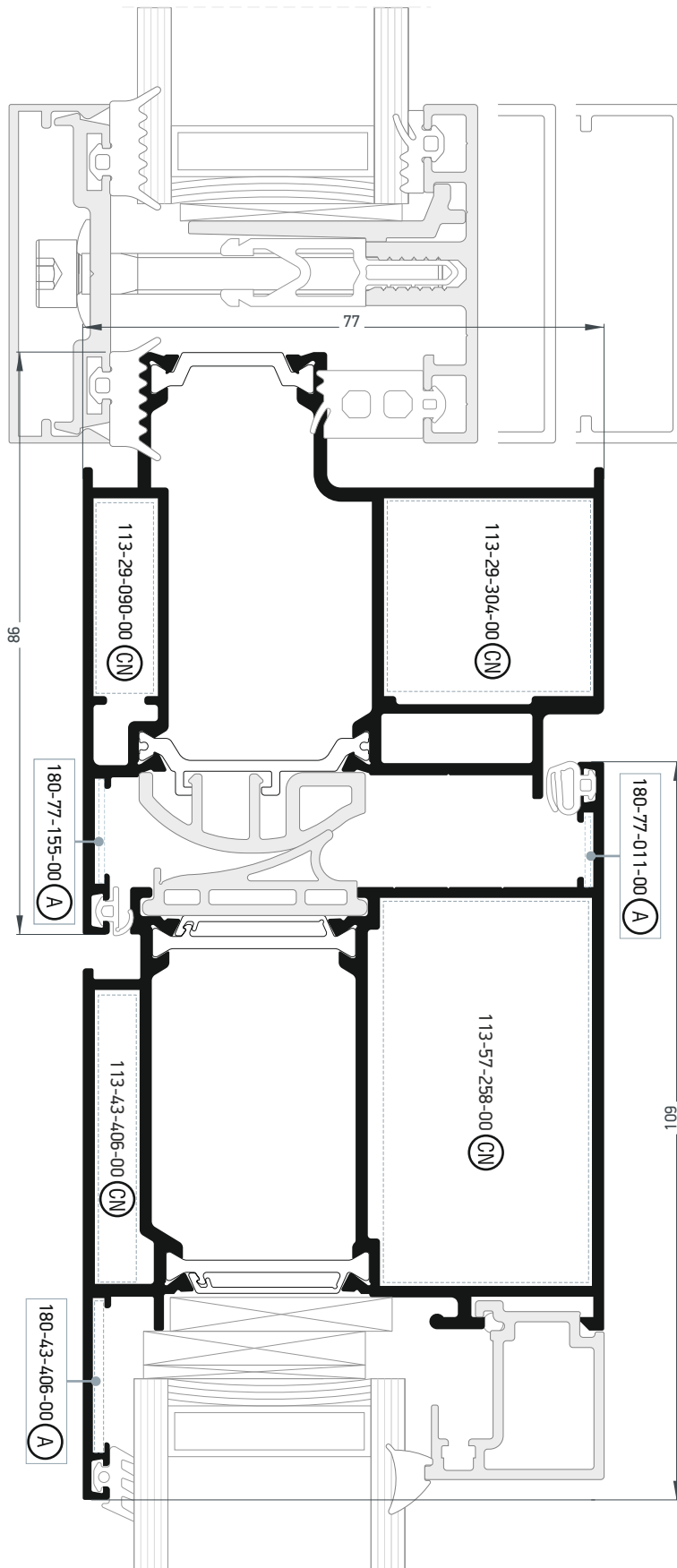
S67334

Κάσα κύριας εισόδου
Hinged frame for entrance door

Βάρος - Weight	1940,2 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	26,24 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	40 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-29-090-00 113-29-304-00
Γωνία επιπεδότητας Alignment corner	180-77-155-00

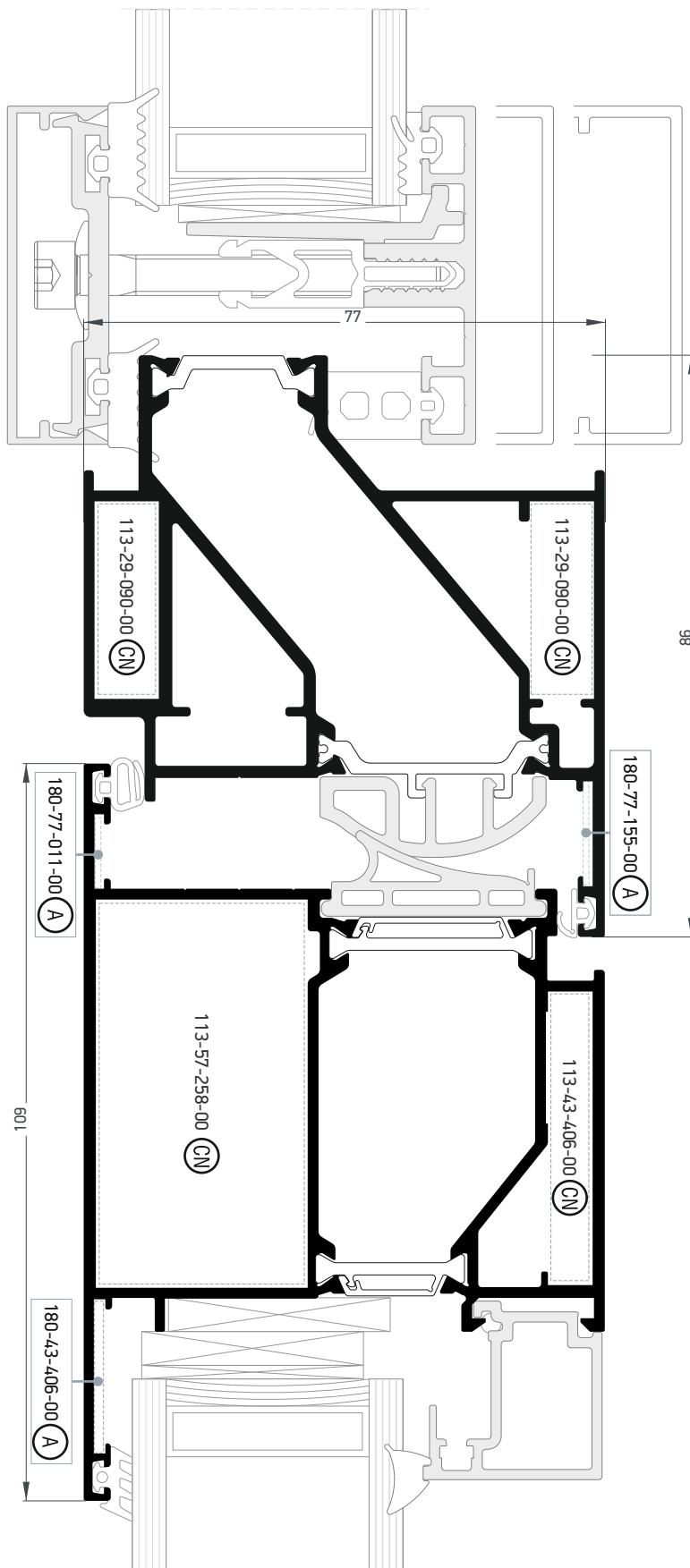
S67582

Φύλλο κύριας εισόδου ανοιγόμενης μέσα
Hinged sash for entrance door inwards



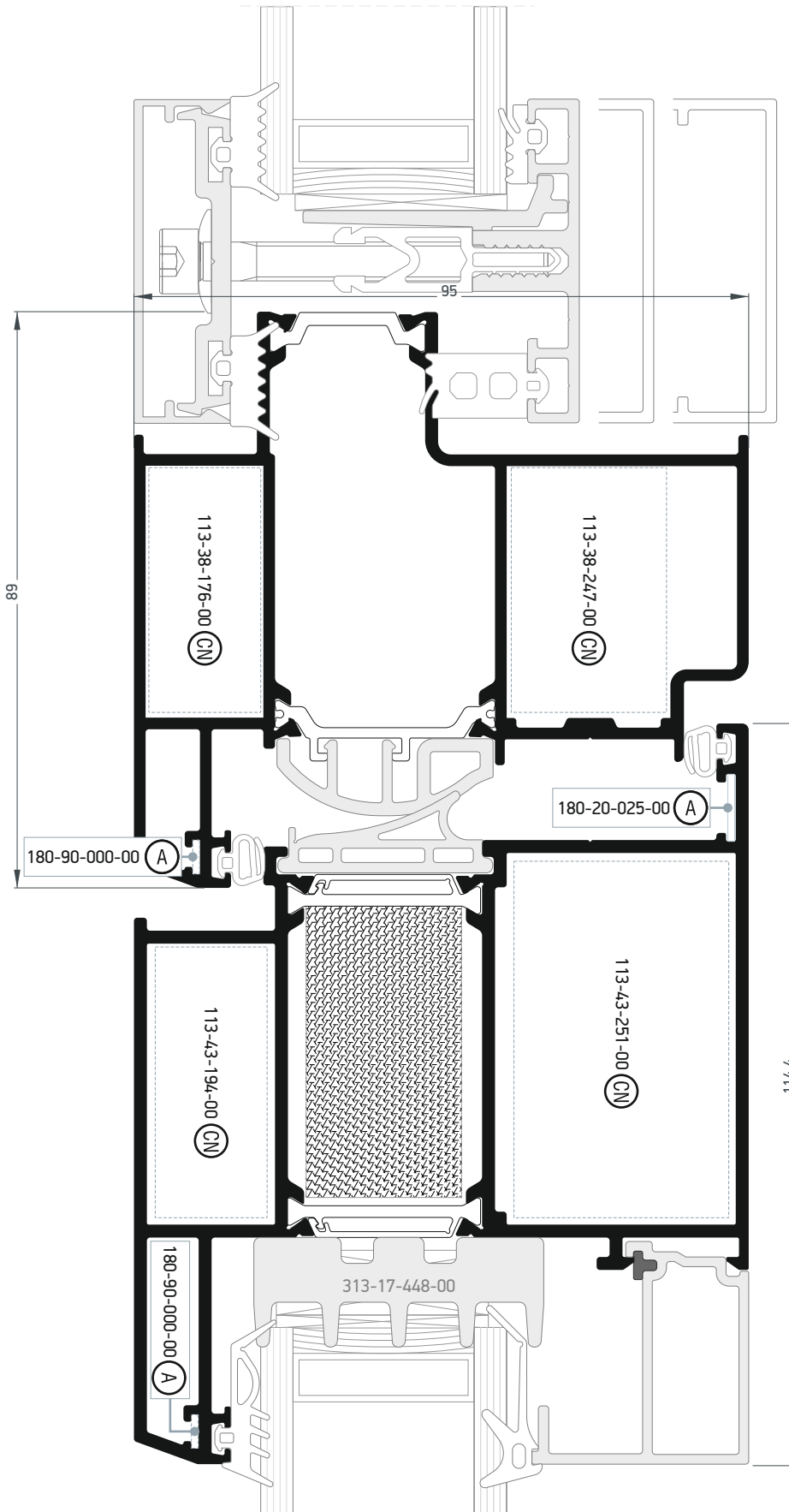
S77334	
Κάσα κύριας εισόδου Hinged frame for entrance door	
Βάρος - Weight	2000,5 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	37,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	40,8 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-29-090-00 113-29-304-00
Γωνία επιπεδότητας Alignment corner	180-77-155-00

S77582	
Φύλλο κύριας εισόδου ανοιγόμενης μέσα Hinged sash for entrance door inwards	
Βάρος - Weight	2227 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	66,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	65,3 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-43-406-00 113-57-258-00
Γωνία επιπεδότητας Alignment corner	180-43-406-00 180-77-011-00



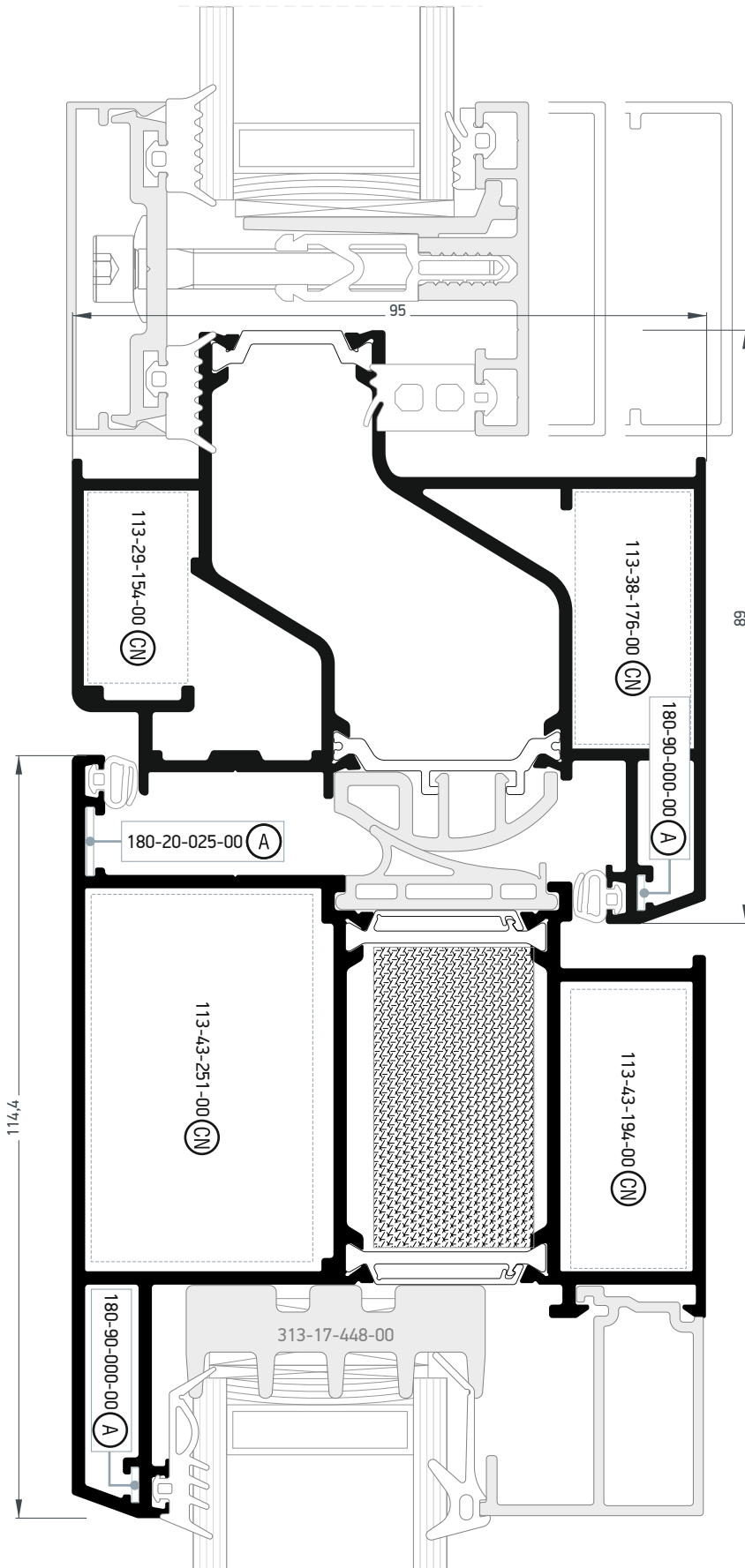
S77336	
Κάσα κύριας εισόδου Hinged frame for entrance door	
Βάρος - Weight	2235 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	41,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	42,24 cm ⁴
Γωνία επιπεδότητας Alignment corner	180-77-155-00
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-29-090-00

S67584	
Φύλλο κύριας εισόδου ανοιγόμενης έξω Hinged sash for entrance door outwards	
Βάρος - Weight	2181 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	65,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	62,7 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-43-406-00 113-57-258-00
Γωνία επιπεδότητας Alignment corner	180-43-406-00 180-77-011-00



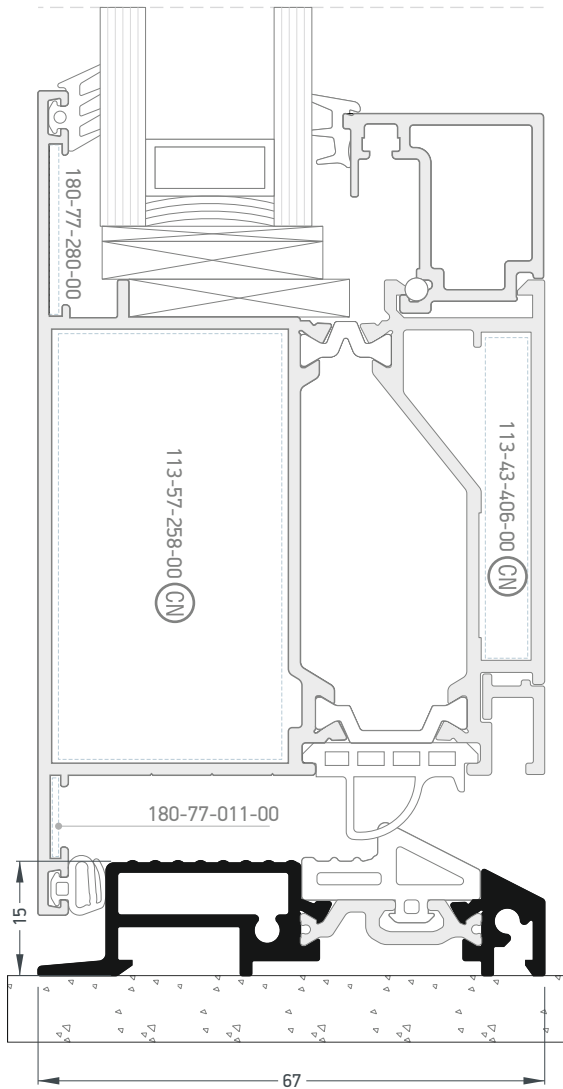
S95778	
Κάσα κύριας εισόδου Hinged frame for entrance door	
Βάρος - Weight	2409 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	61,23 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	59,58 cm ⁴
Γωνία επιπεδότητας Alignment corner	180-90-000-00
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-38-176-00 113-38-247-00

S95004	
Φύλλο κύριας εισόδου ανοιγόμενης μέσα Hinged sash for entrance door inwards	
Βάρος - Weight	2941 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	123 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	96 cm ⁴
Γωνία επιπεδότητας Alignment corner	180-90-000-00 180-20-025-00
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-43-251-00 113-43-194-00

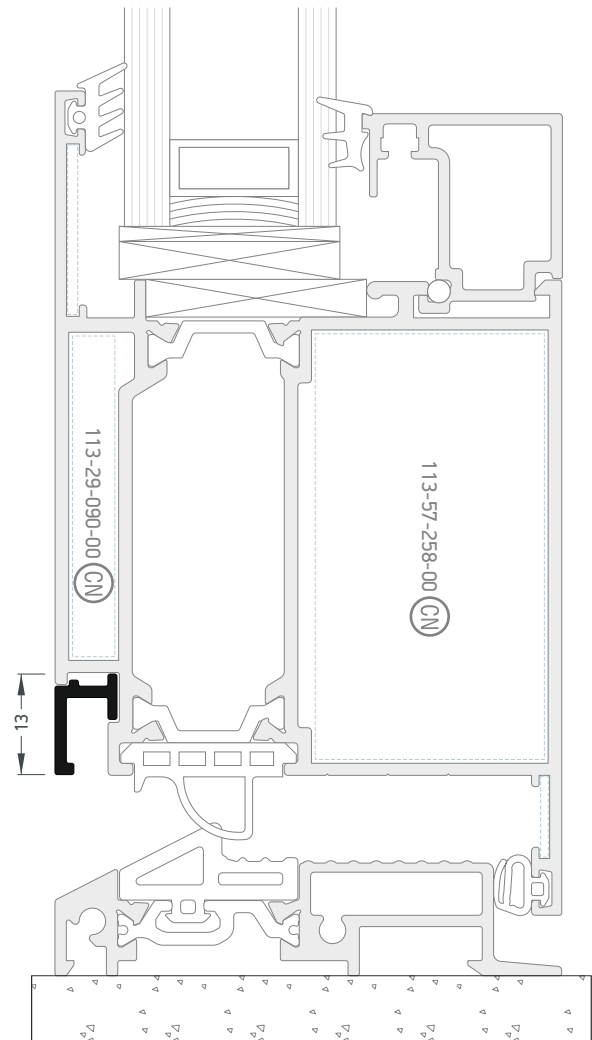


S95776	
Κάσα κύριας εισόδου Hinged frame for entrance door	
Βάρος - Weight	2660.3 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	68,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	60,84 cm ⁴
Γωνία επιπεδότητας Alignment corner	180-90-000-00
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-38-176-00 113-29-154-00

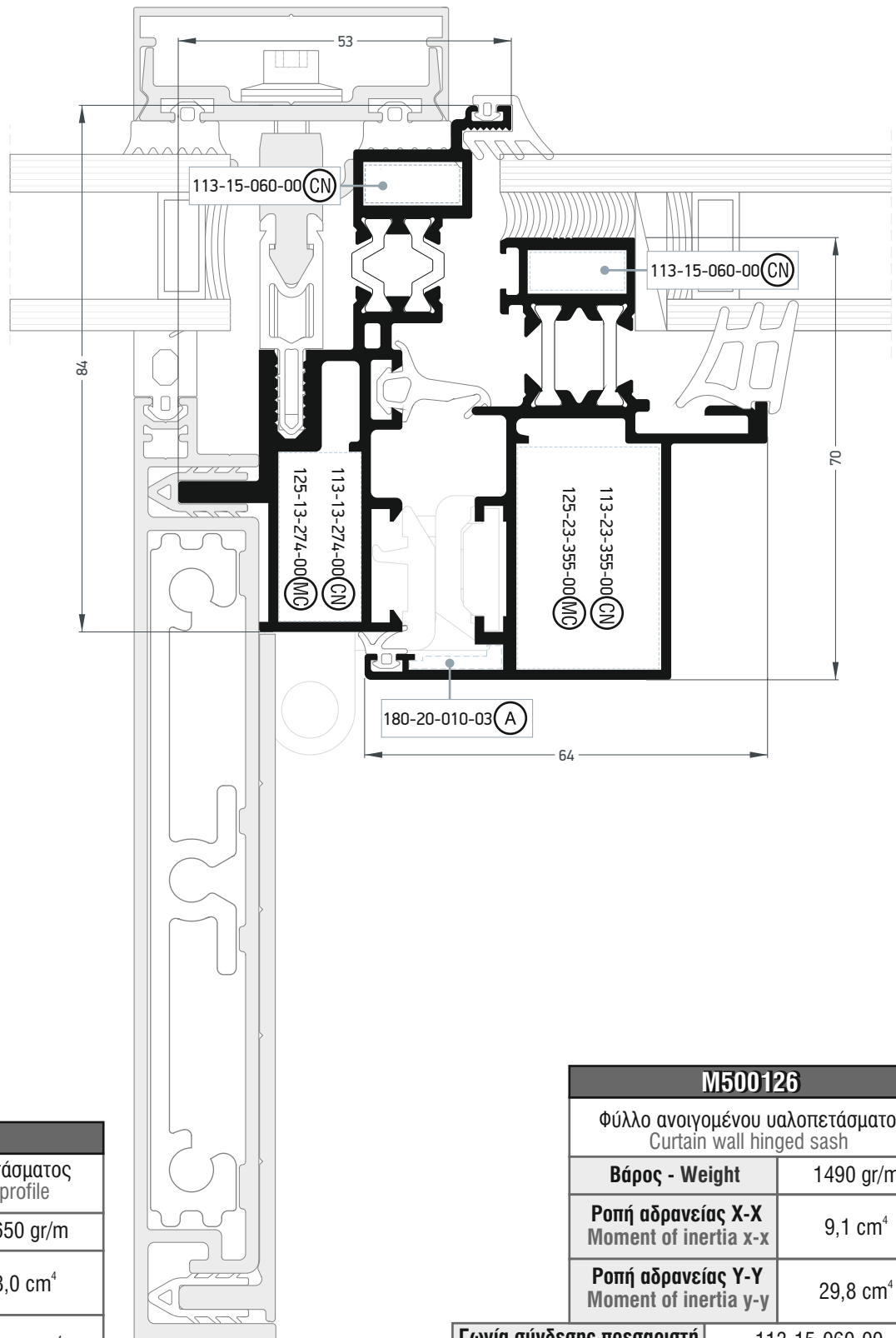
S95006	
Φύλλο κύριας εισόδου ανοιγόμενης έξω Hinged sash for entrance door outwards	
Βάρος - Weight	2941 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	122,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	96,1 cm ⁴
Γωνία επιπεδότητας Alignment corner	180-20-025-00
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-43-251-00 113-43-194-00



S67774	
Κατωκάσι Threshold	
Βάρος - Weight	714 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	10,91 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,46 cm ⁴
Τάπα End cap	310-67-774-03



S77116	
Νεροσταλάκτης Water dripper	
Βάρος - Weight	95,5 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,05 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,03 cm ⁴
Τάπα End cap	310-77-116-03



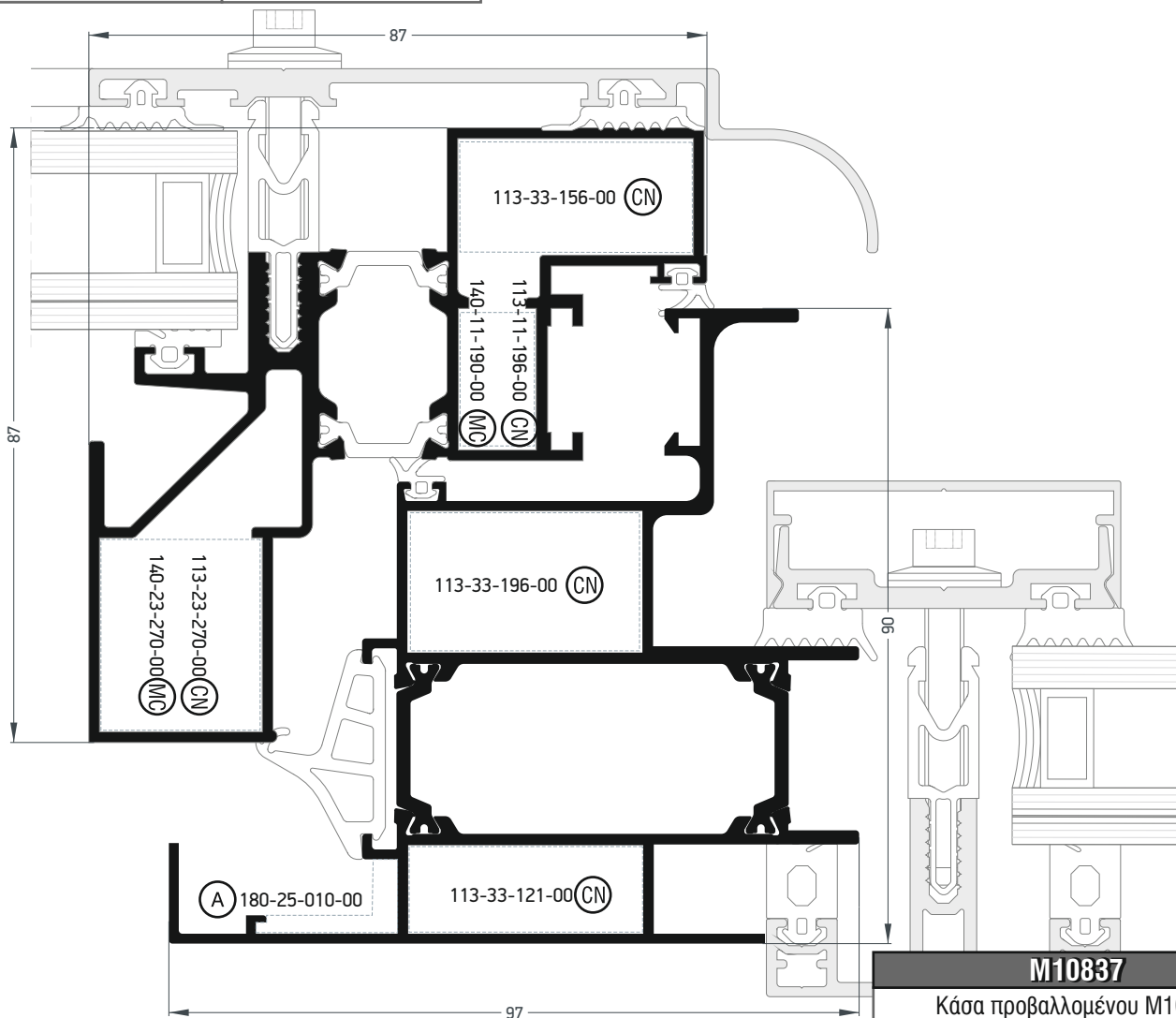
M500129	
Κάσα ανοιγομένου υαλοπετάσματος Curtain wall hinged frame profile	
Βάρος - Weight	1650 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	8,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	33,2 cm ⁴

Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-15-060-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-13-274-00

M500126	
Φύλλο ανοιγομένου υαλοπετάσματος Curtain wall hinged sash	
Βάρος - Weight	1490 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	9,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	29,8 cm ⁴

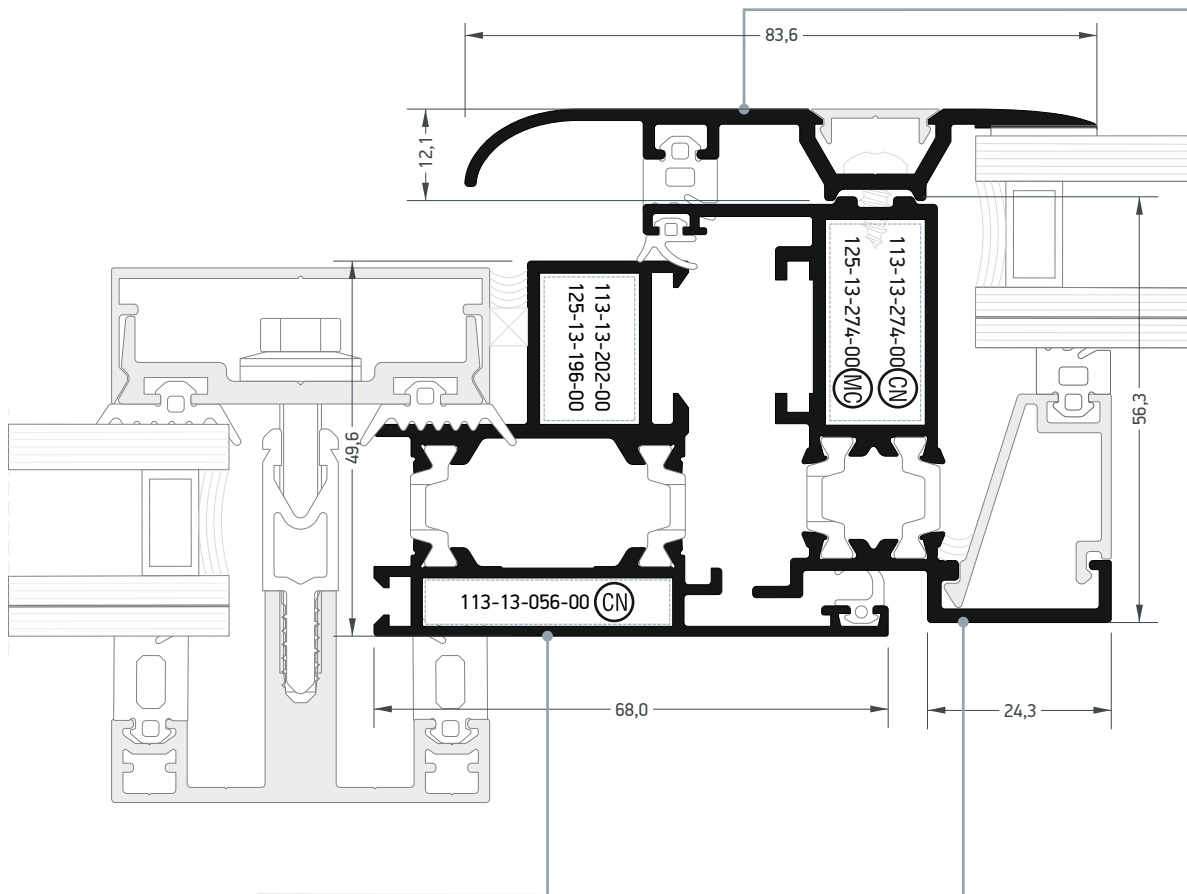
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-15-060-00 113-23-355-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-23-355-00
Γωνία επιπεδότητας Alignment corner	180-20-010-03

M10840	
Φύλλο προβαλλομένου M10800 Projected sash profile M10800	
Βάρος - Weight	2191 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	39,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	47,0 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-33-156-00 113-11-196-00 113-23-270-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	140-11-190-00 140-23-270-00



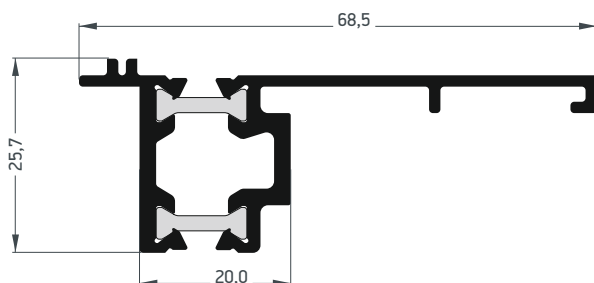
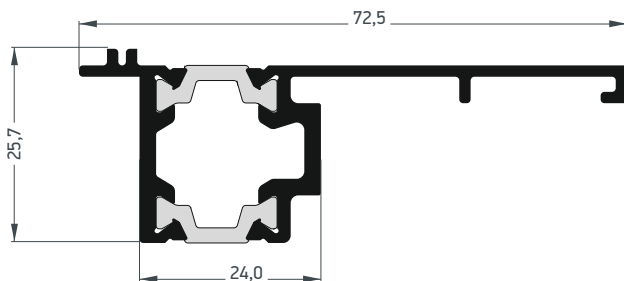
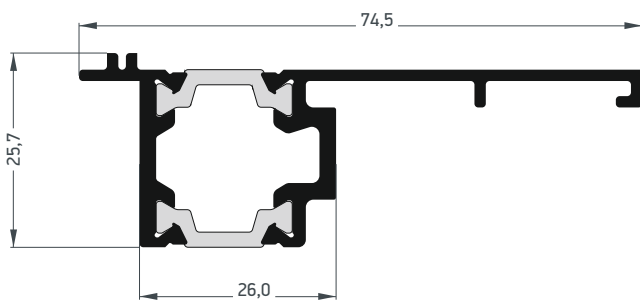
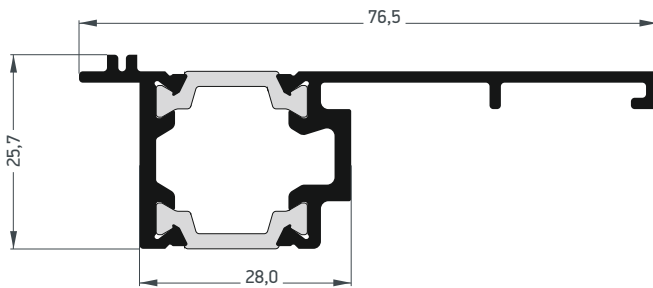
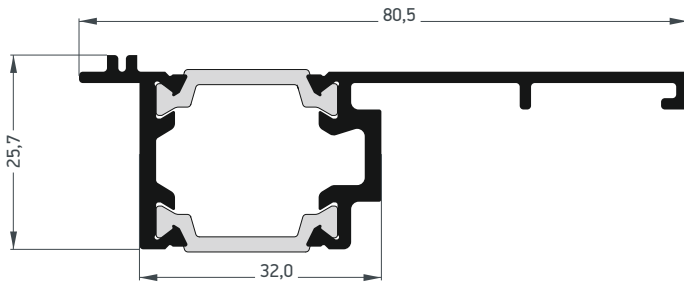
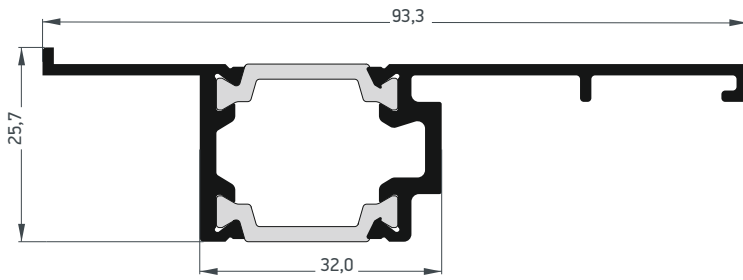
M10837	
Κάσα προβαλλομένου M10800 Projected frame profile M10800	
Βάρος - Weight	2114 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	54,8 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	48,7 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή Crimp nail cleat	113-33-196-00 113-33-121-00
Γωνία επιπεδότητας Alignment corner	180-25-010-00

M70129	
Διακοσμητικό προφίλ Additional profile	
Βάρος - Weight	563,7 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,24 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	10,12 cm ⁴



M70124	
Κάσα ανοιγομένου οροφής Hinged frame	
Βάρος - Weight	1307 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	11,40 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	13,33 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-13-056-00 113-13-202-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-13-196-00

M70127	
Φύλλο ανοιγομένου οροφής Hinged sash	
Βάρος - Weight	1168 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	16,61 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	6,71 cm ⁴
Γωνία σύνδεσης πρεσαριστή καρφωτή; Crimp nail cleat	113-13-274-00
Γωνία σύνδεσης κουμπωτή αλουμινίου Aluminium spring cleat	125-13-196-00



M500099	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	935 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	3,0 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	17,7 cm ⁴

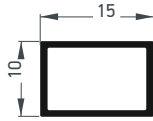
M500070	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	892 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,9 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	15,1 cm ⁴

M500071	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	870 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	12,8 cm ⁴

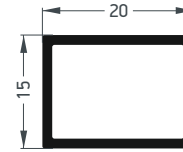
M500072	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	860 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,6 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	11,8 cm ⁴

M500073	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	850 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	10,8 cm ⁴

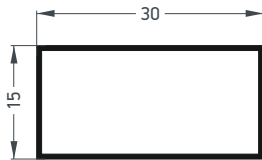
M500074	
Πρόσθετο υαλοπετάσματος Curtain wall additional profile	
Βάρος - Weight	806 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	9,0 cm ⁴



15x10x1,5	
Πρόσθετο Additional profile	
Βάρος - Weight	178,2 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,09 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,18 cm ⁴



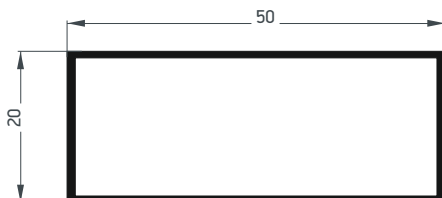
20x15x1,3	
Πρόσθετο Additional profile	
Βάρος - Weight	227 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,5 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,3 cm ⁴



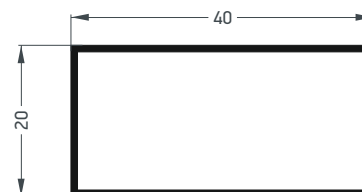
S-30x15x1,3	
Πρόσθετο Additional profile	
Βάρος - Weight	298 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,41 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,25 cm ⁴



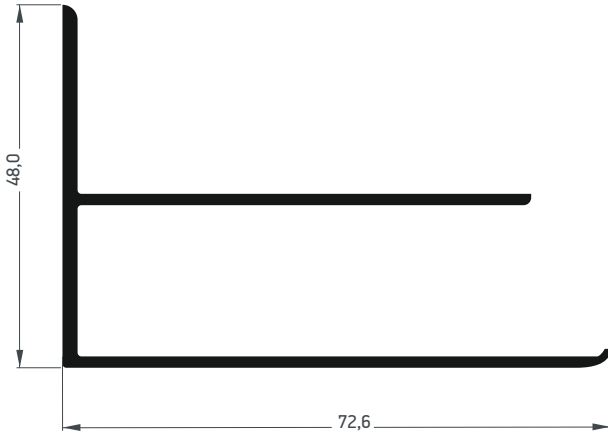
M70221	
Πρόσθετο Additional profile	
Βάρος - Weight	517,4 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,67 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	3,03 cm ⁴



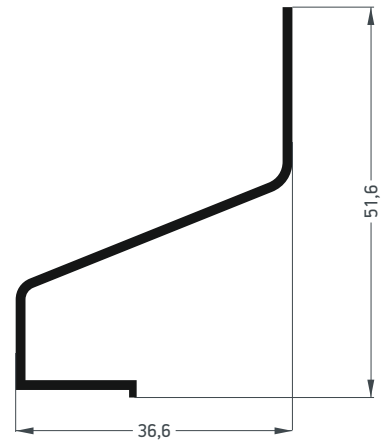
S-50x20x1,3	
Πρόσθετο Additional profile	
Βάρος - Weight	473,1 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	1,25 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	5,39 cm ⁴



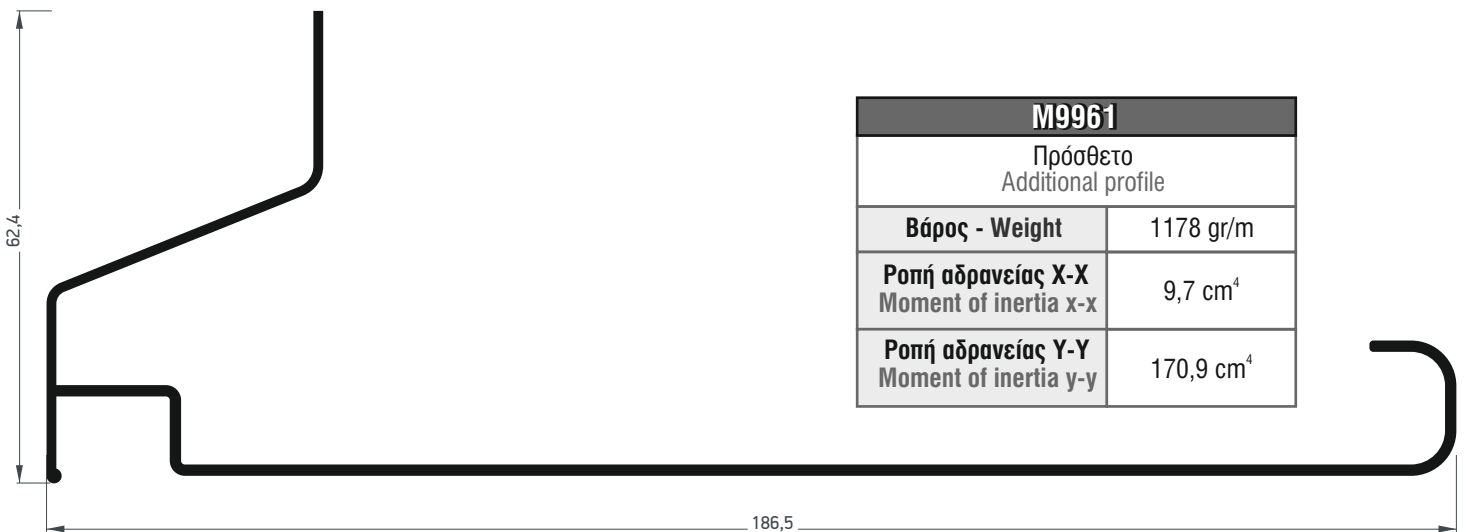
S-40x20x1,2	
Πρόσθετο Additional profile	
Βάρος - Weight	373,2 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,96 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,87 cm ⁴



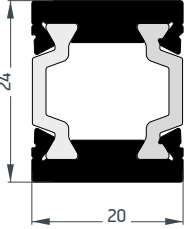
M9962	
Πρόσθετο Additional profile	
Βάρος - Weight	783 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	5,1 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	14,41 cm ⁴



M9970	
Πρόσθετο Additional profile	
Βάρος - Weight	313 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,4 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	2,2 cm ⁴

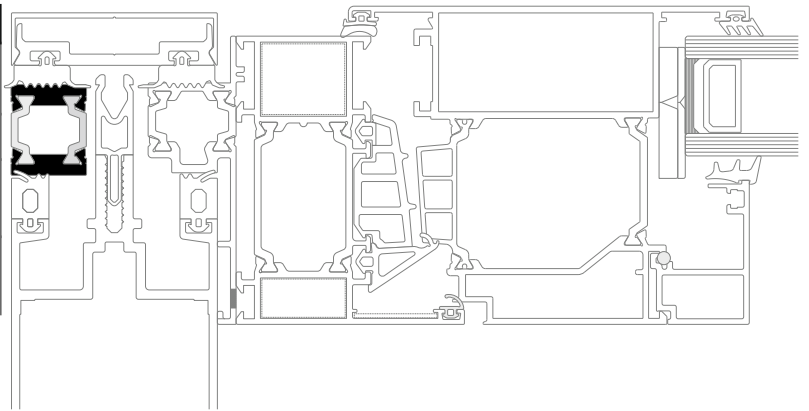
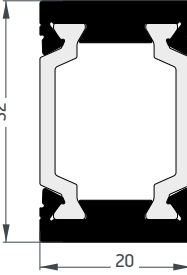


M9961	
Πρόσθετο Additional profile	
Βάρος - Weight	1178 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	9,7 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	170,9 cm ⁴



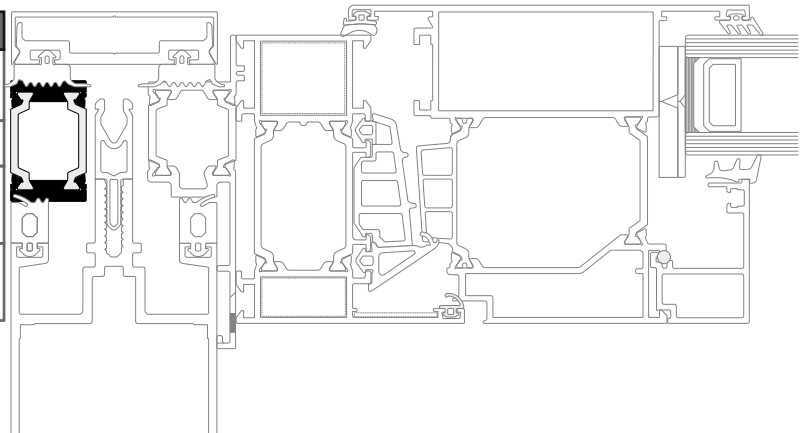
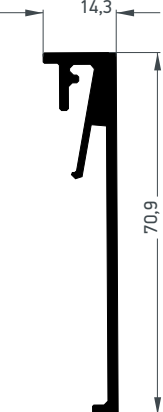
24
20

M71118	
Πρόσθετο Additional profile	
Βάρος - Weight	643 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	2,08 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,23 cm ⁴

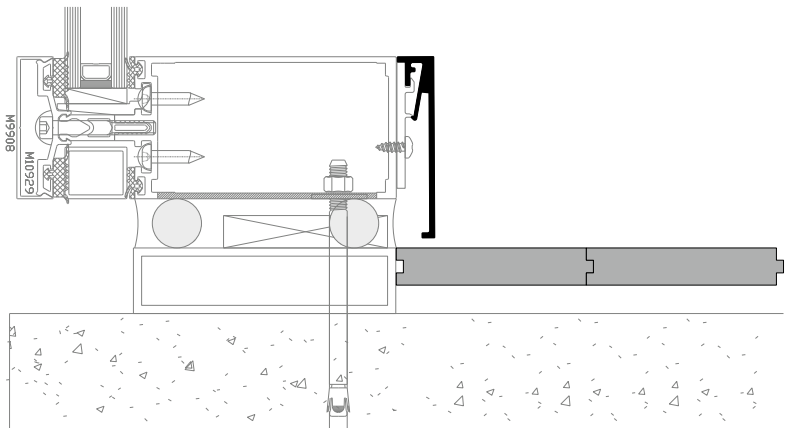

32
20

M71120	
Πρόσθετο Additional profile	
Βάρος - Weight	691 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	4,45 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	1,51 cm ⁴

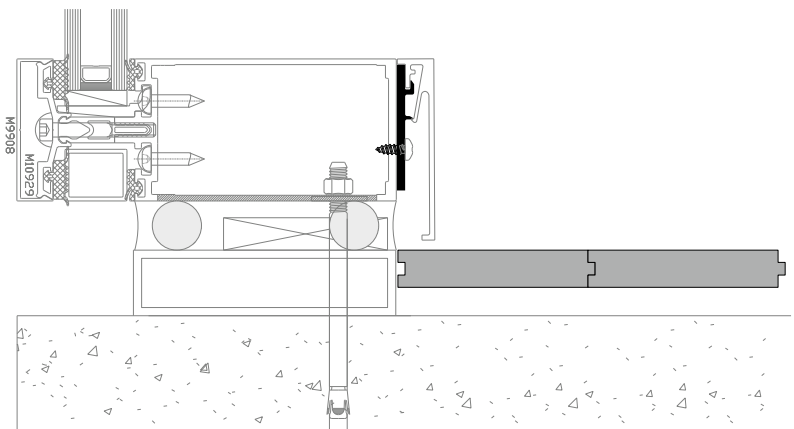
14,3
70,9

M71121	
Προστατευτικό Καπάκι End Cap	
Βάρος - Weight	656 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	0,28 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	11,93 cm ⁴

6,7
48,8

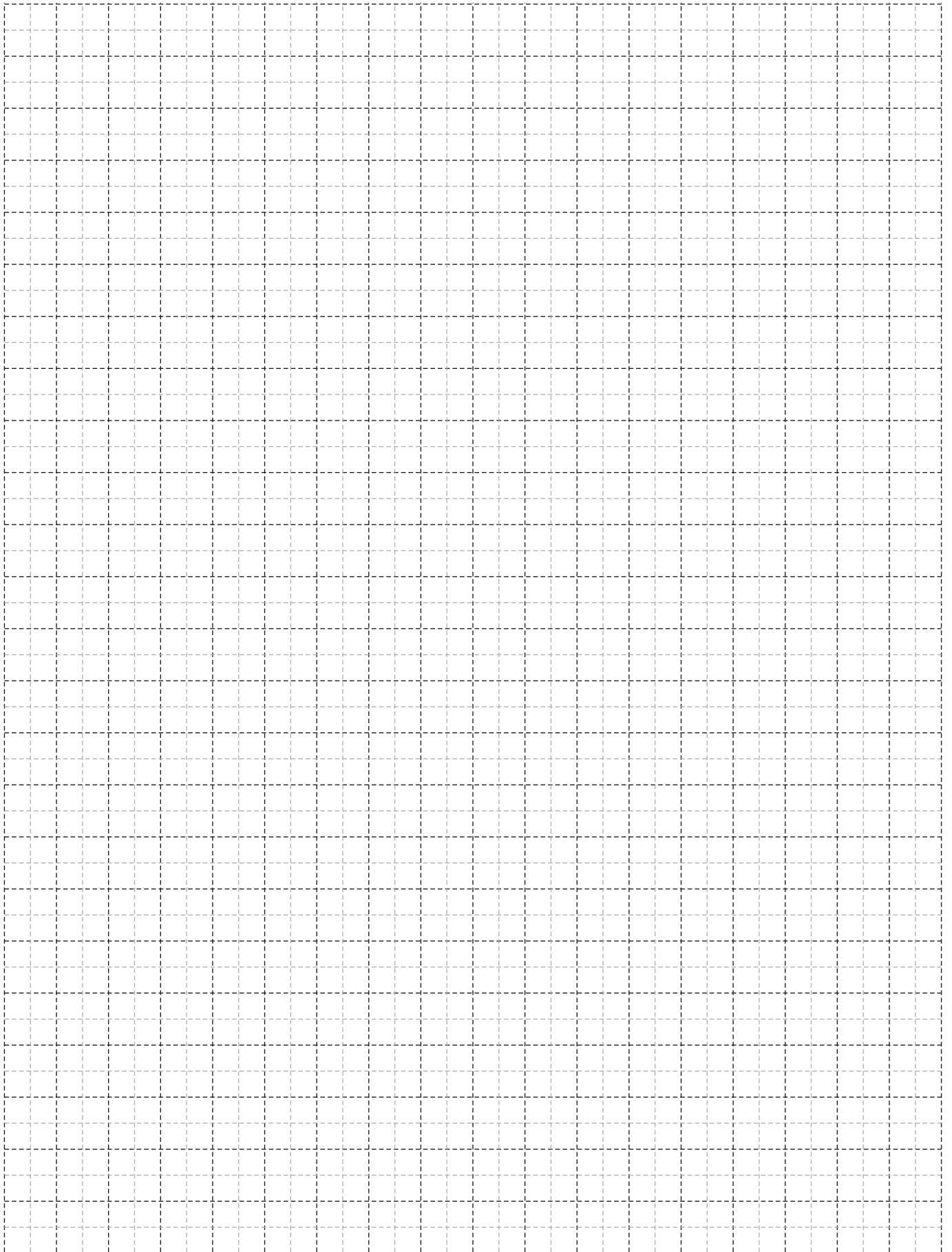
M71967	
Προστατευτικό Καπάκι End Cap	
Βάρος - Weight	458,6 gr/m
Ροπή αδρανείας X-X Moment of inertia x-x	3,30 cm ⁴
Ροπή αδρανείας Y-Y Moment of inertia y-y	0,03 cm ⁴





ΒΑΣΙΚΕΣ ΤΥΠΟΛΟΓΙΕΣ

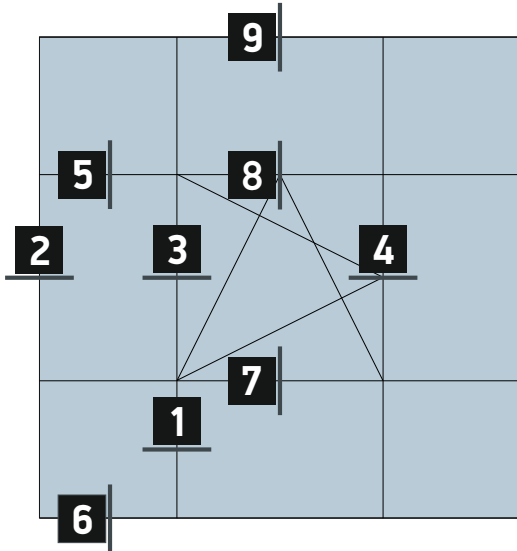
BASIC TYPOLOGIES



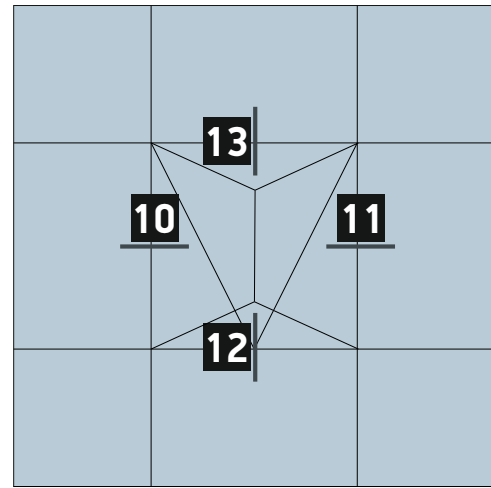
M7 Standard

Βασικές Τομές - Standard sections

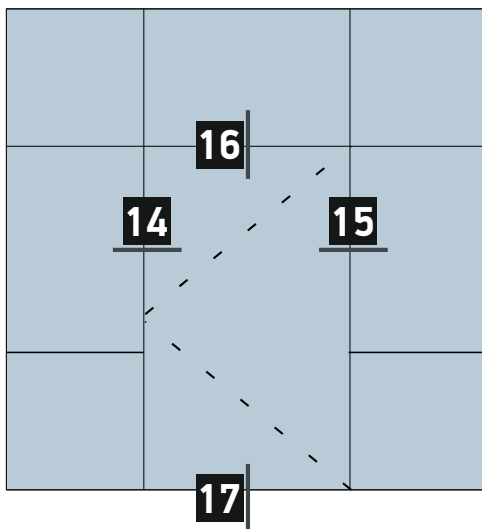
Ανοιγόμενο - ανακλινόμενο παράθυρο
One sash tilt & casement window



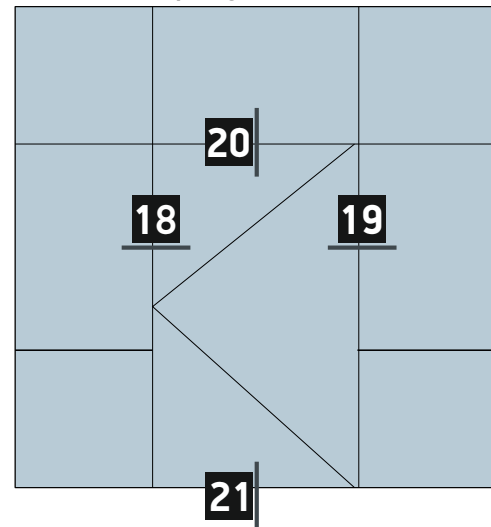
Προβαλόμενο παράθυρο , παράθυρο παράλληλης προβολής
Projected window & Parallel projected window



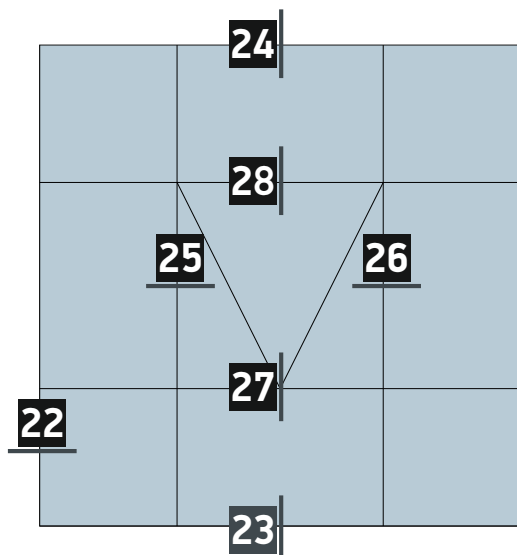
Εξωτερικά ανοιγόμενη πόρτα
Opening outside door



Εσωτερικά ανοιγόμενη πόρτα
Opening inside door



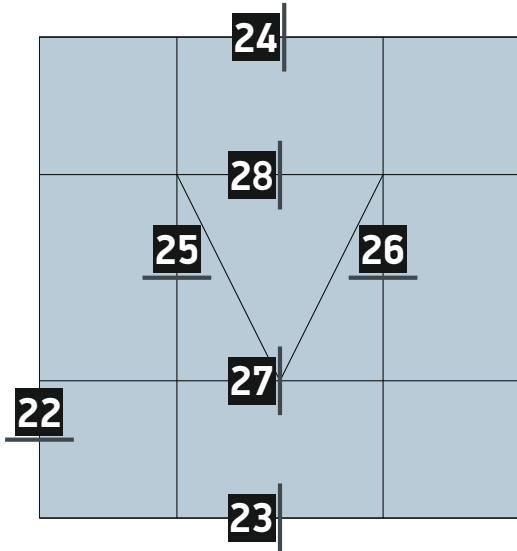
Προβαλόμενο παράθυρο με λάστιχα
Projected window with gaskets



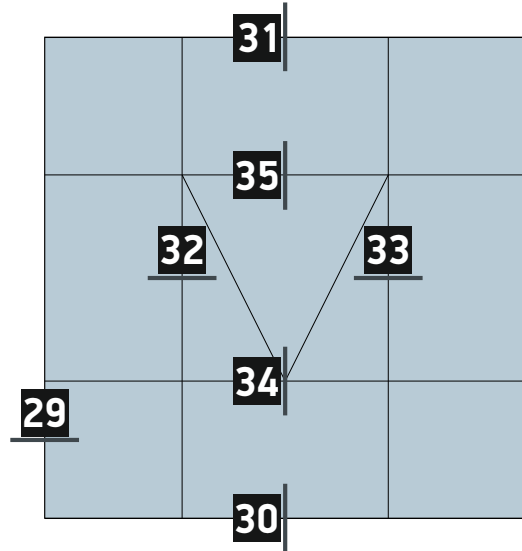
M7 Structural

Βασικές Τομές - Standard sections

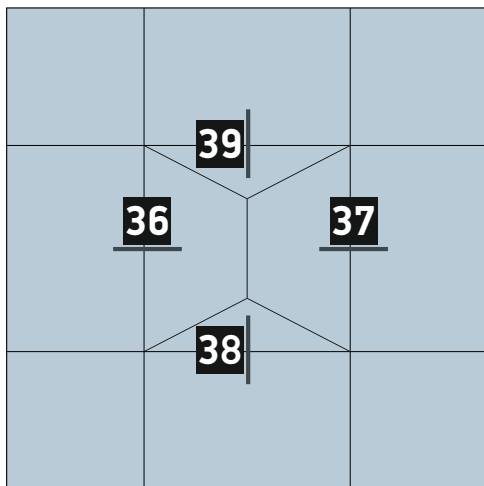
Προβαλόμενο παράθυρο με λάστιχα
Projected window with gaskets



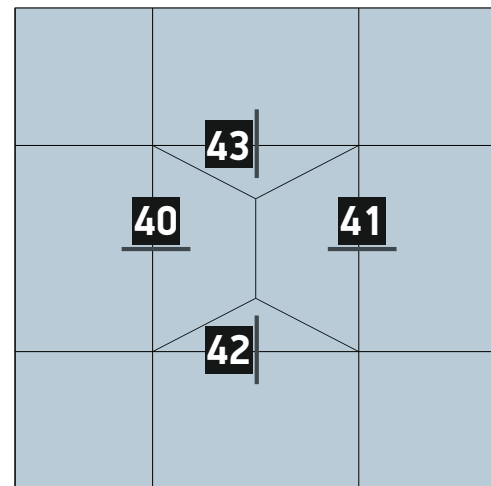
Προβαλόμενο παράθυρο με σιλικόνη
Projected window with silicone



Παράθυρο παράλληλης προβολής με λάστιχα
Parallel projected window with gaskets

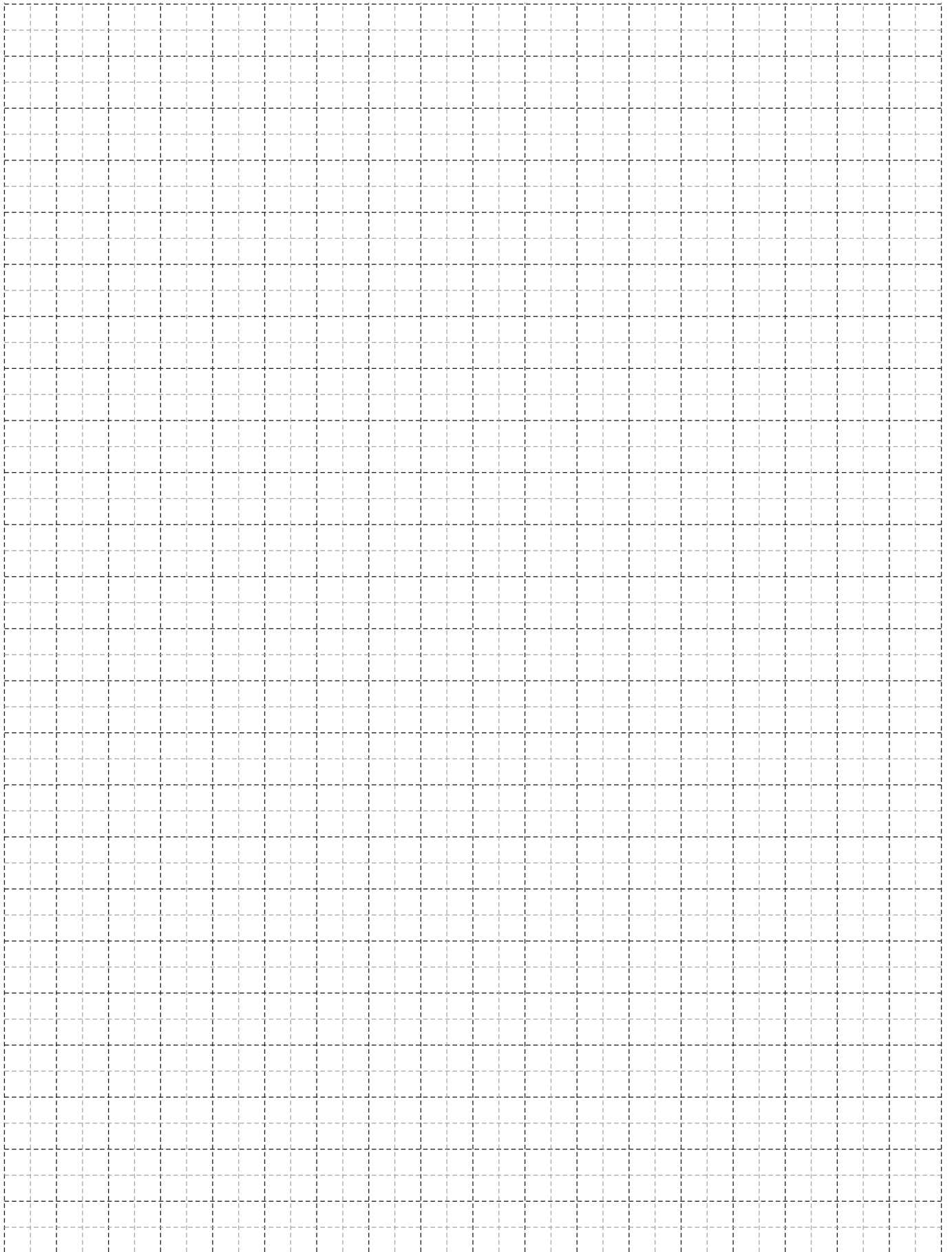


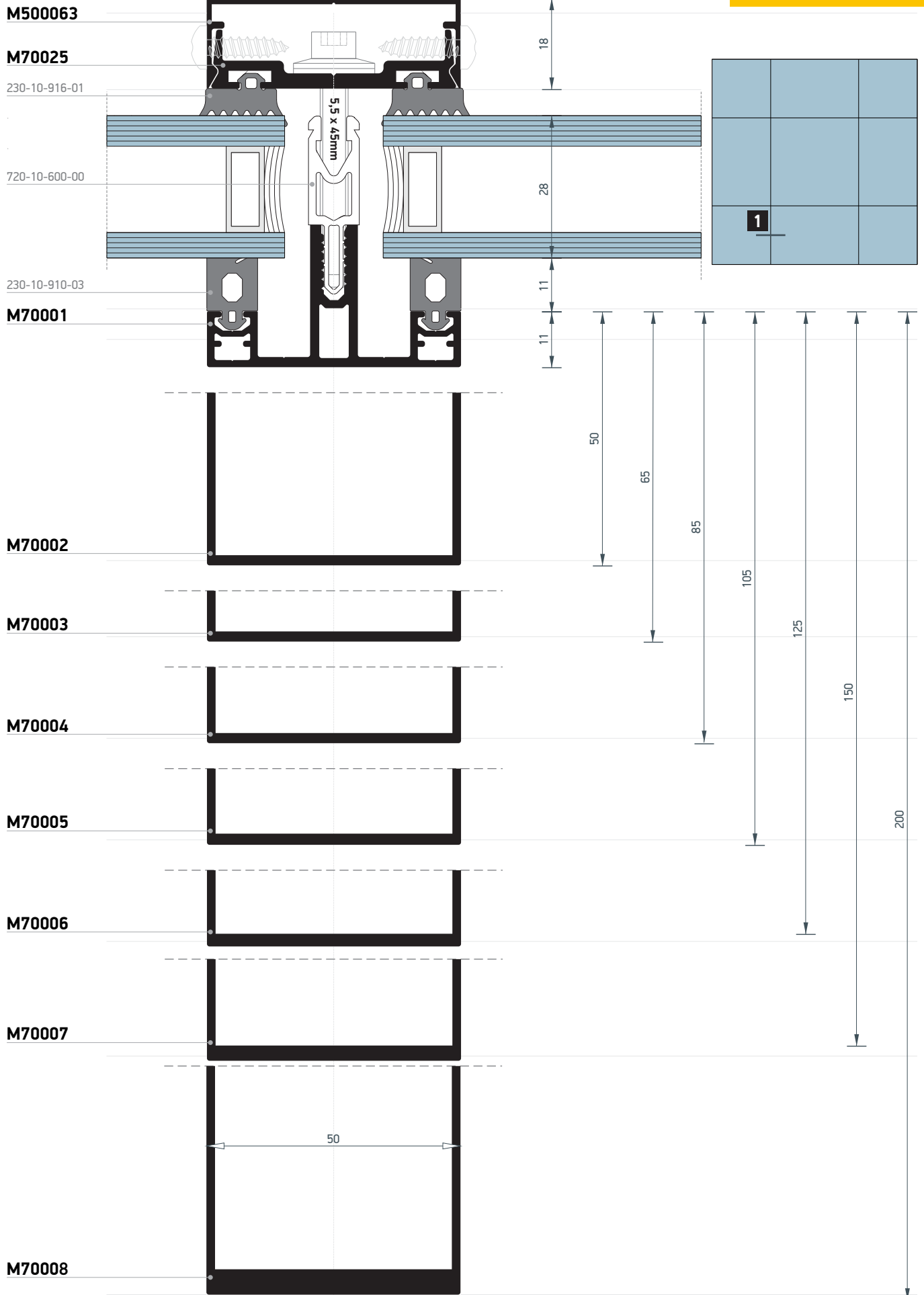
Παράθυρο παράλληλης προβολής με σιλικόνη
Parallel projected window with silicone

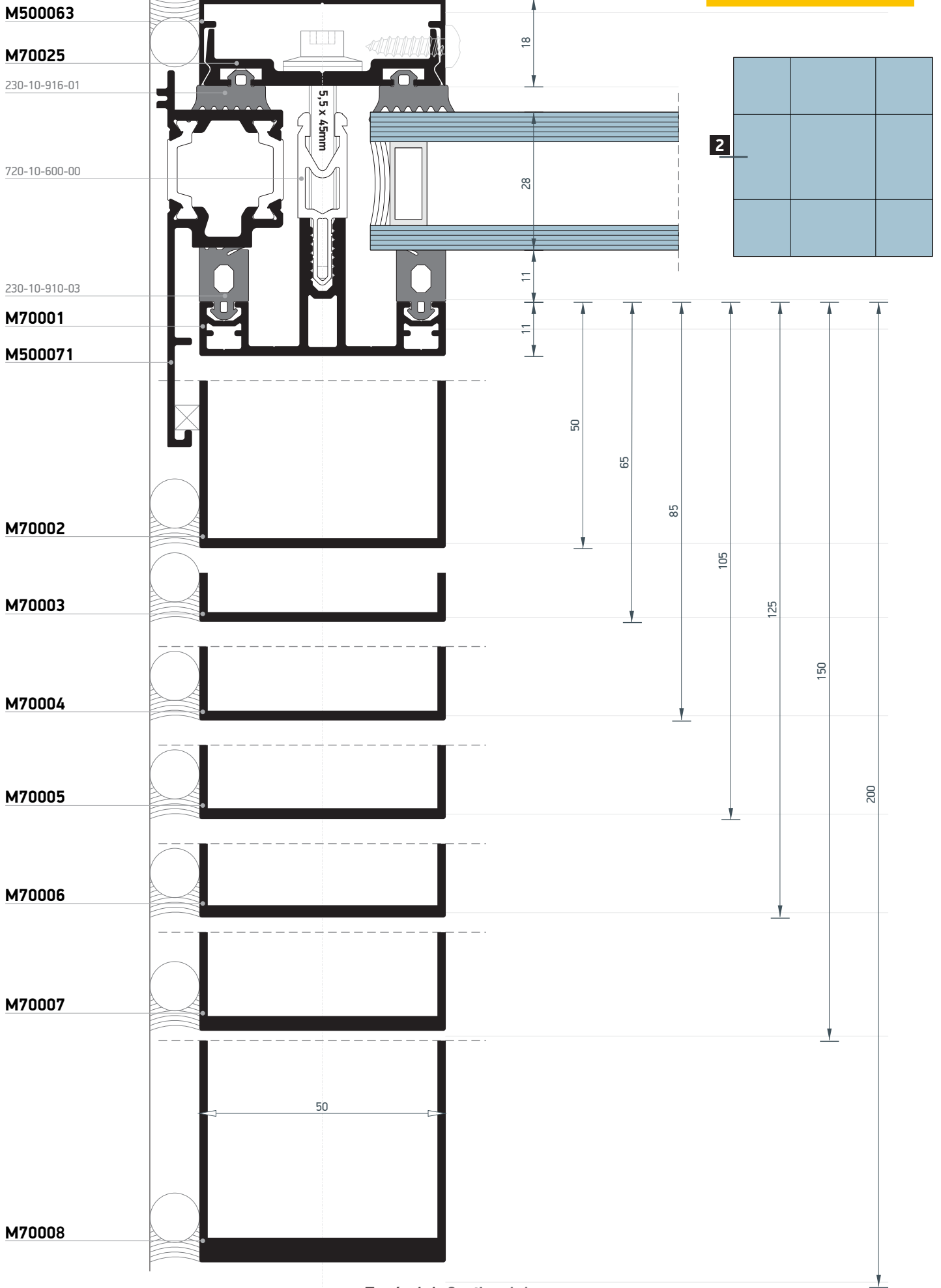


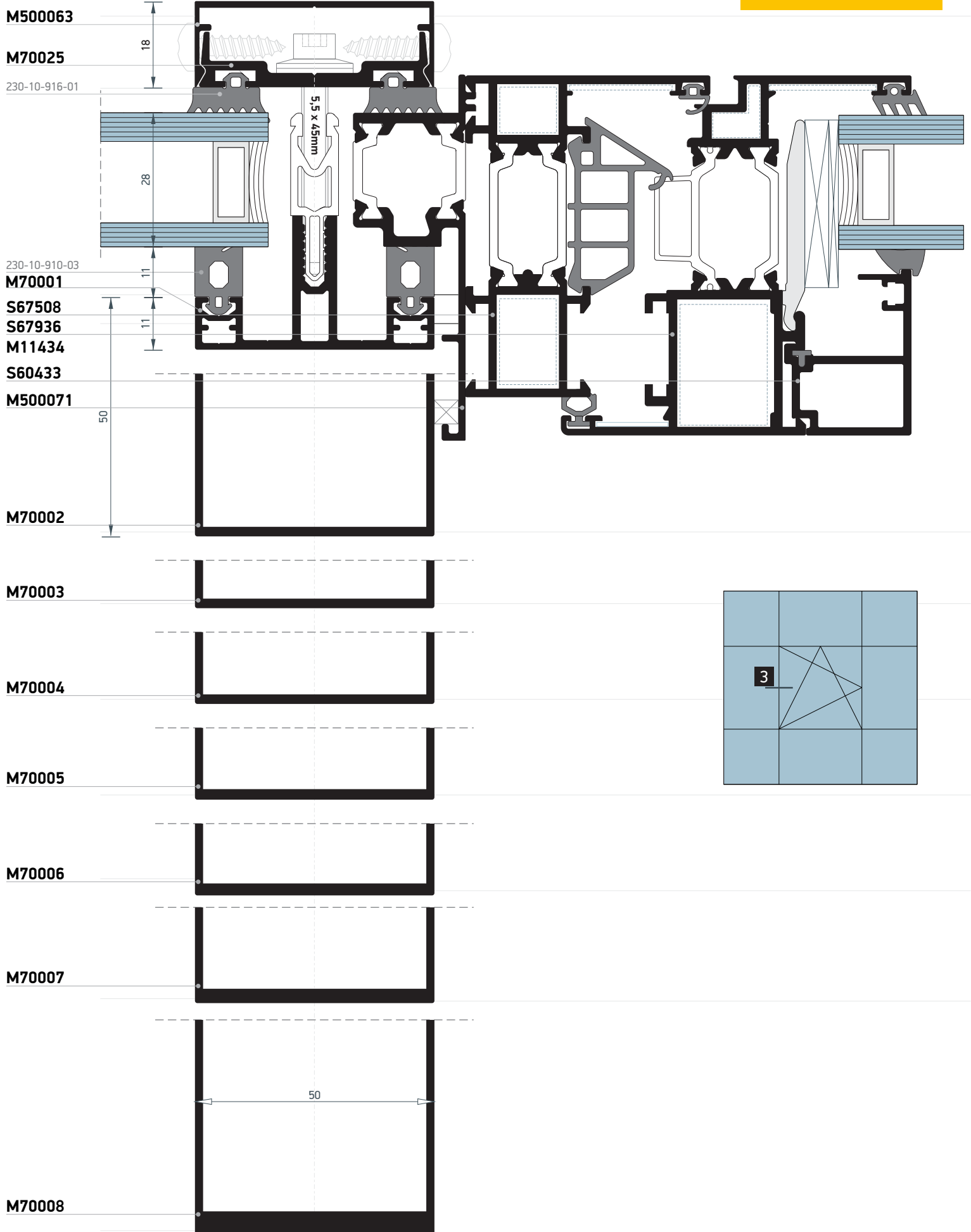


TOMEΣ 1:1
SECTIONS 1:1

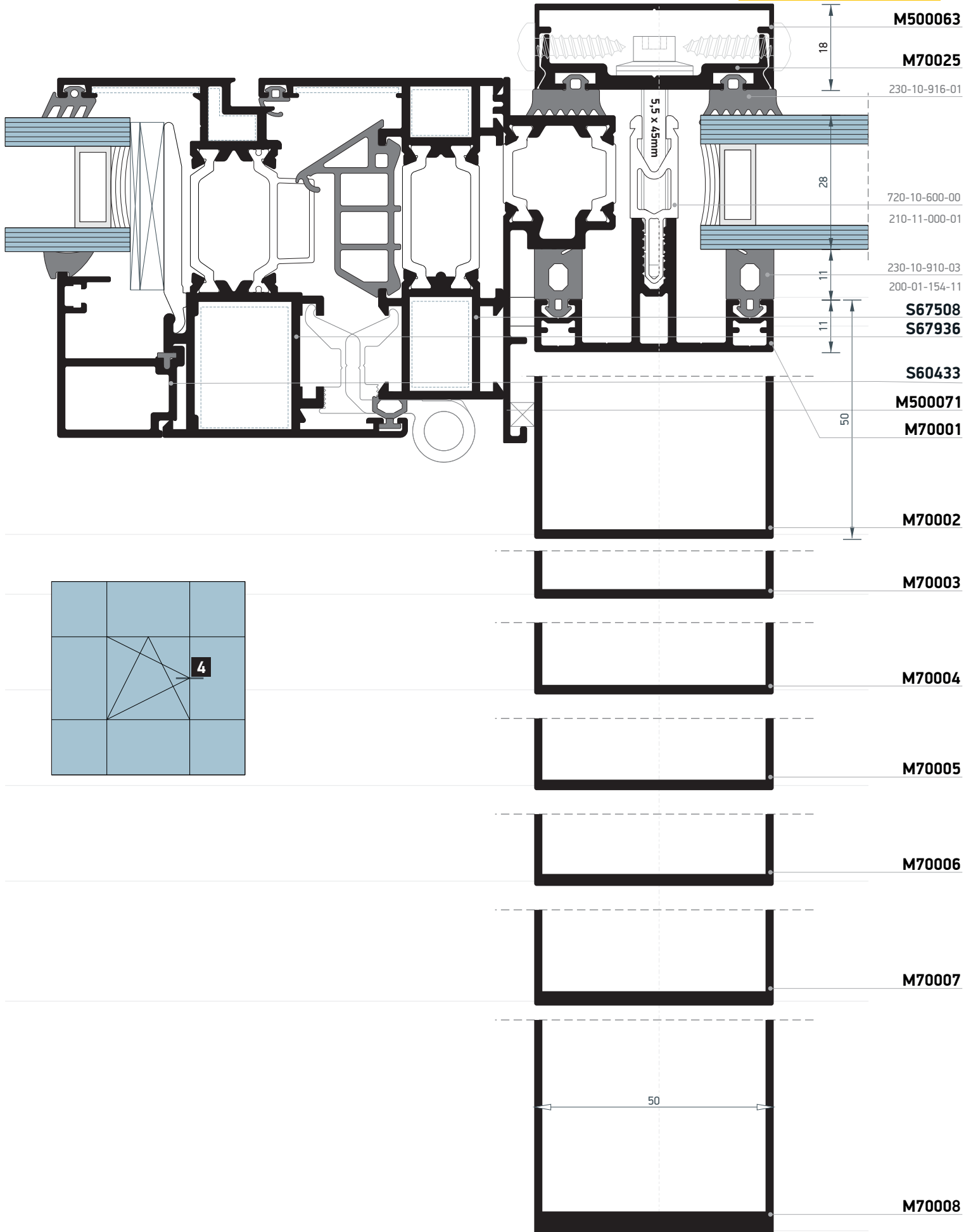


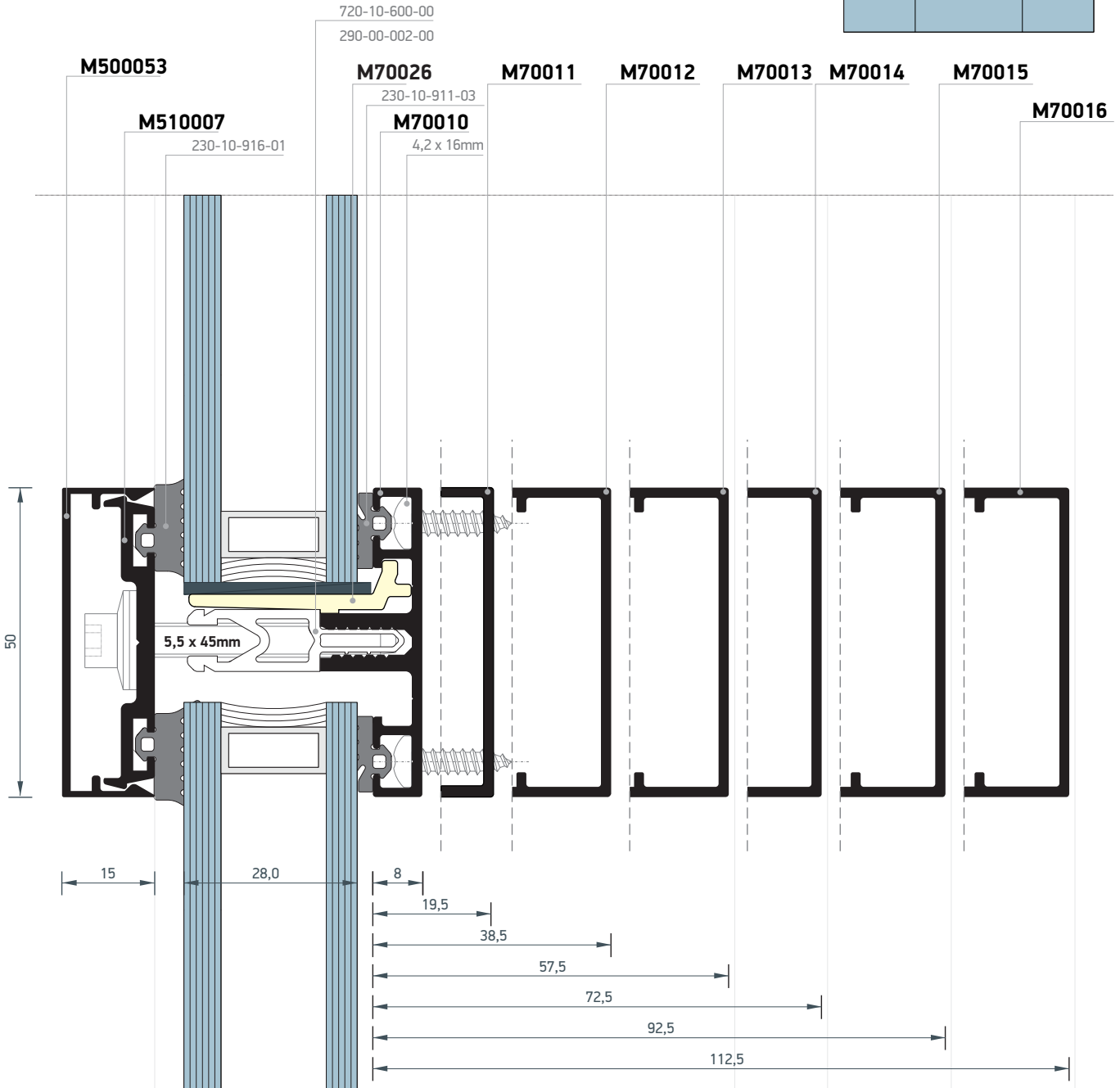
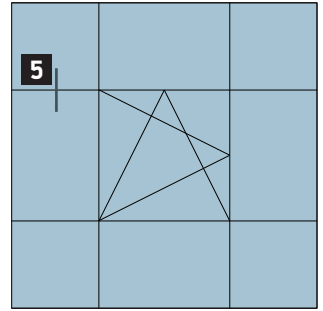


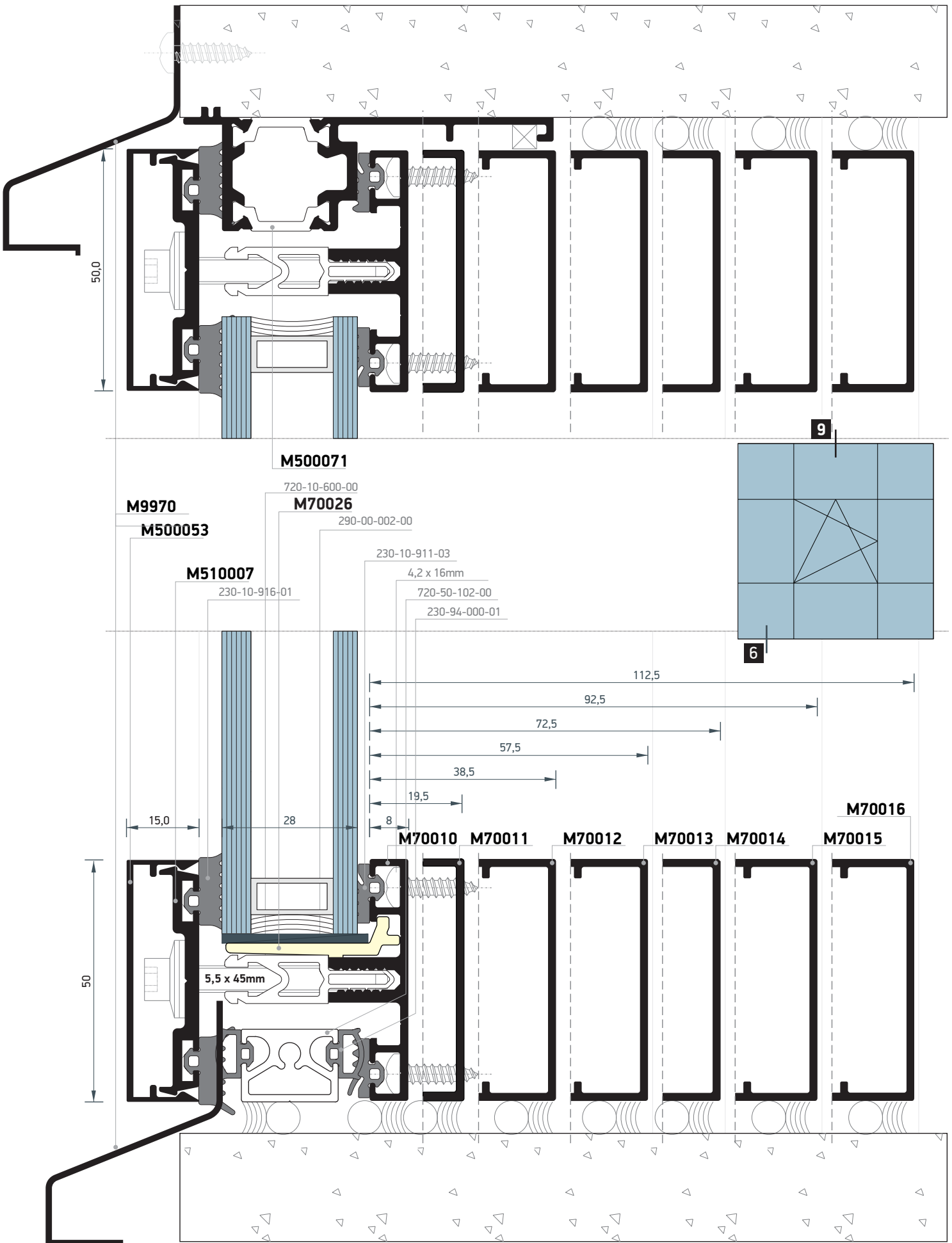


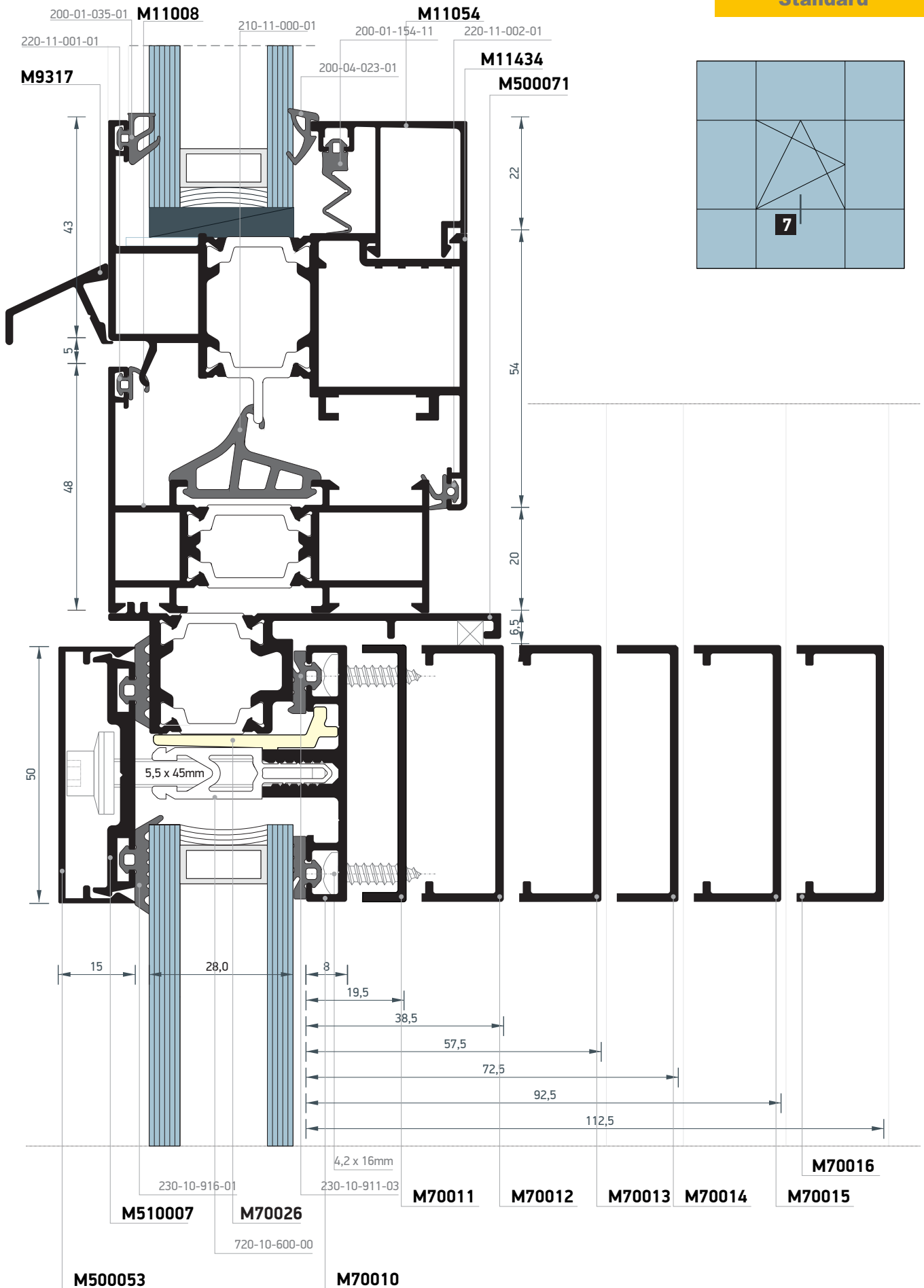


Standard









M500063

M70025

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230-10-801-01

720-10-600-00

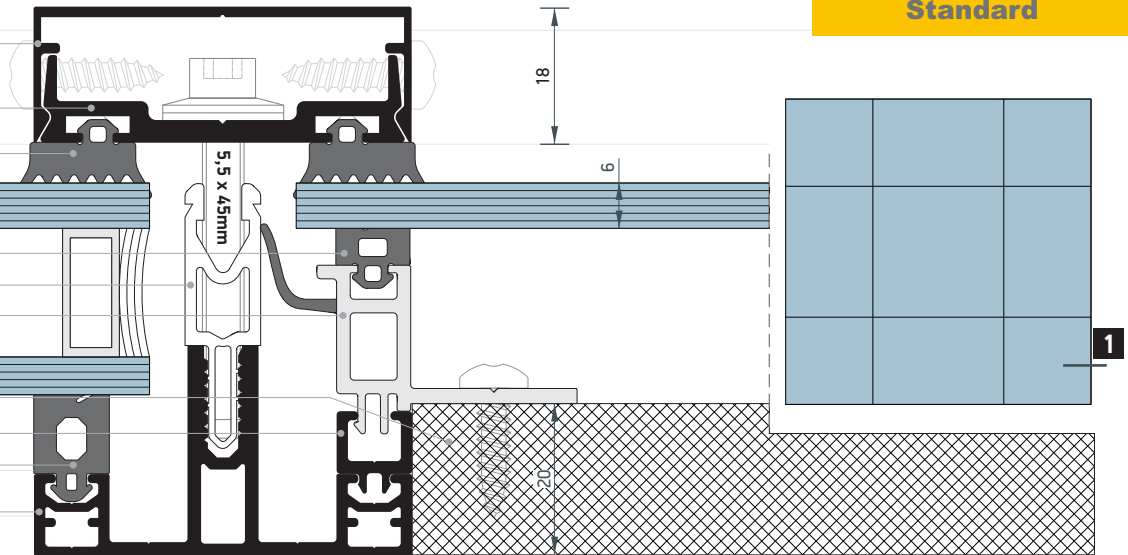
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Thermal Insulation

M70022

230-10-910-03

M70001



M70002

M70003

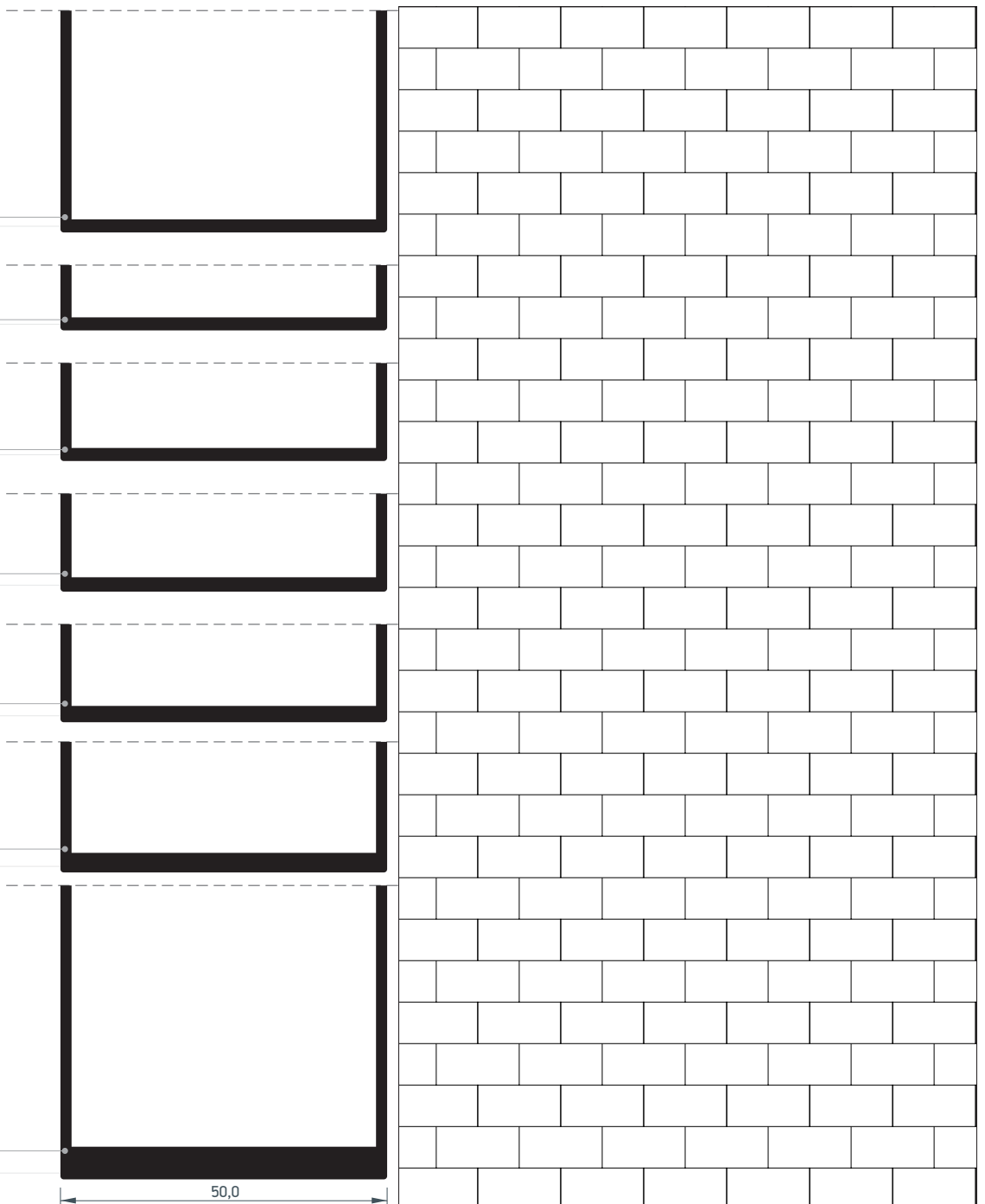
M70004

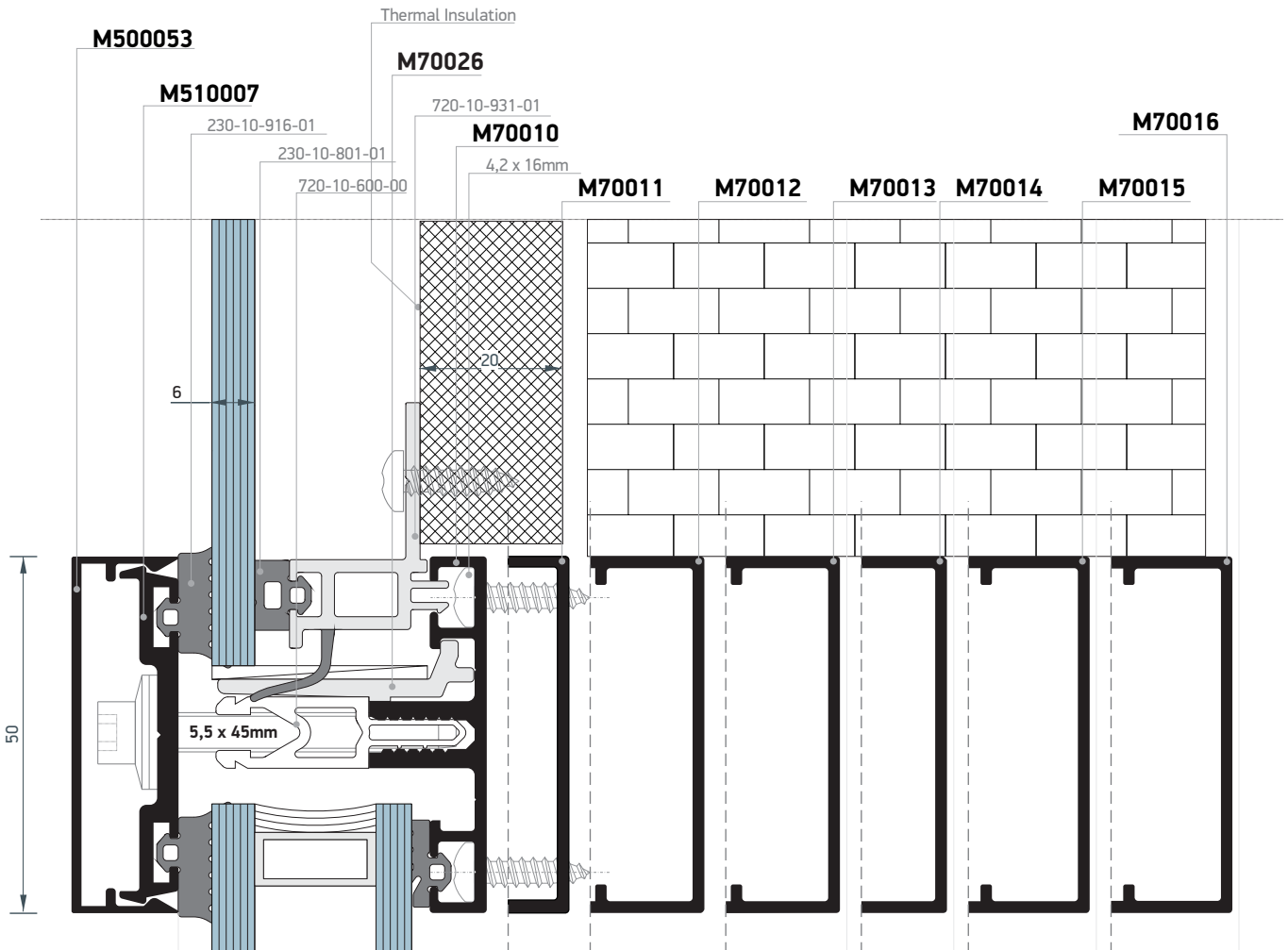
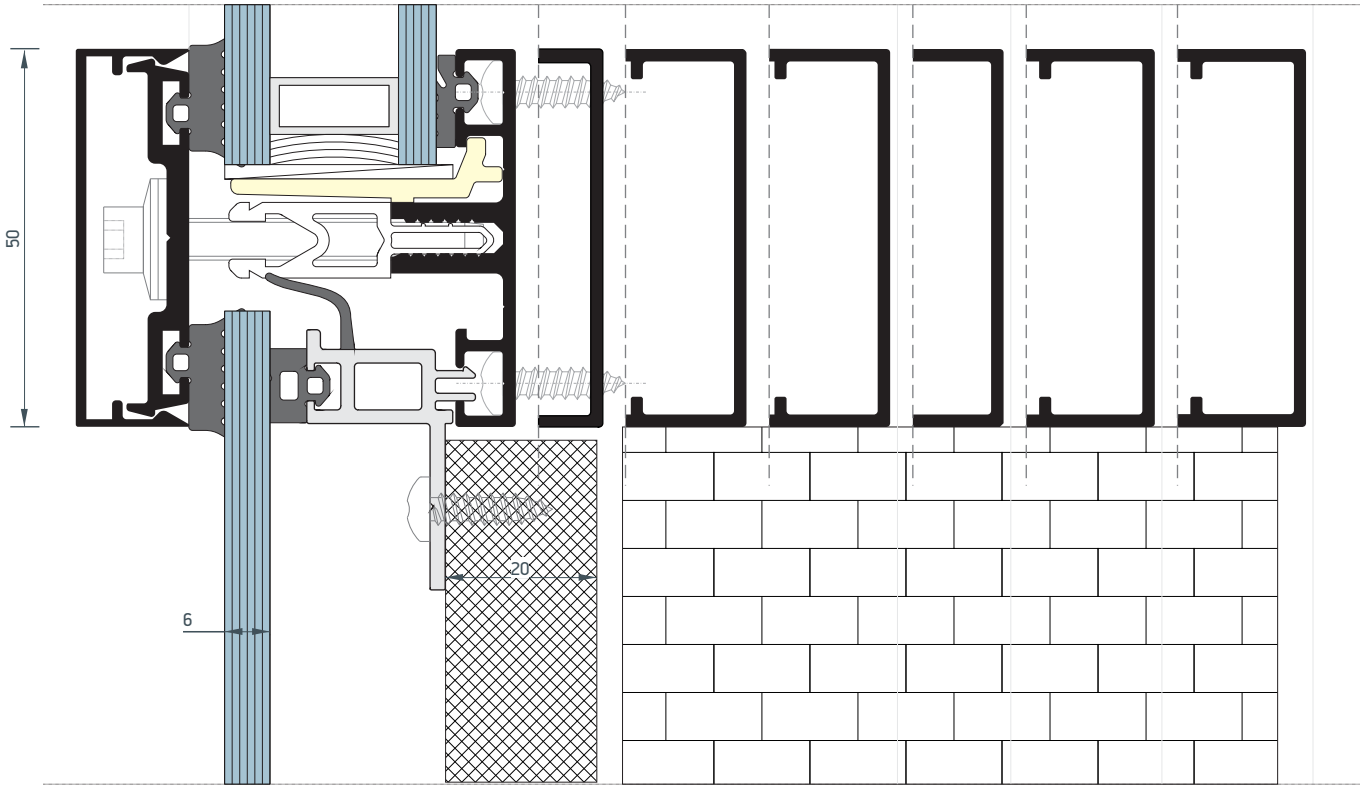
M70005

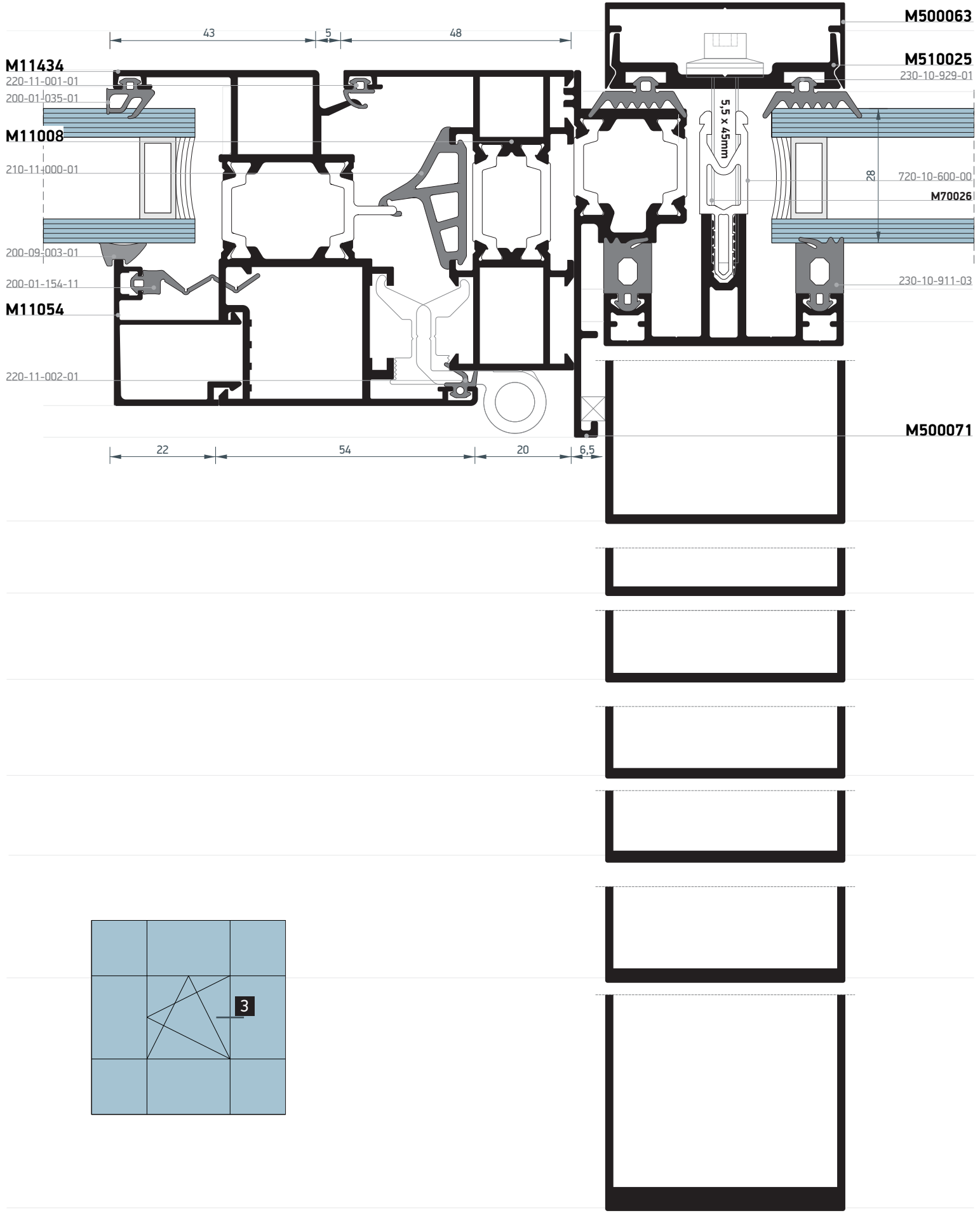
M70006

M70007

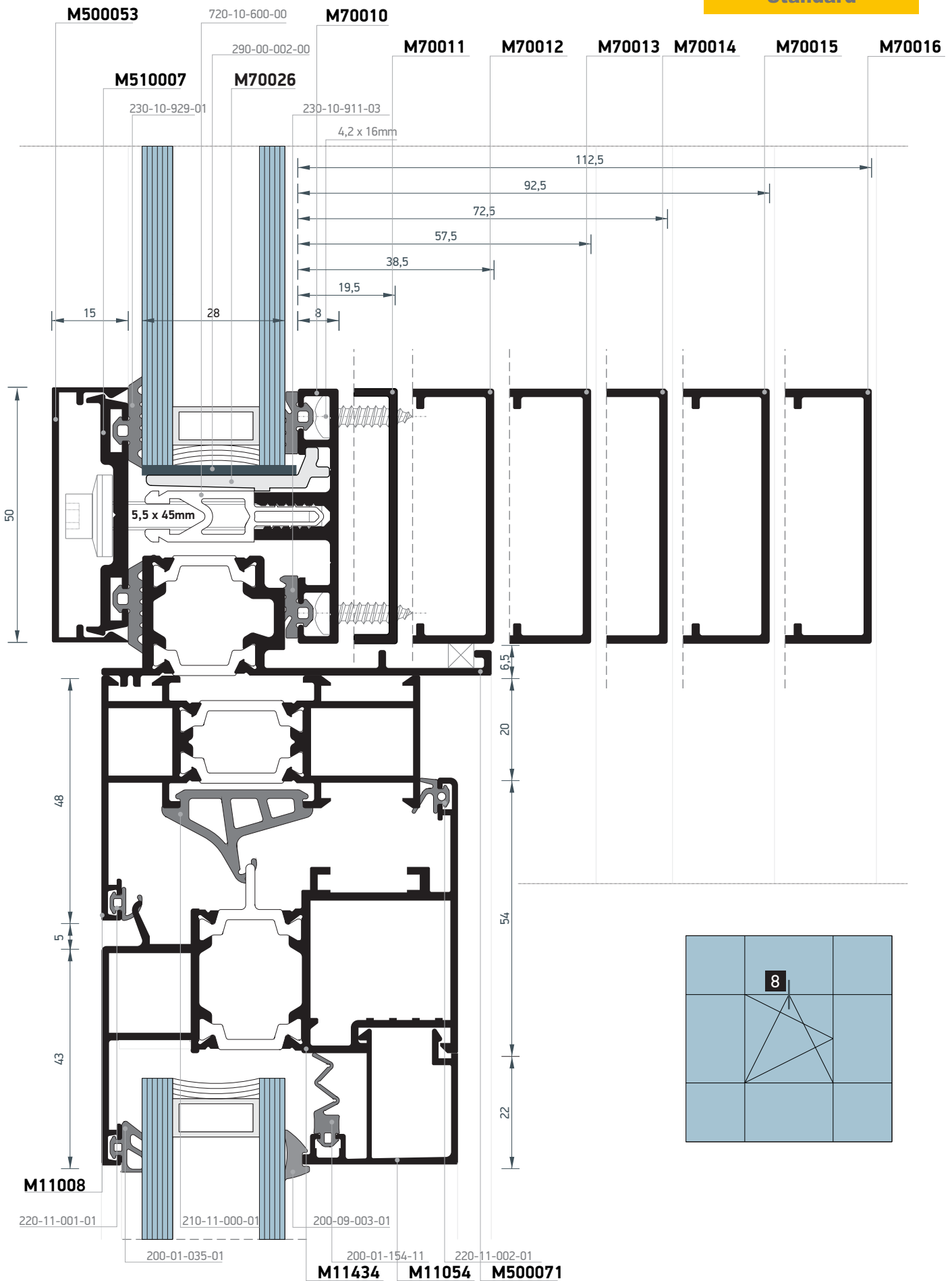
M70008





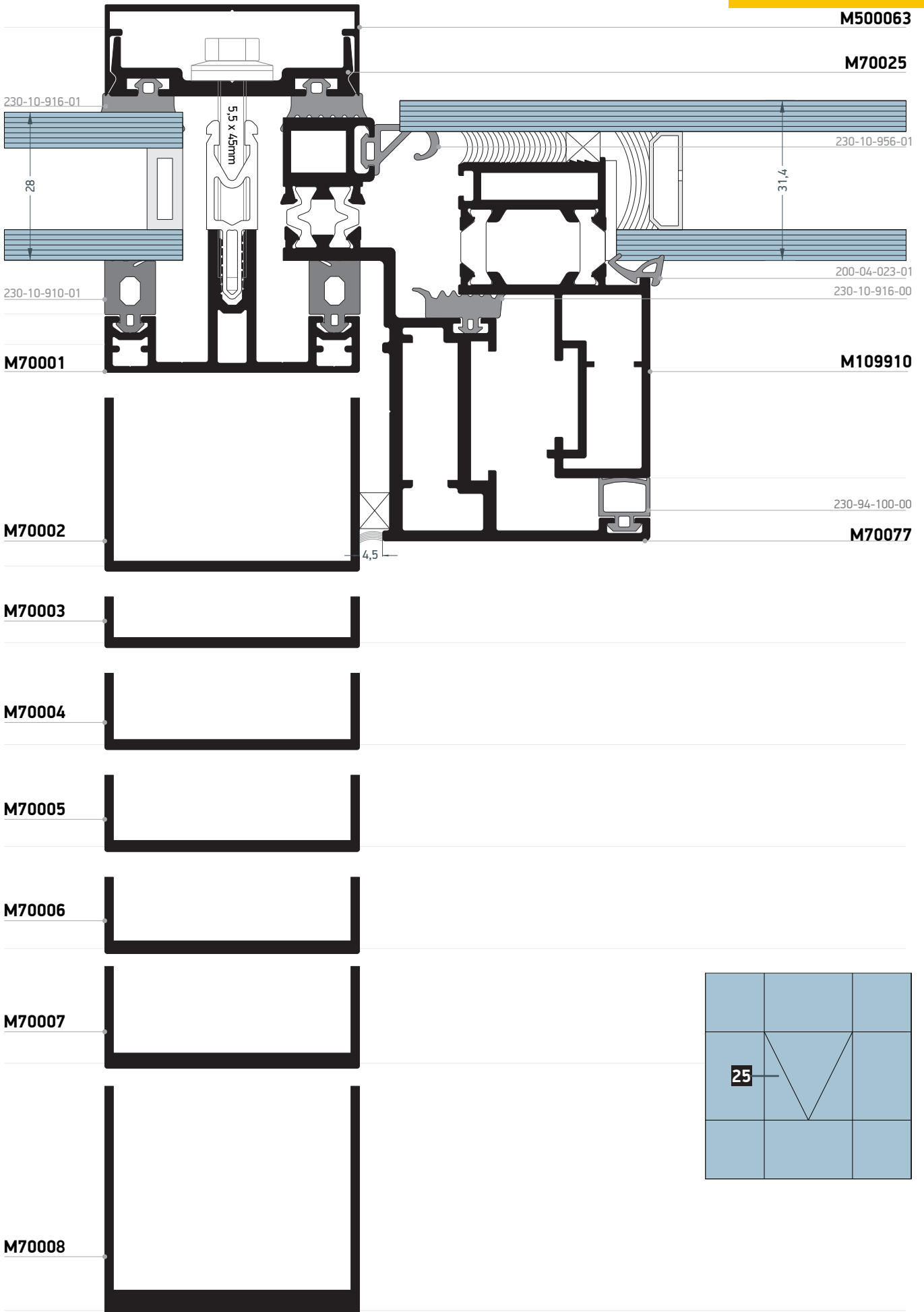


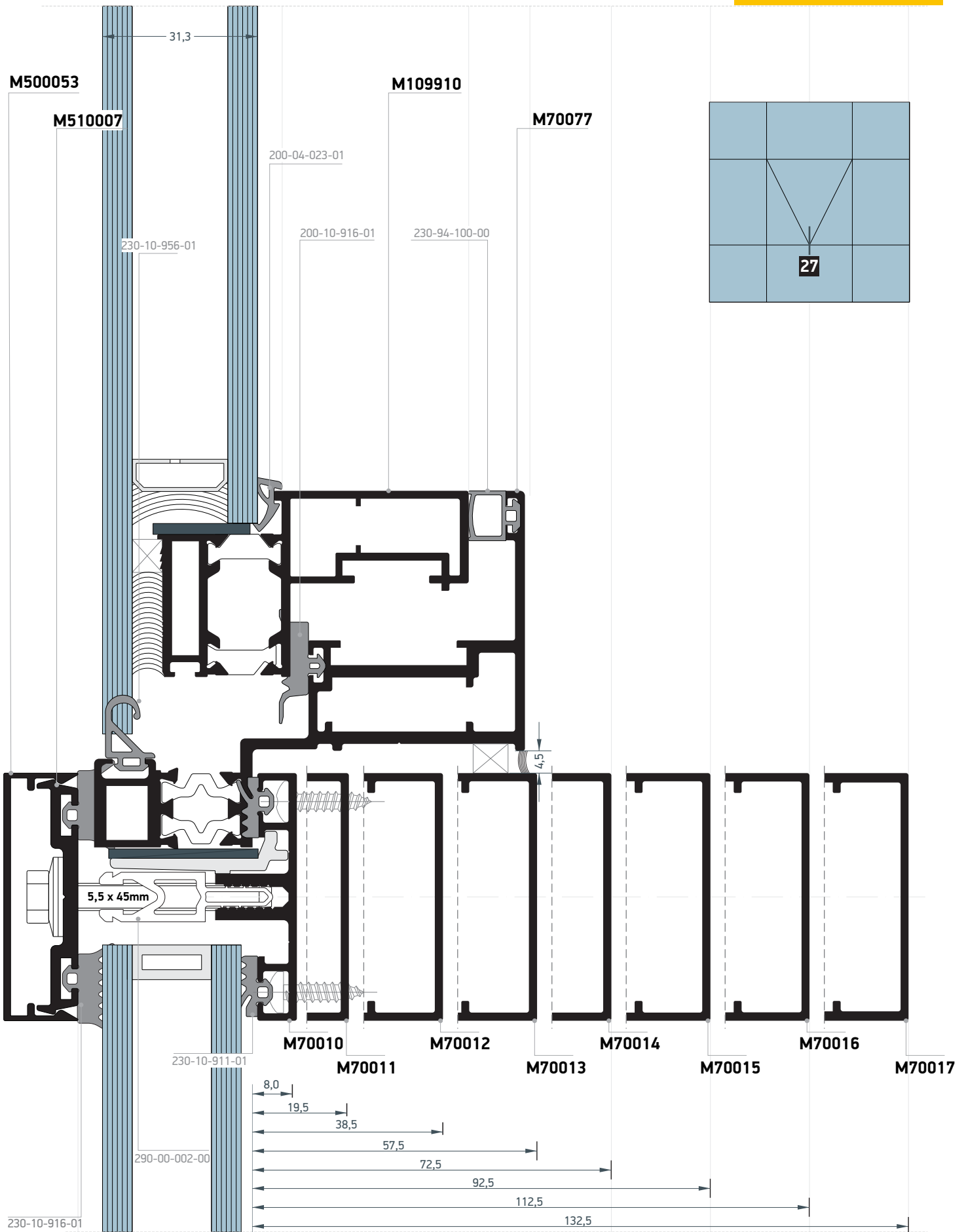
Τομές 1:1 | Section 1:1



M500063

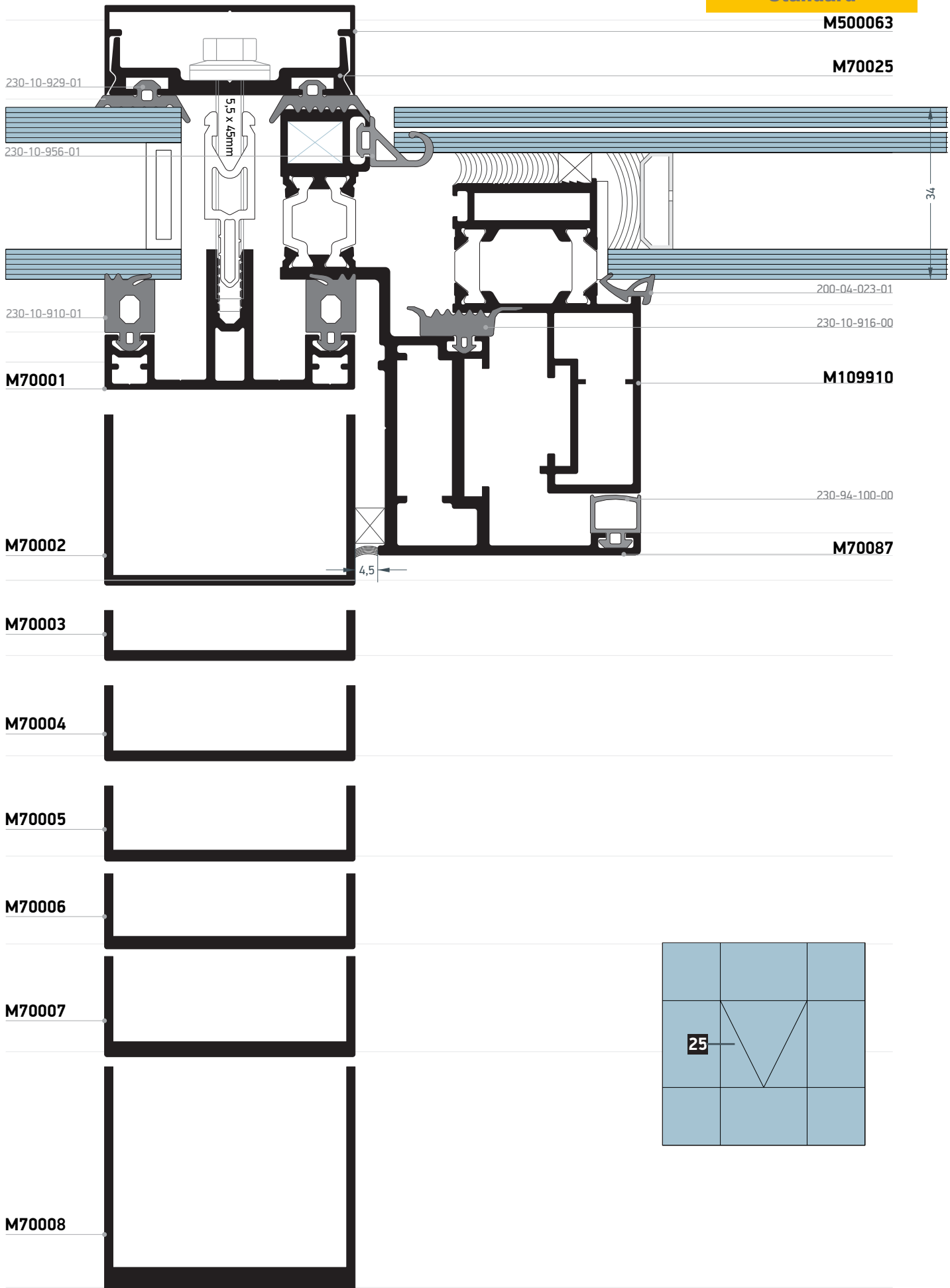
M70025



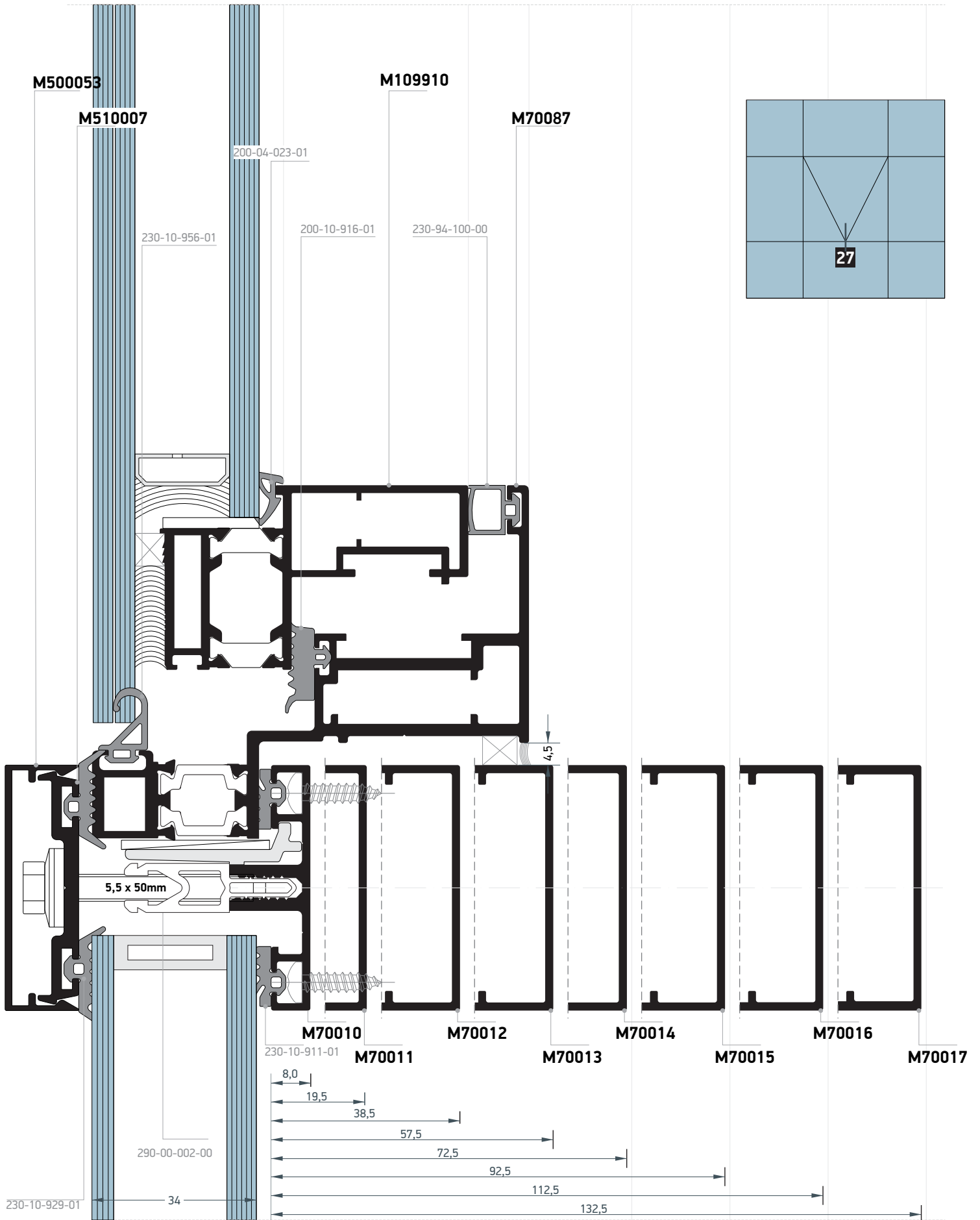


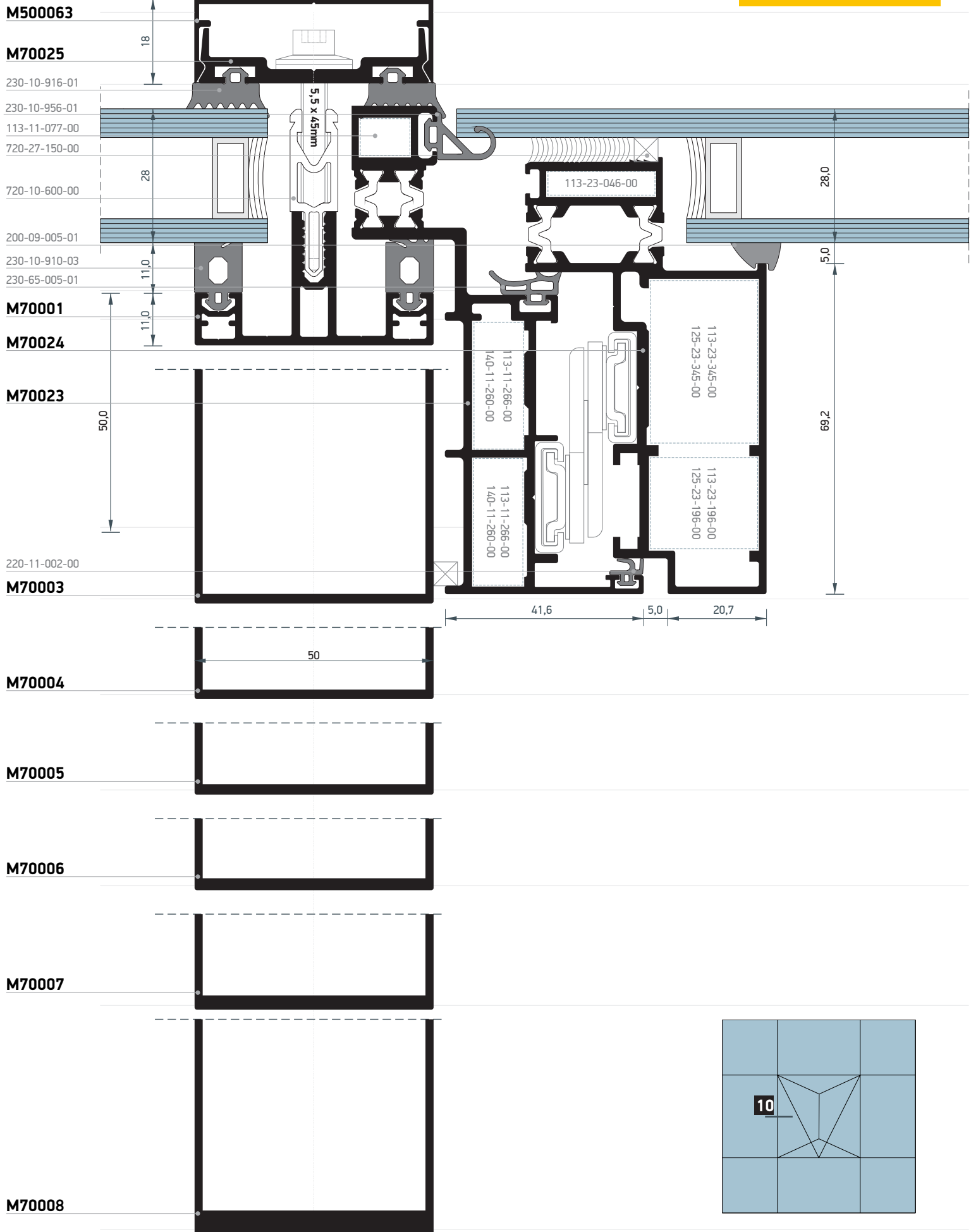
M500063

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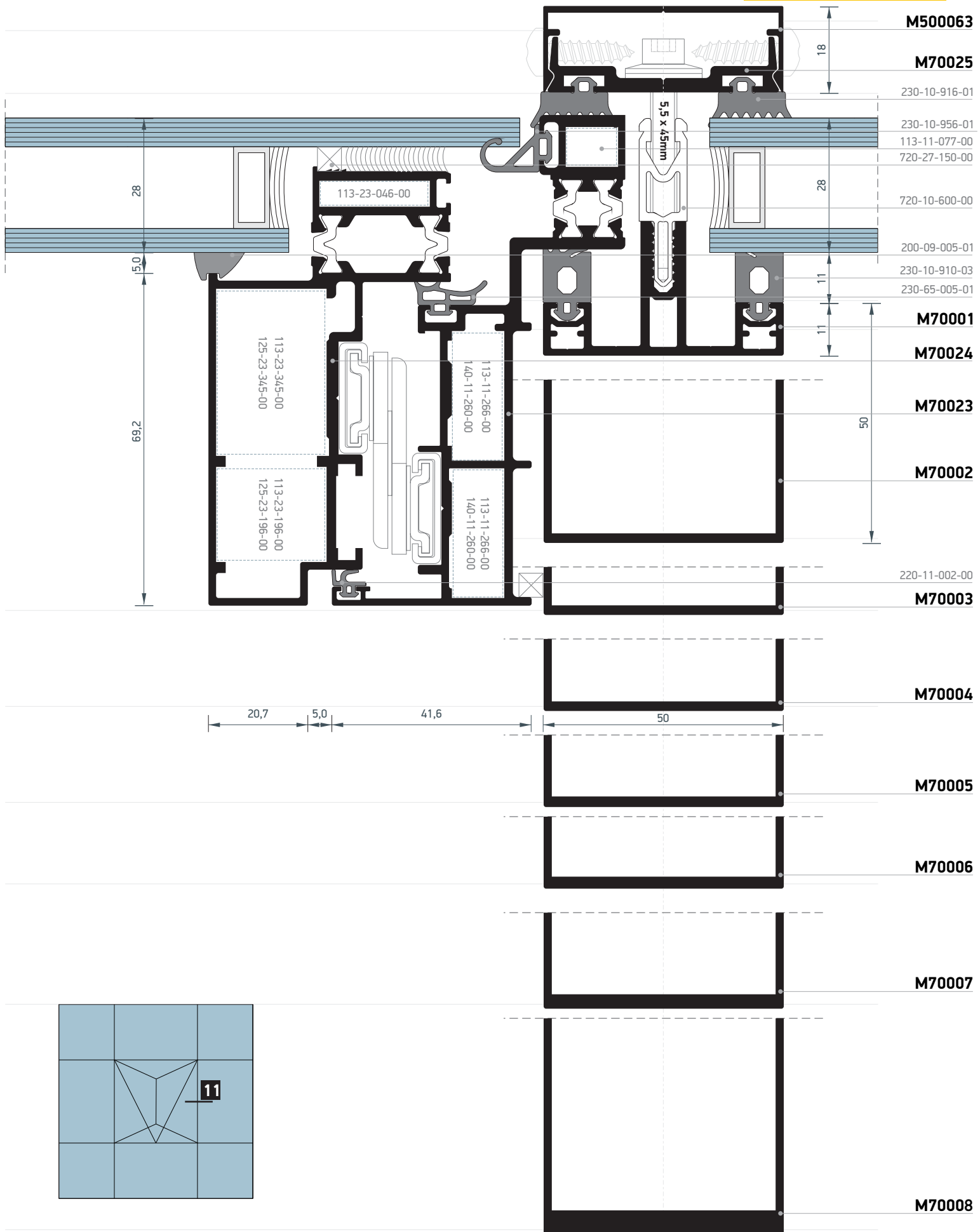


Τομές 1:1 | Section 1:1

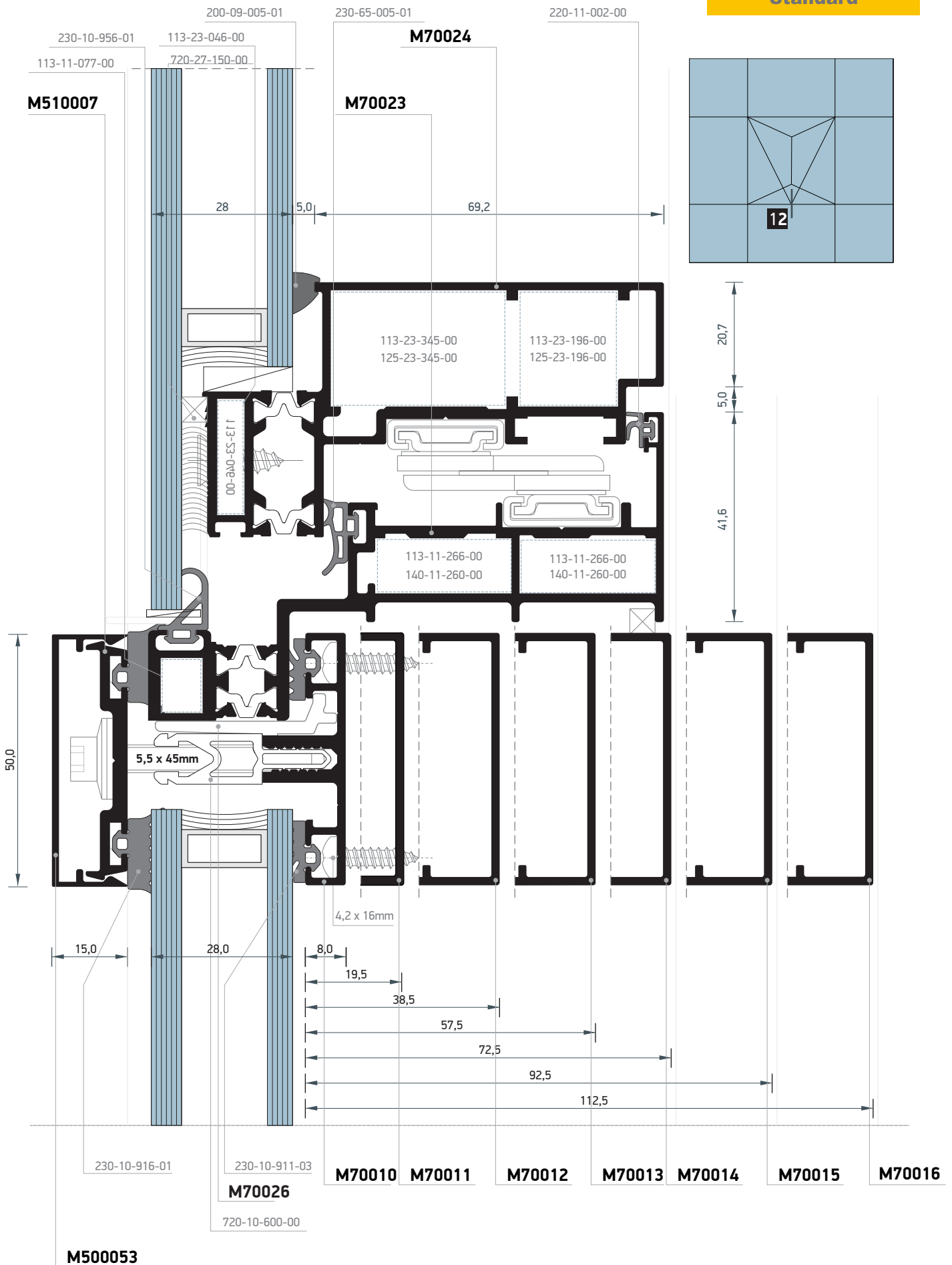


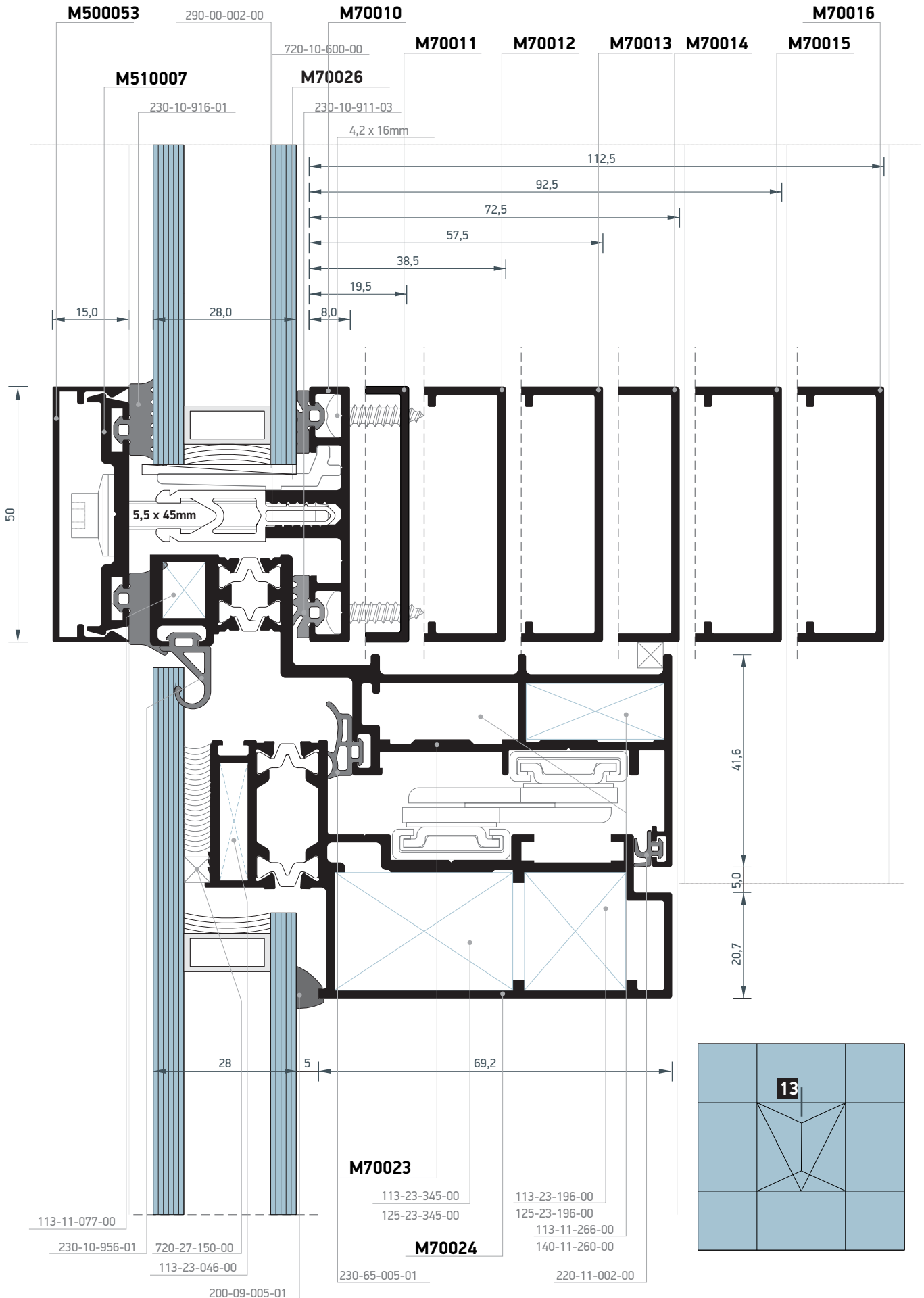


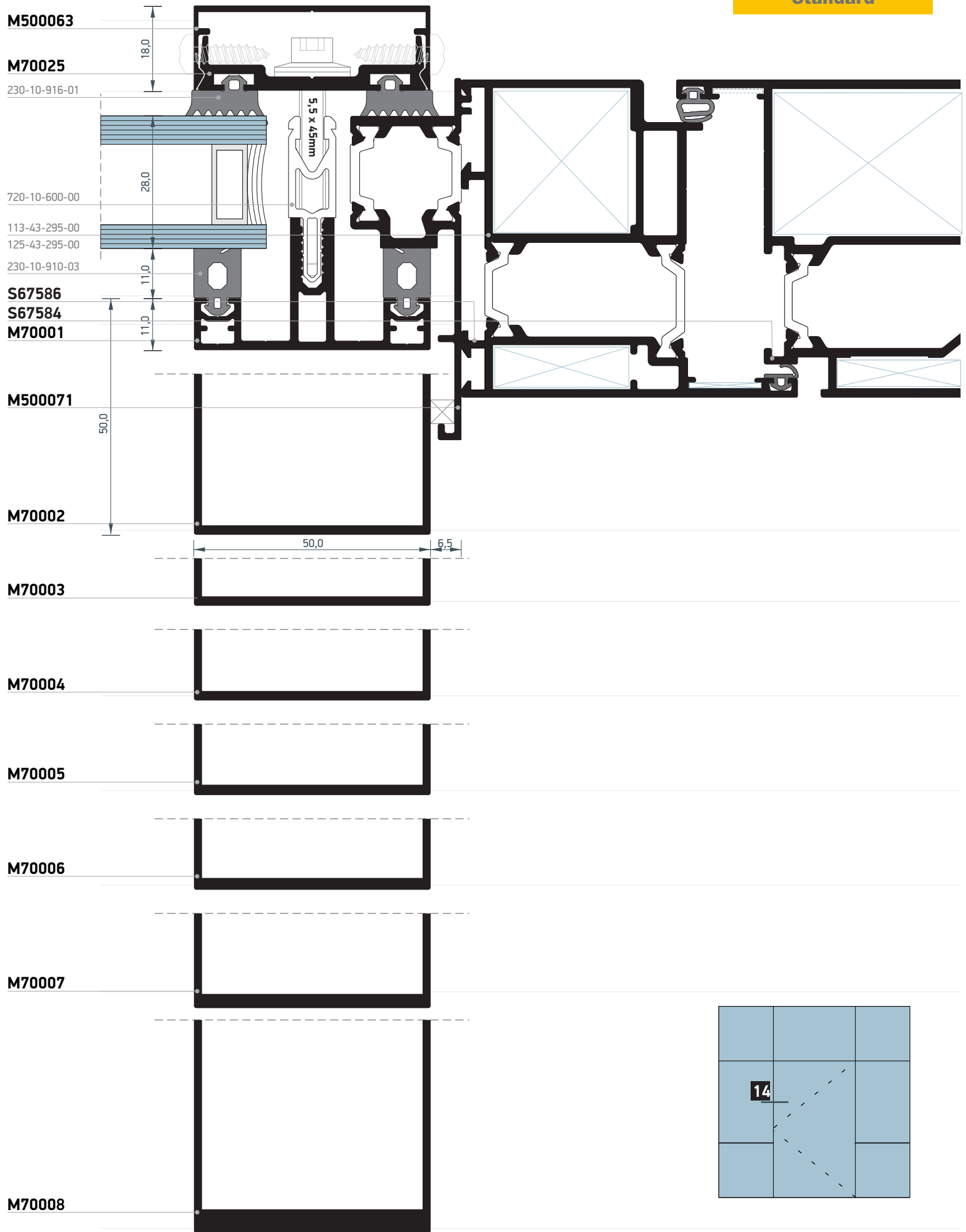
Standard



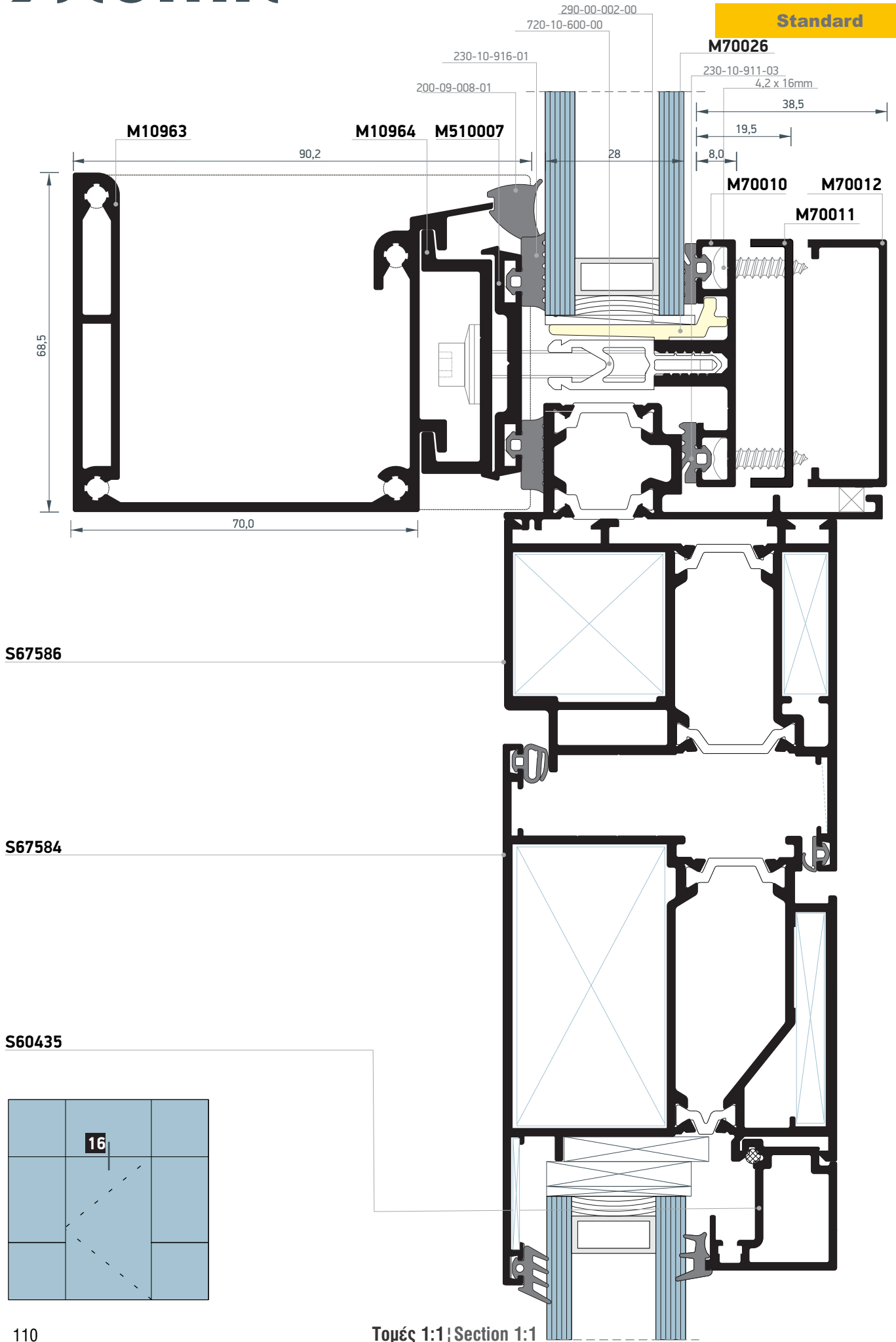
Τομές 1:1 | Section 1:1

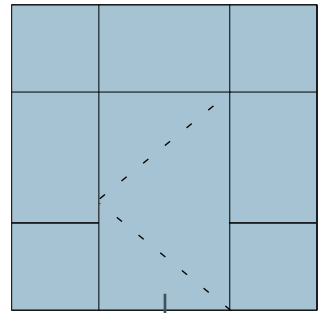




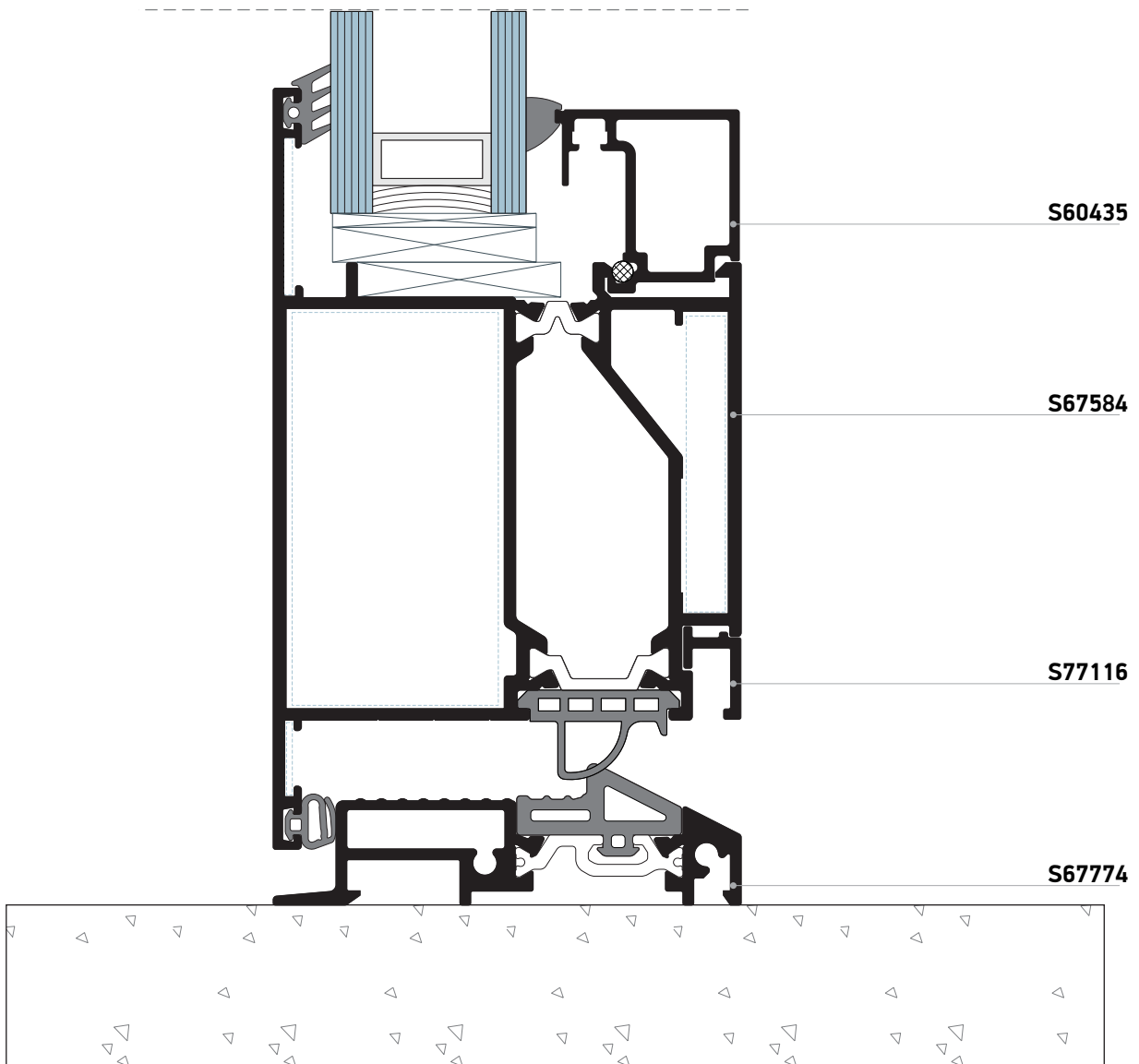


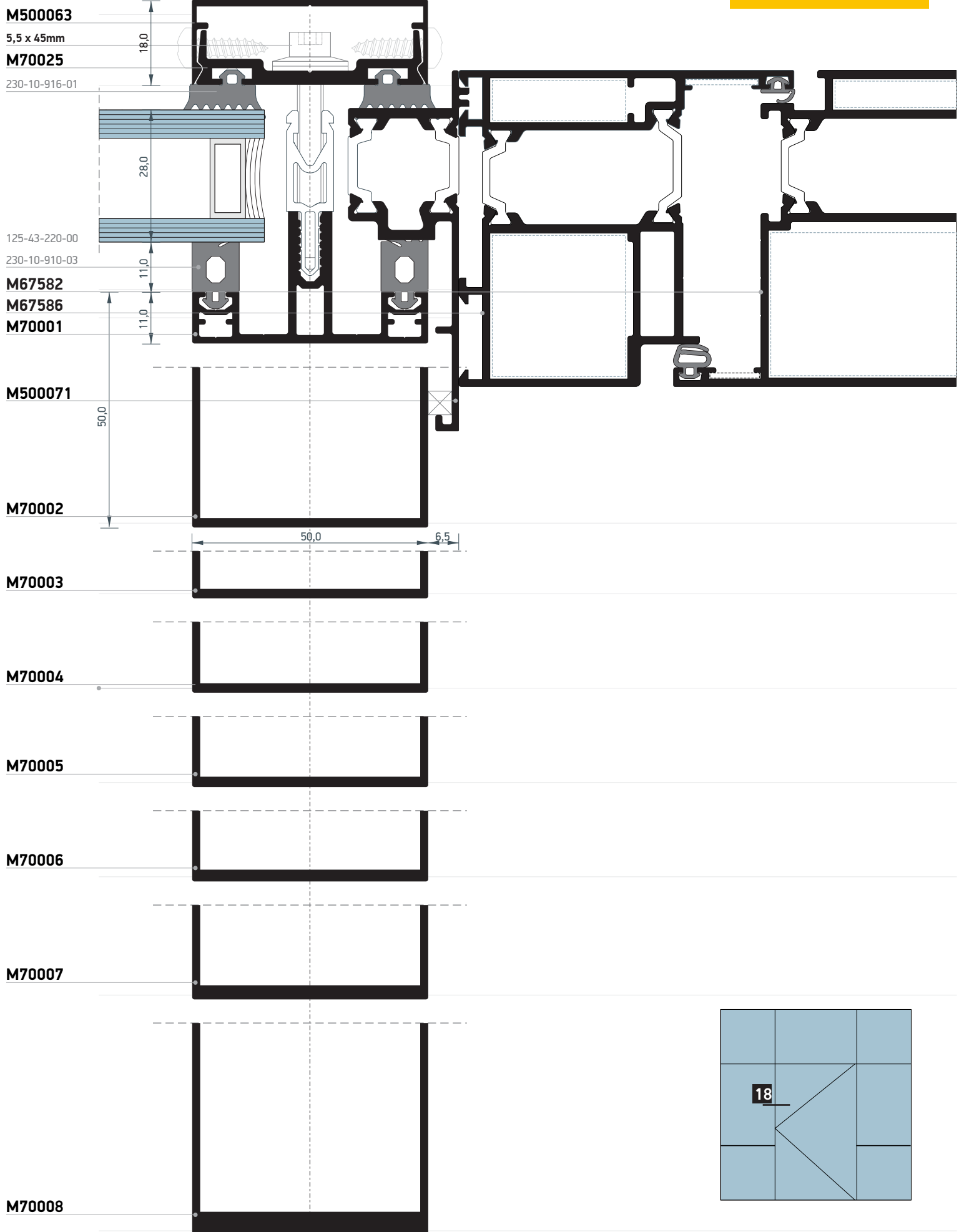




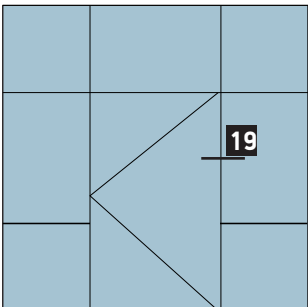
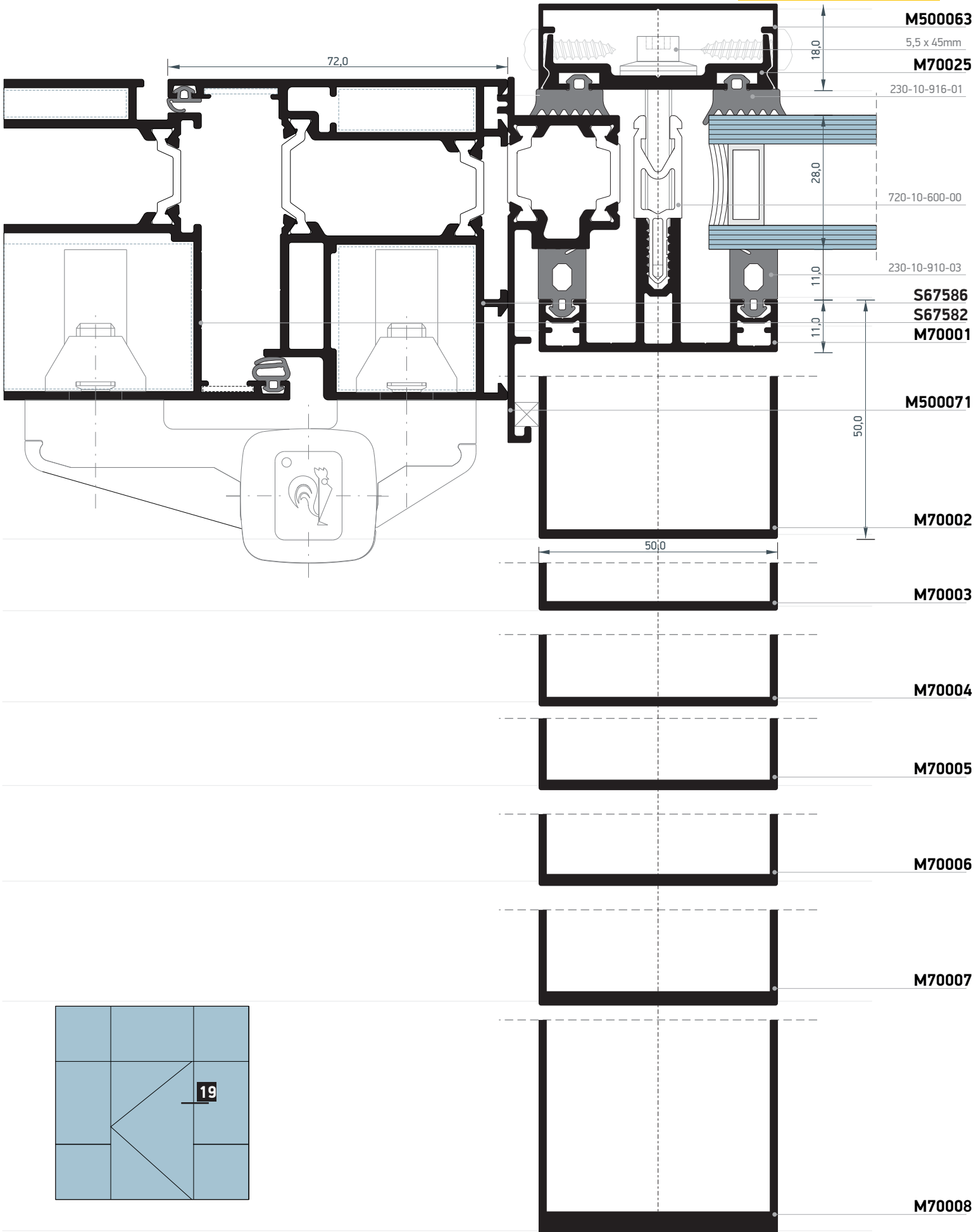


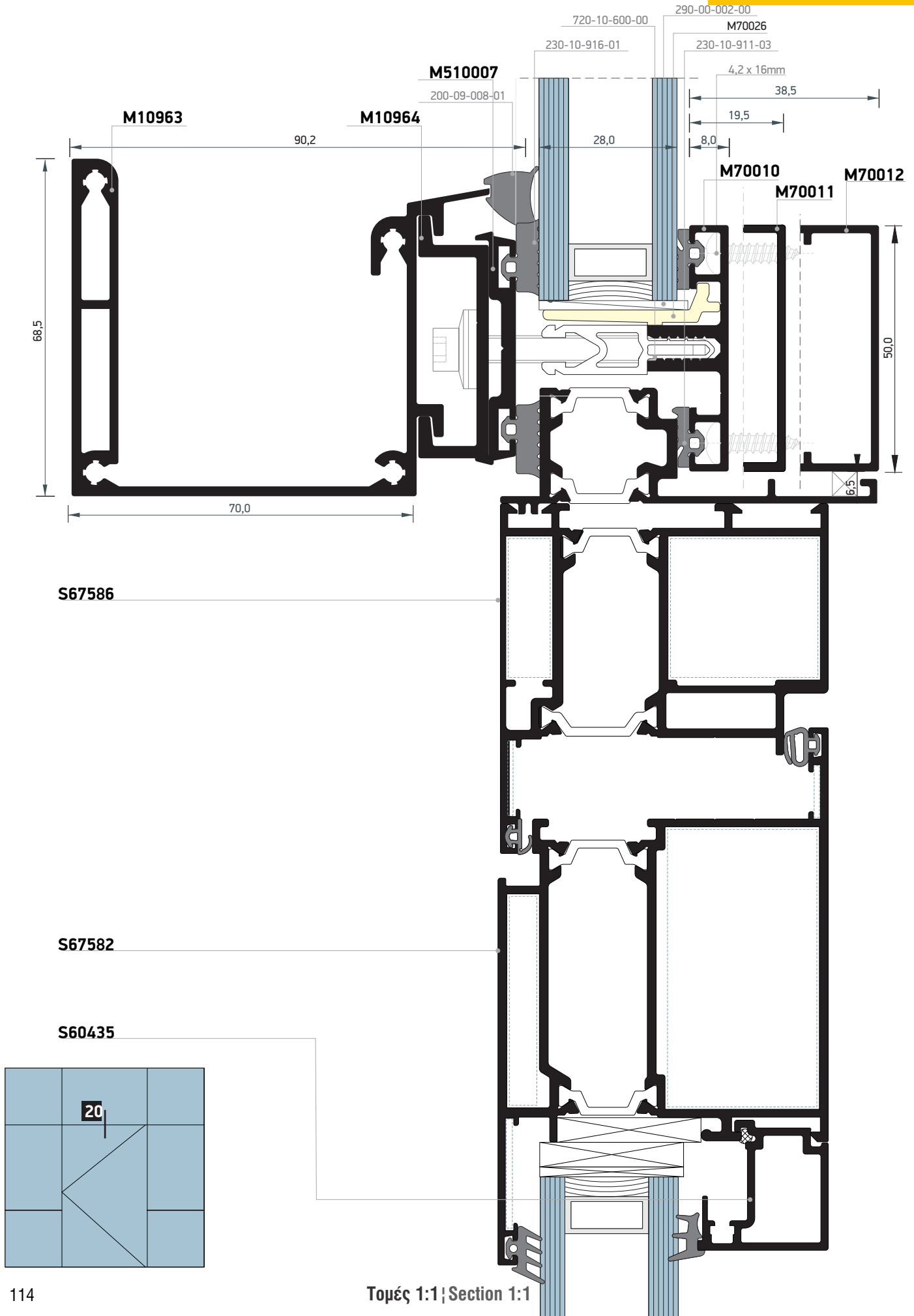
17

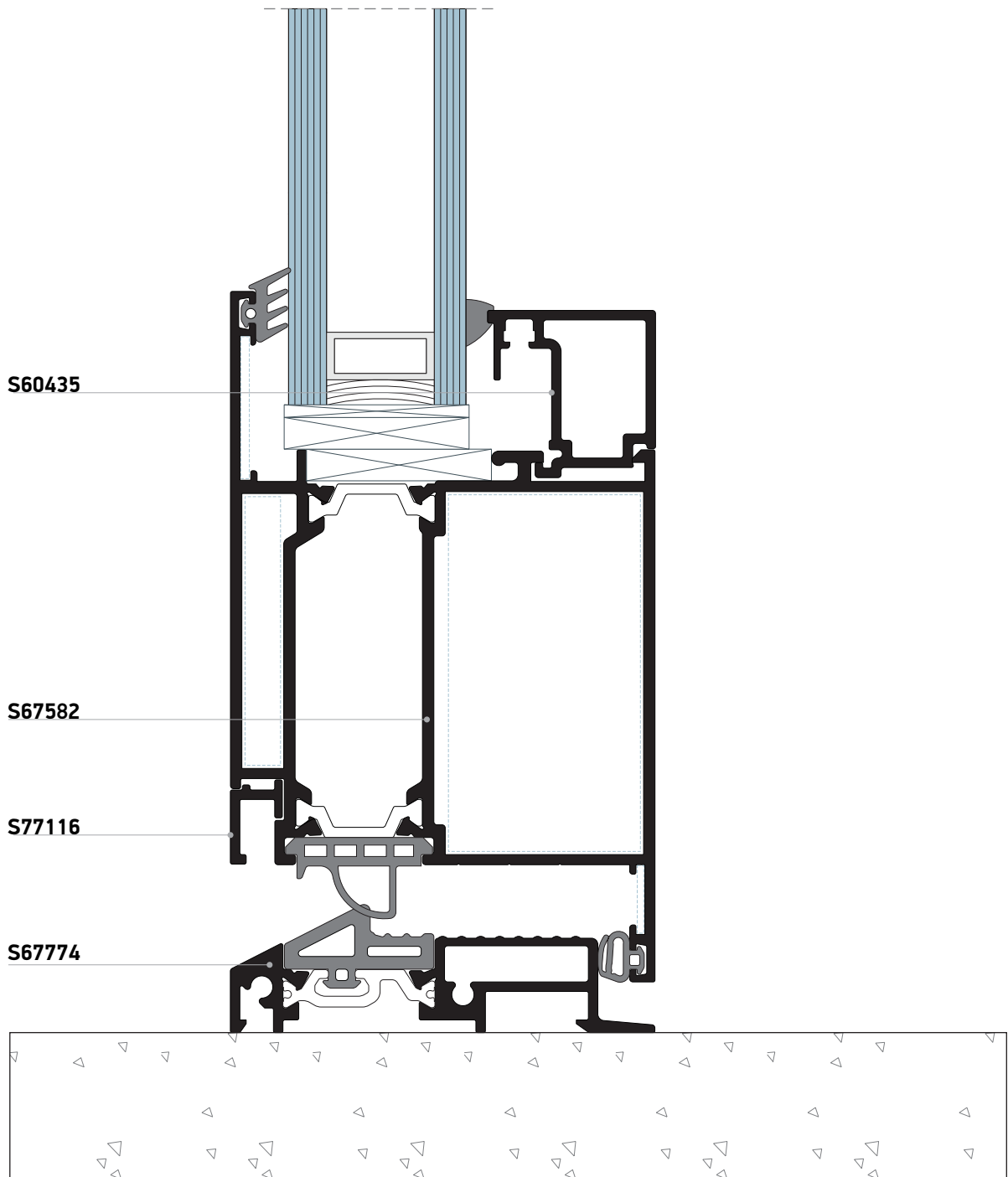
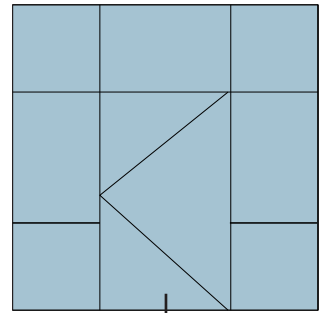


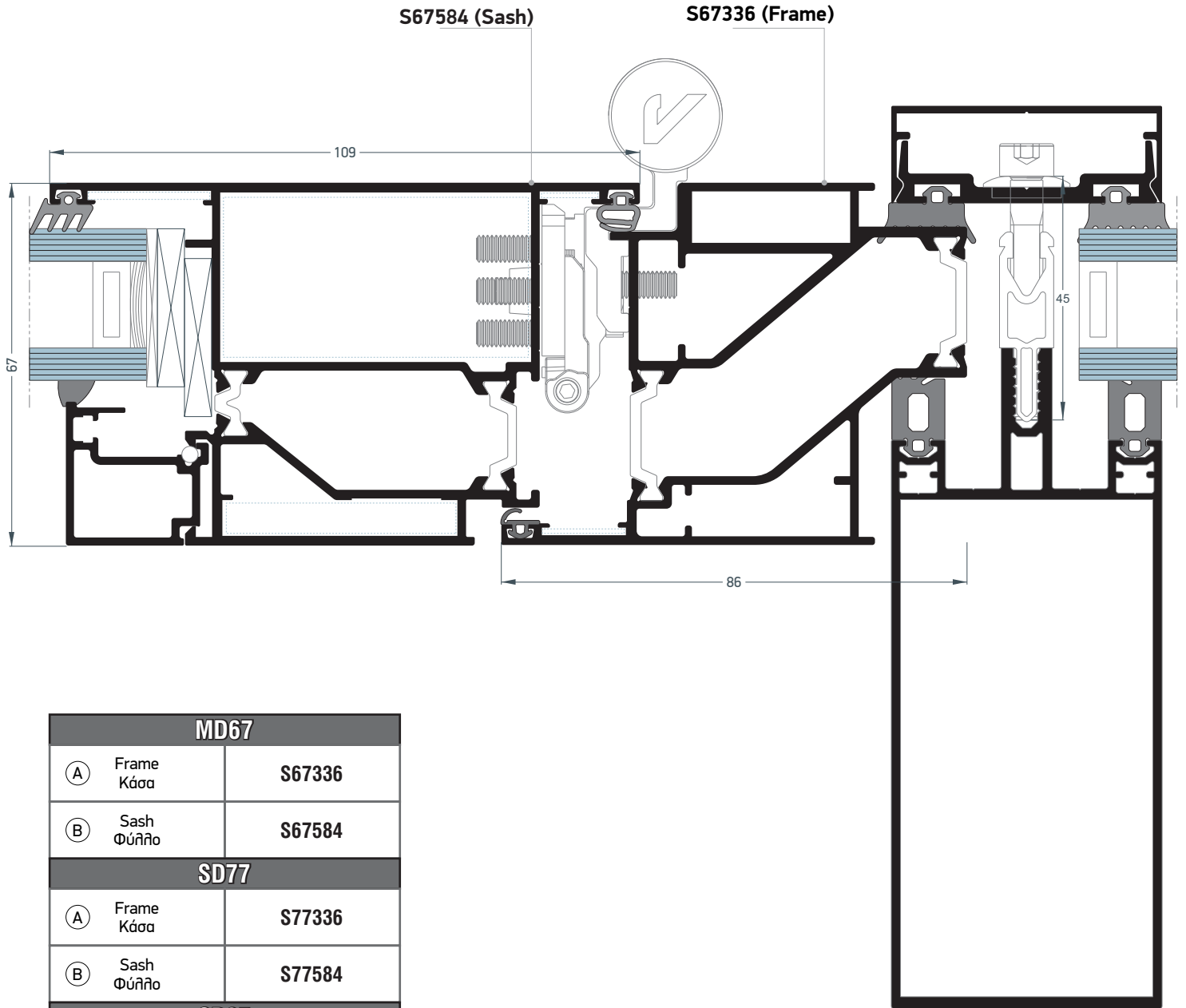


Standard

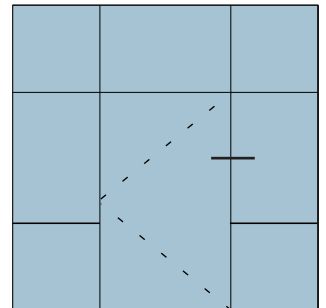


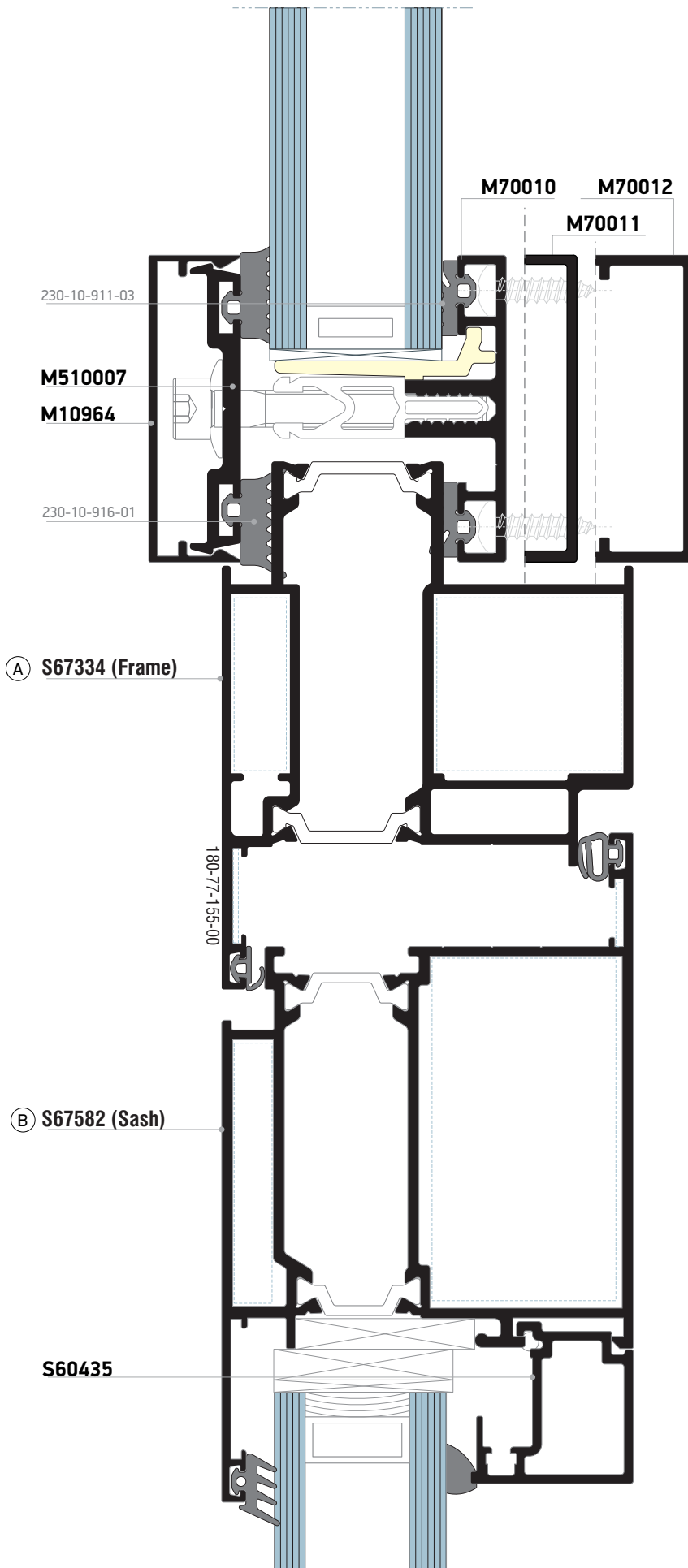




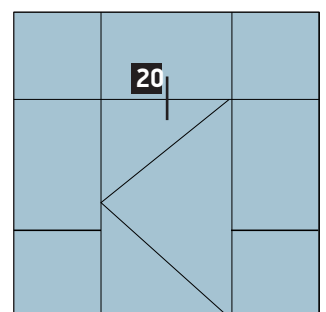


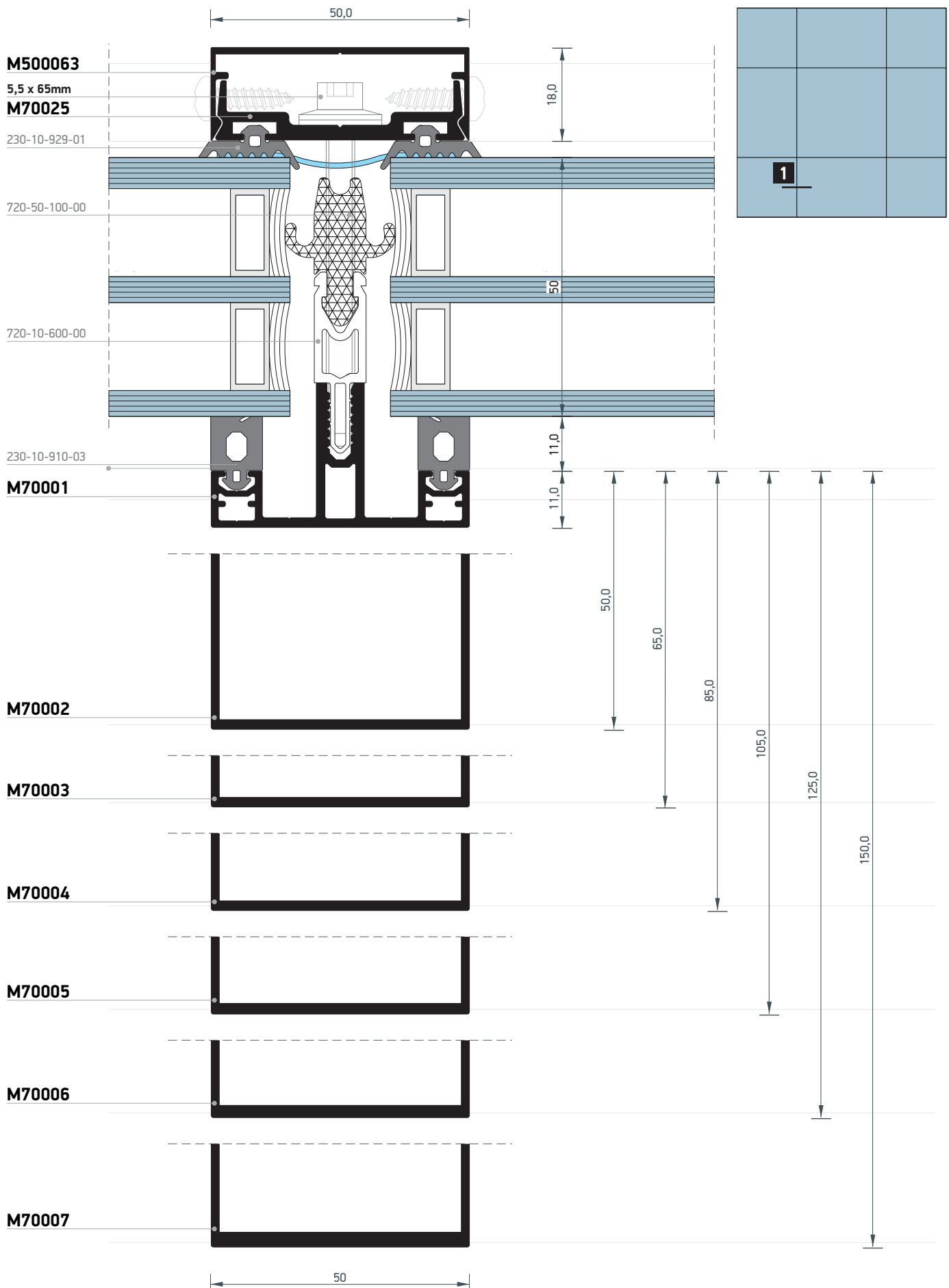
MD67	
(A) Frame Κάσα	S67336
(B) Sash Φύλλο	S67584
SD77	
(A) Frame Κάσα	S77336
(B) Sash Φύλλο	S77584
SD95	
(A) Frame Κάσα	S95776
(B) Sash Φύλλο	S95006

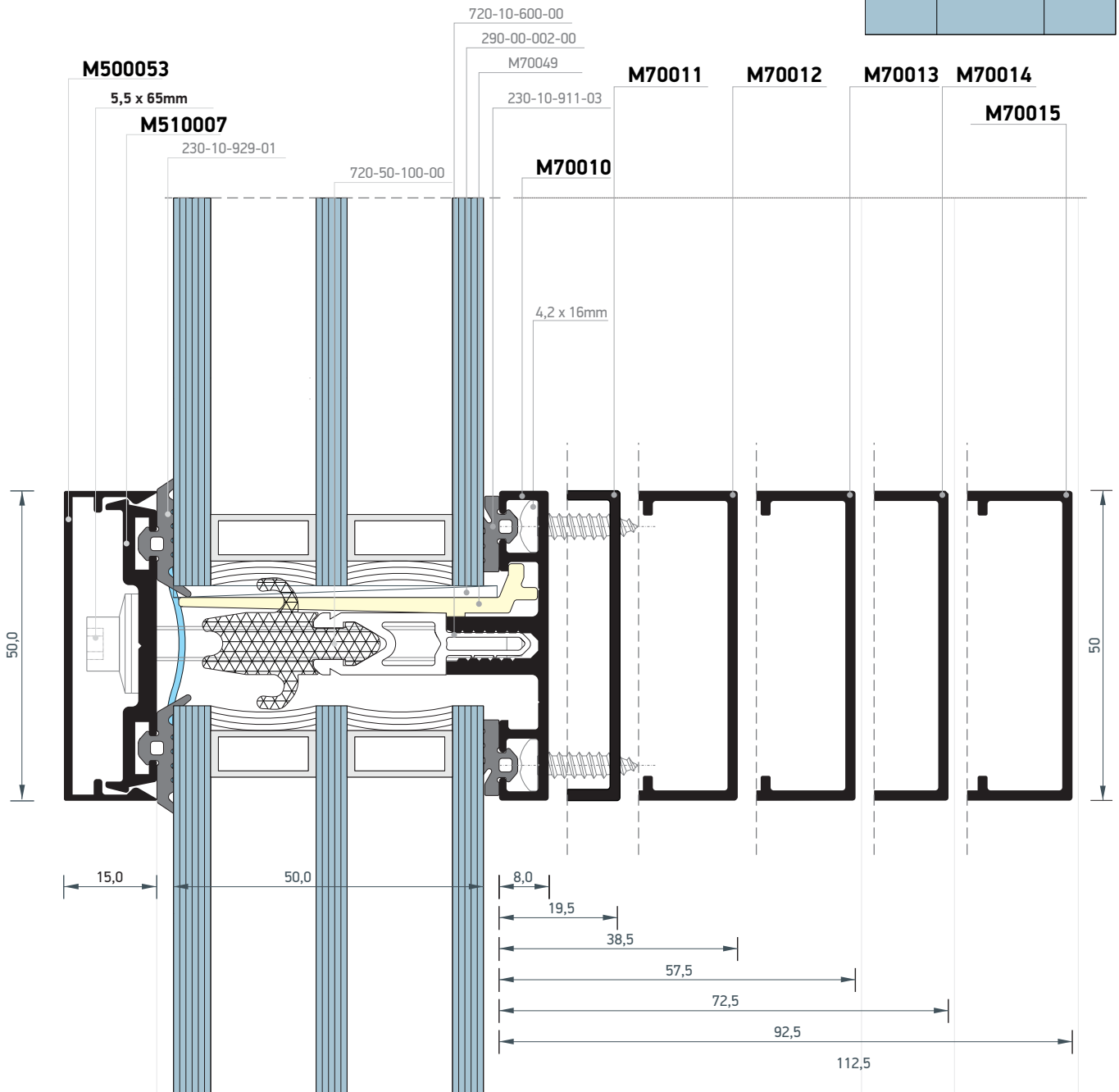
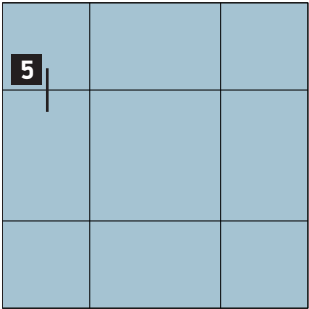


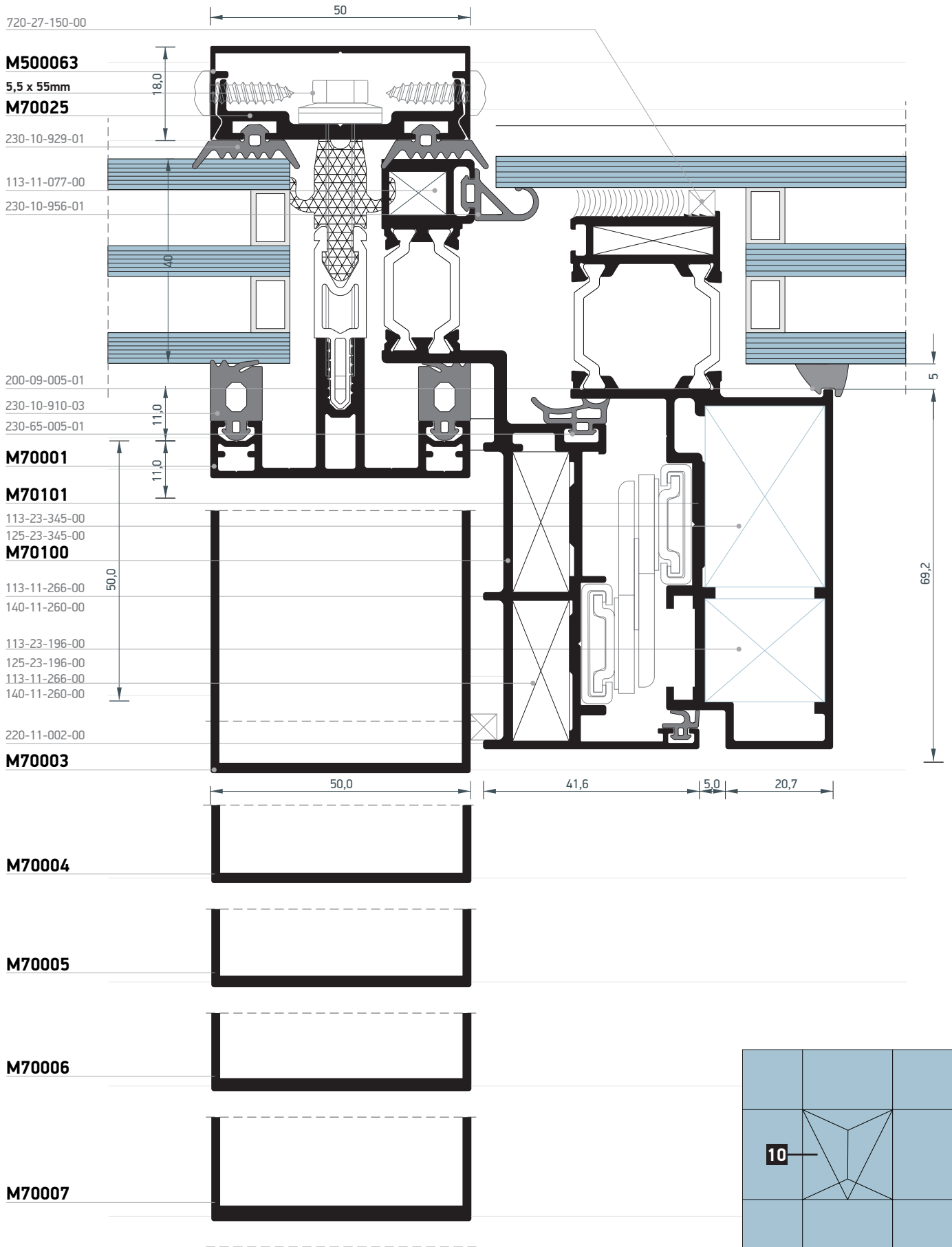


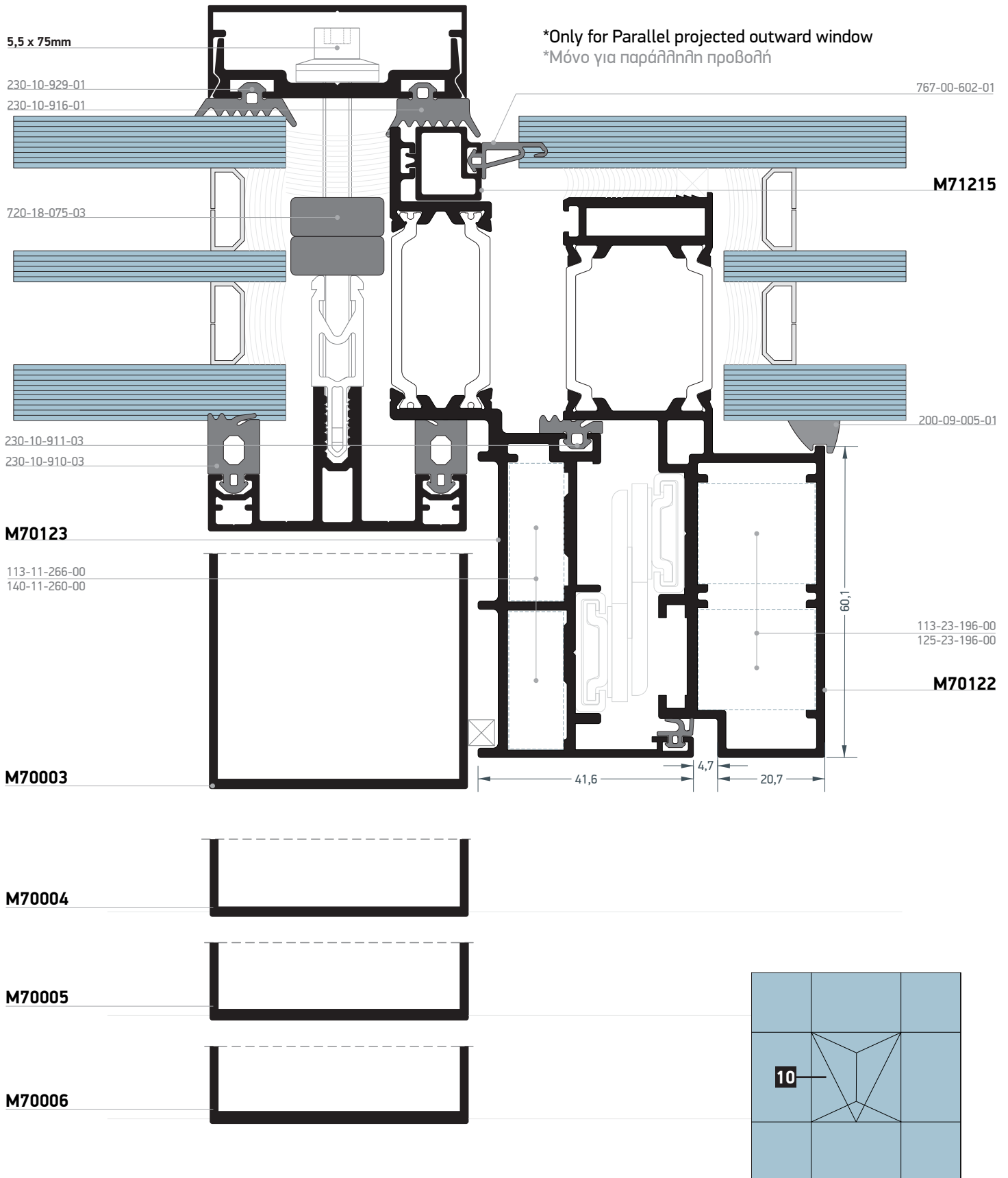
MD67	
(A) Frame Κάσα	S67334
(B) Sash Φύλλο	S67582
SD77	
(A) Frame Κάσα	S77334
(B) Sash Φύλλο	S77582
SD95	
(A) Frame Κάσα	S95778
(B) Sash Φύλλο	S95004

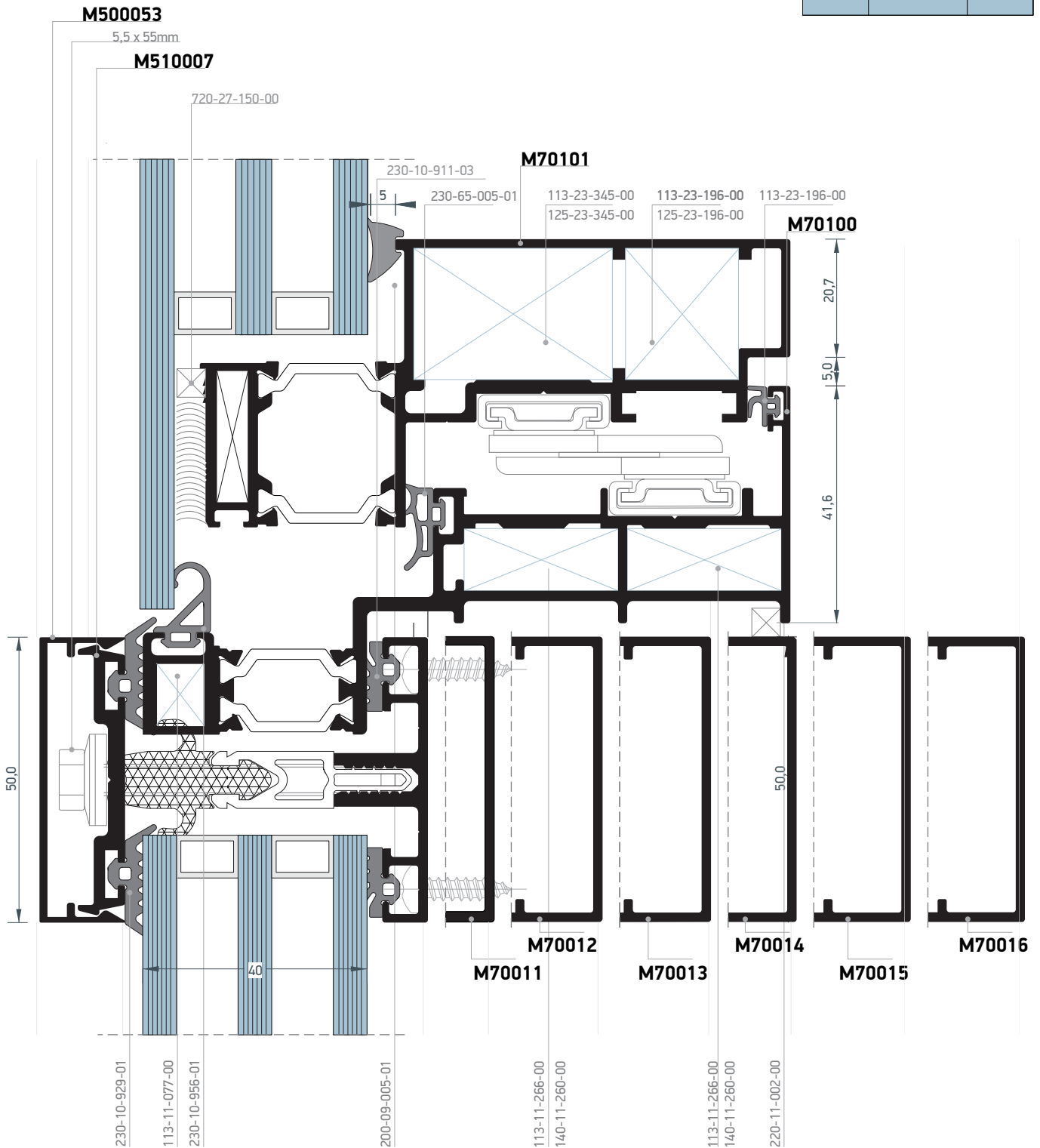
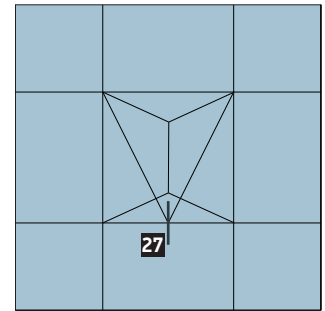


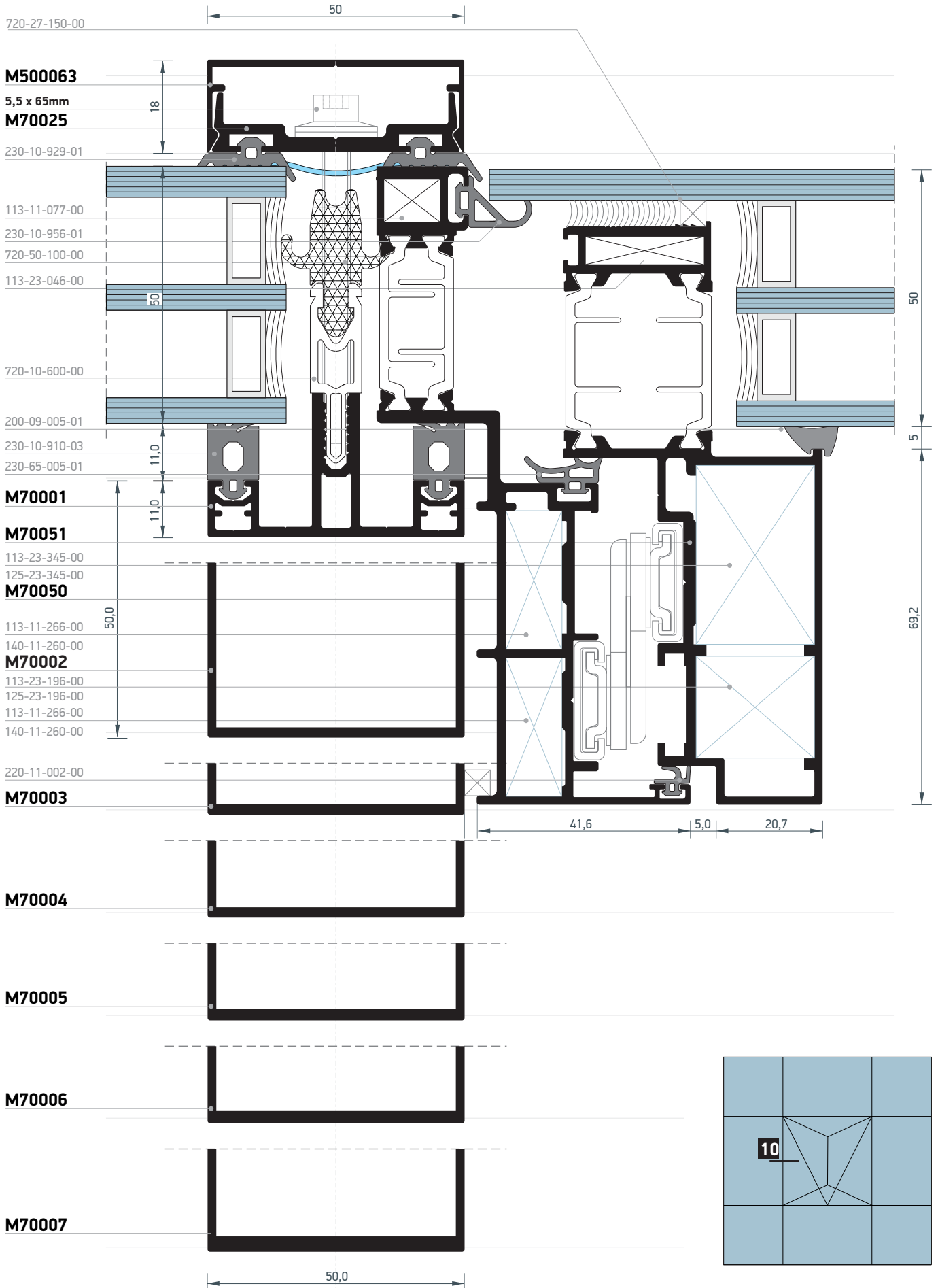


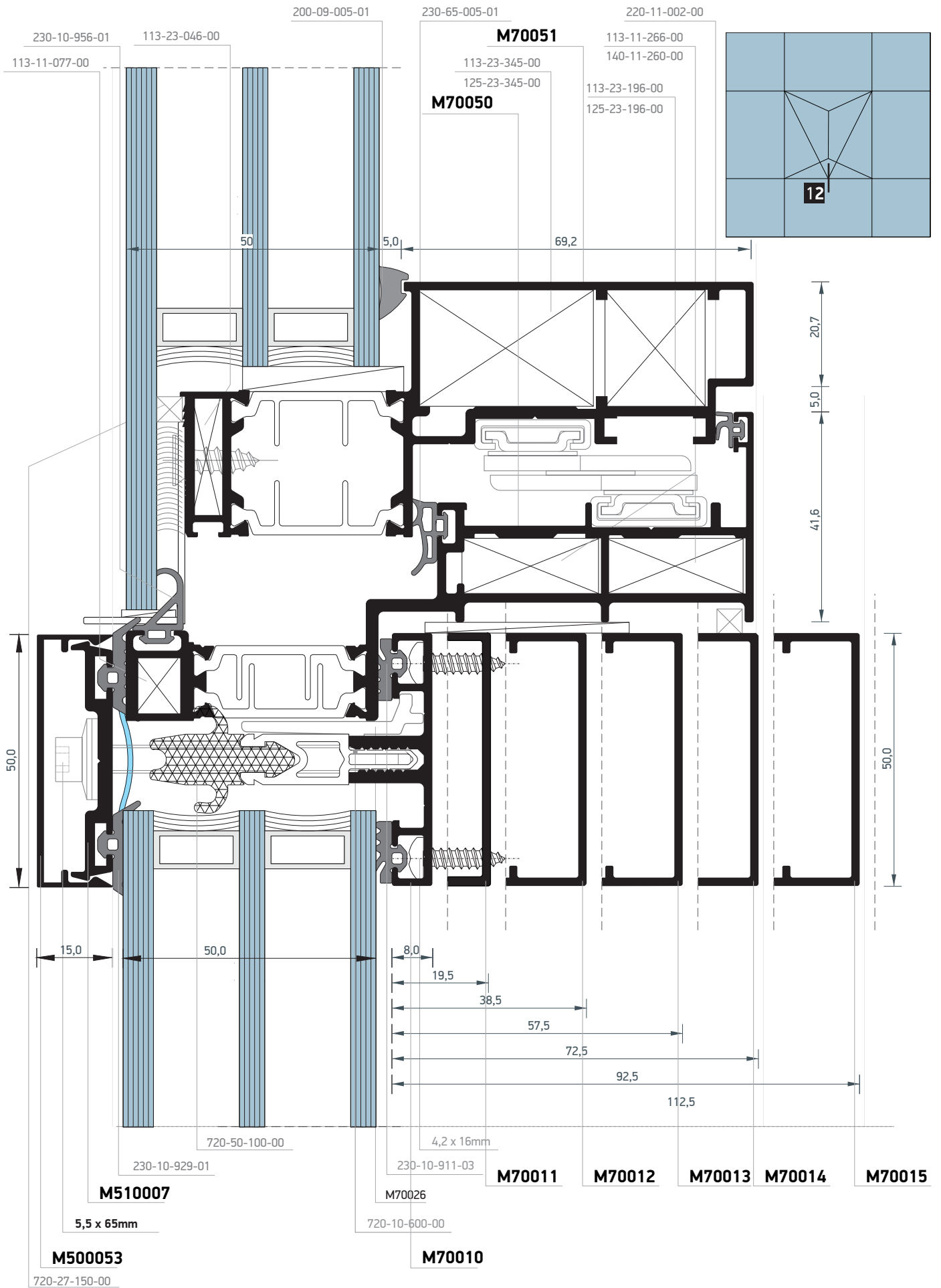


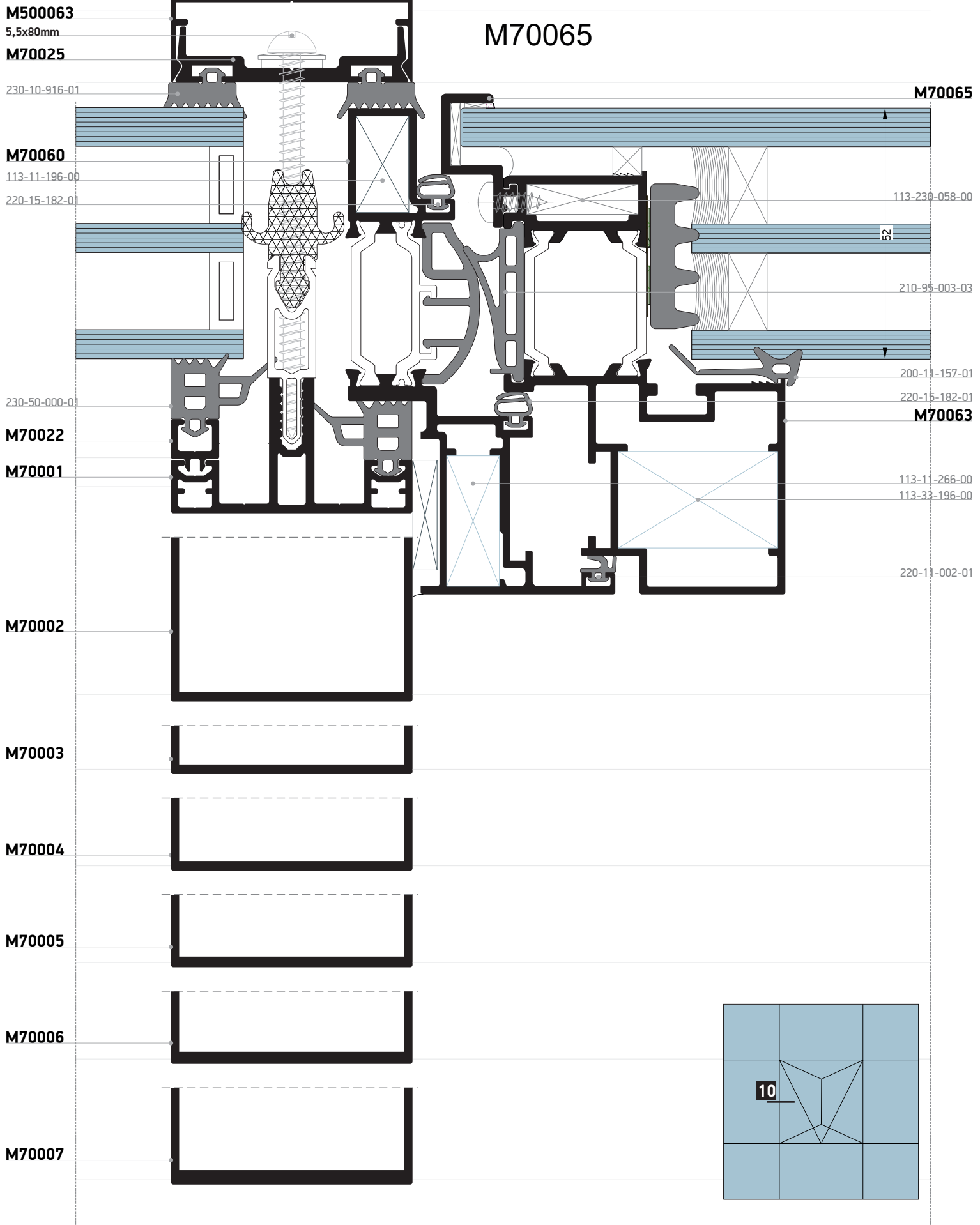


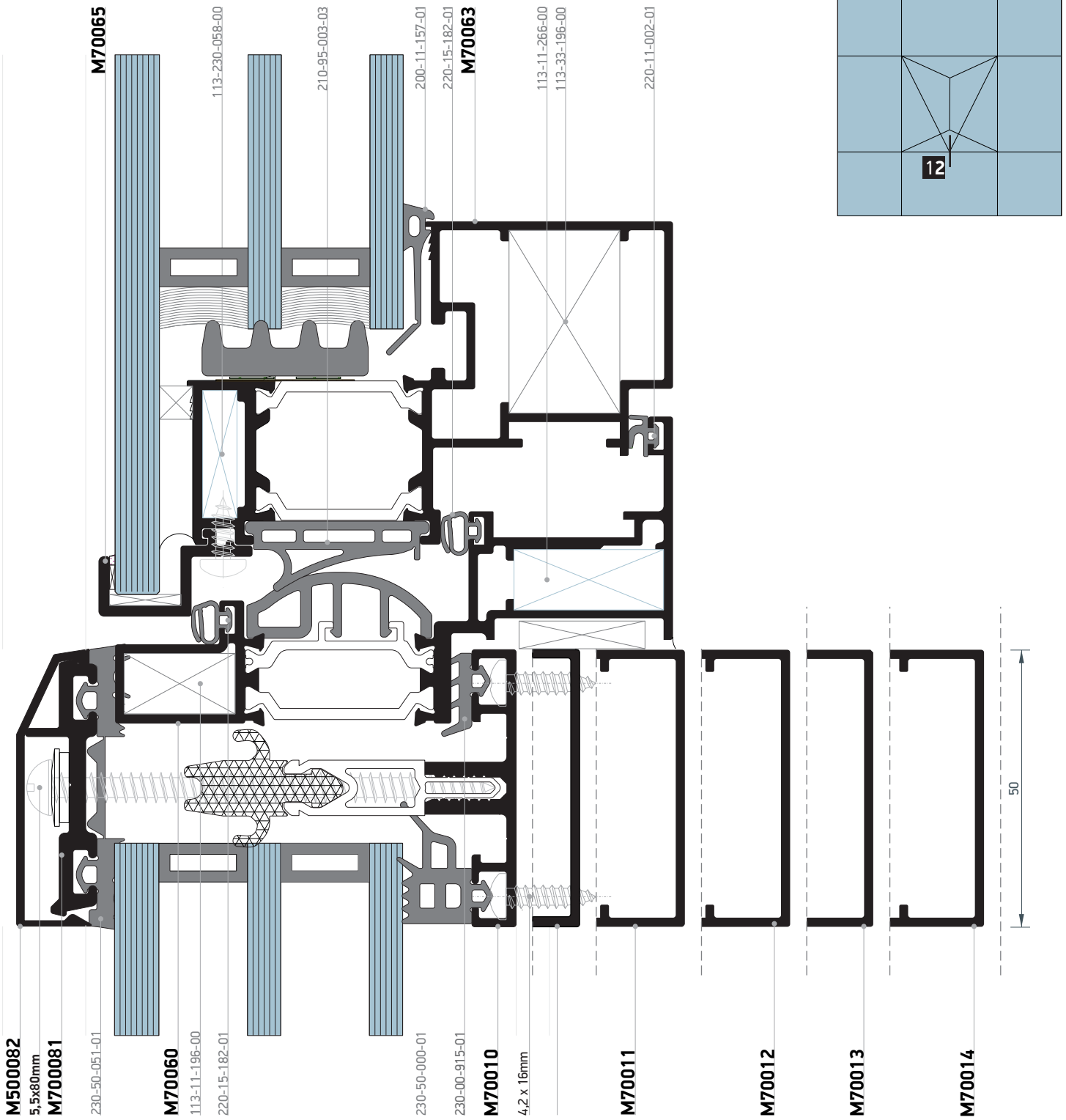


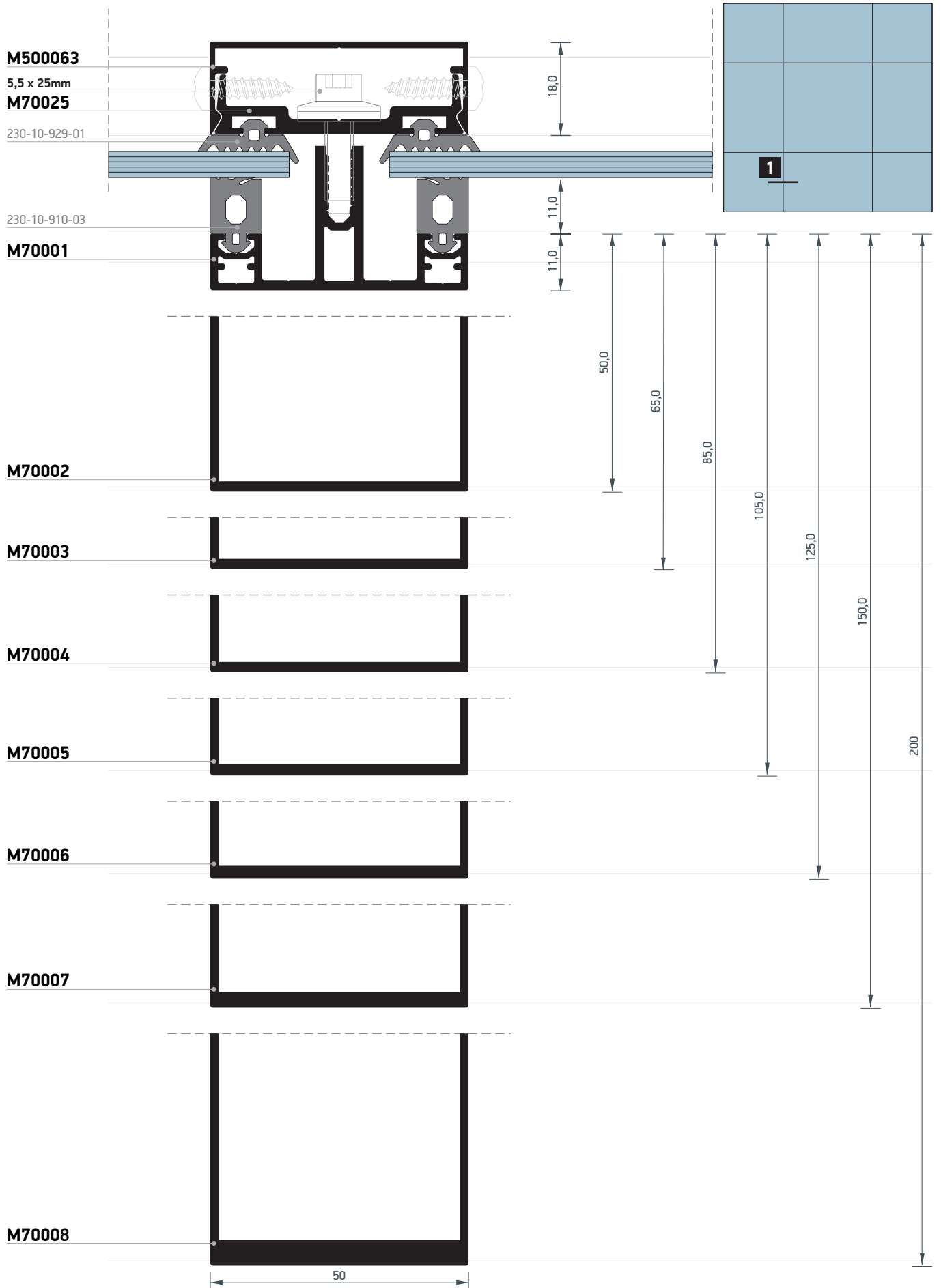


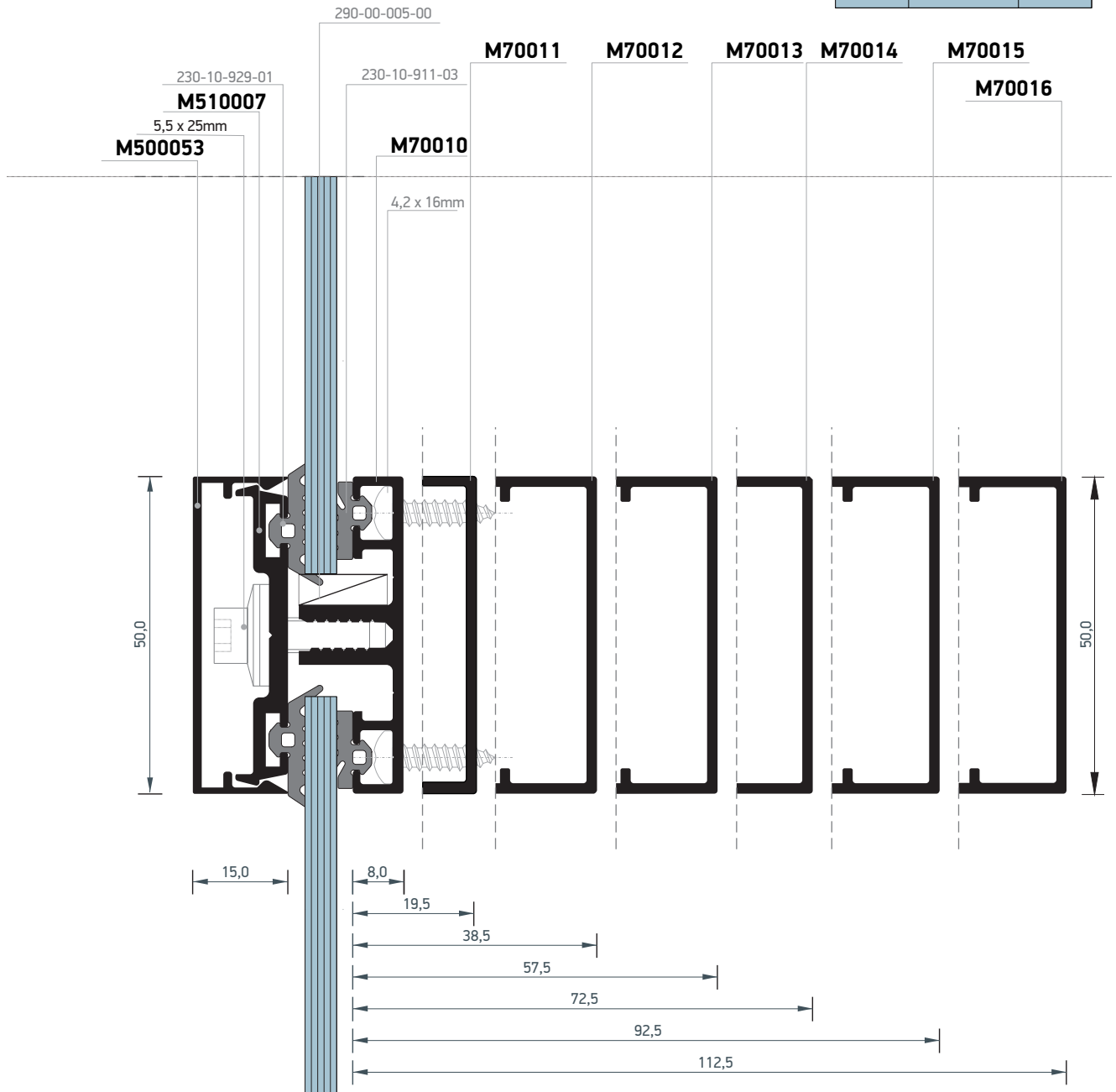
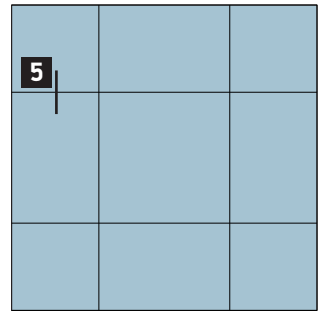












M500063

5,5 x 25mm

M70025

230-10-929-01

20x5mm

200-09-006-01

720-27-150-00

230-10-910-03

230-94-200-01

230-65-005-01

113-11-266-00

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M9984

M10982

230-99-590-01

M70002

M70003

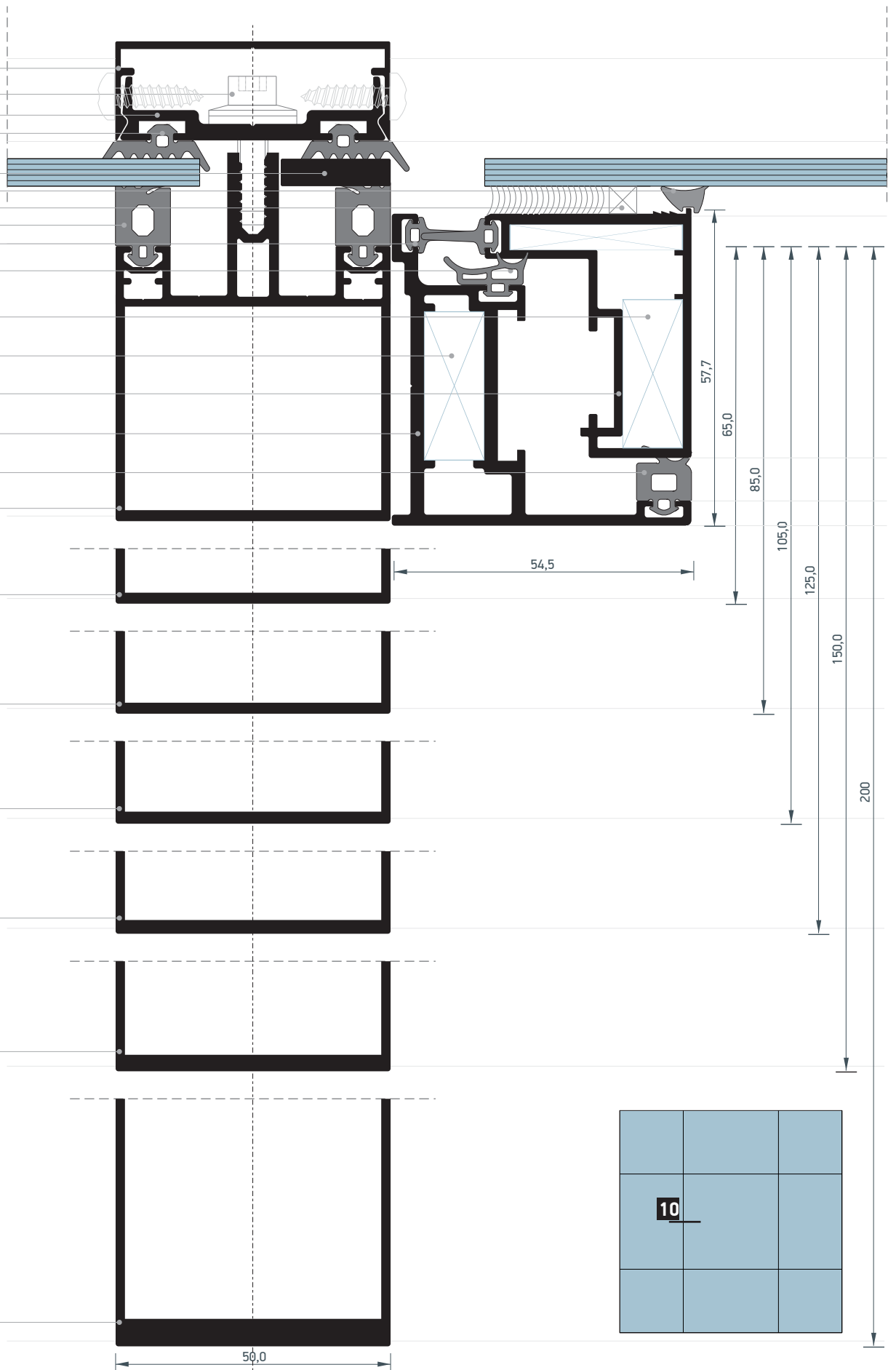
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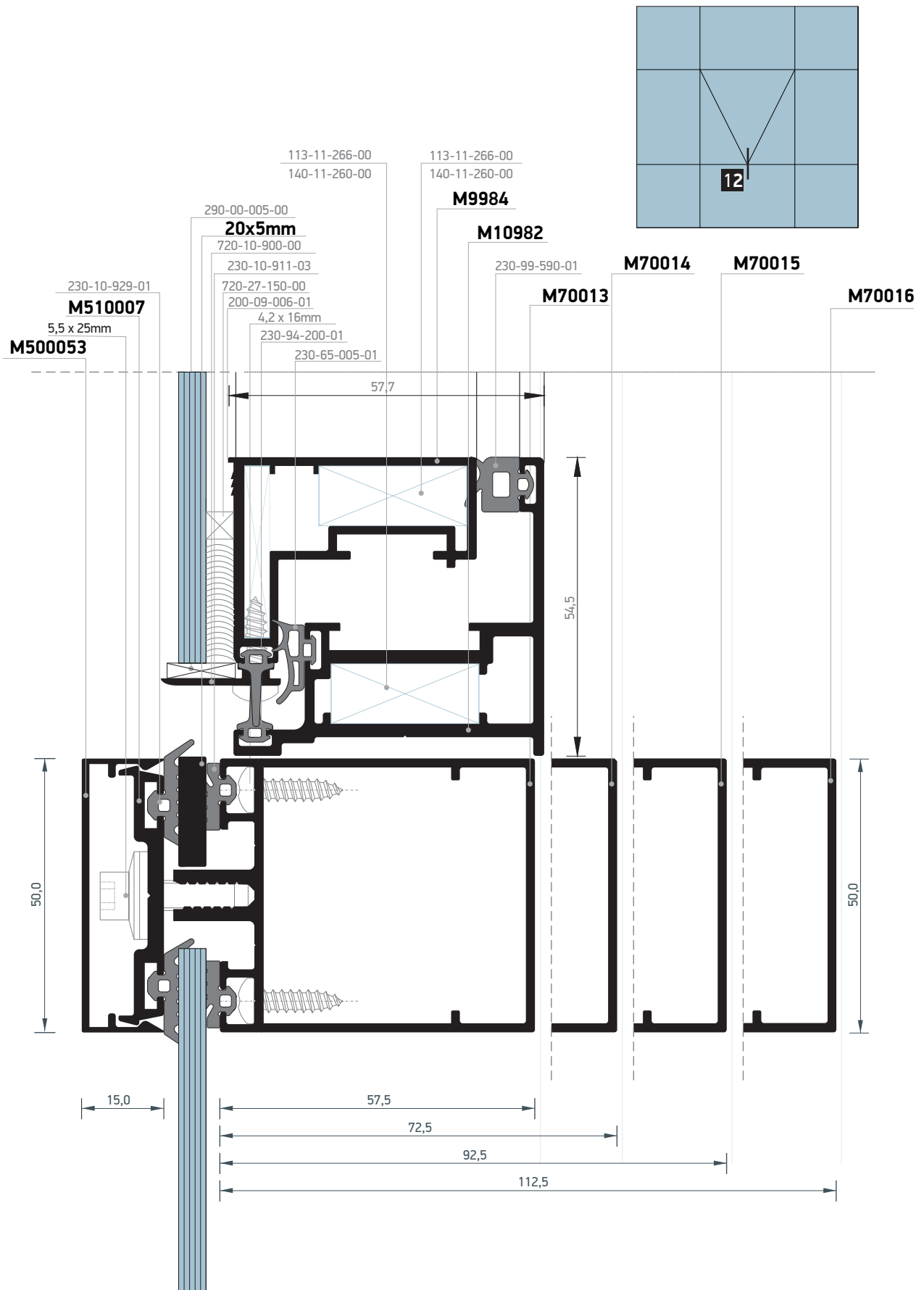
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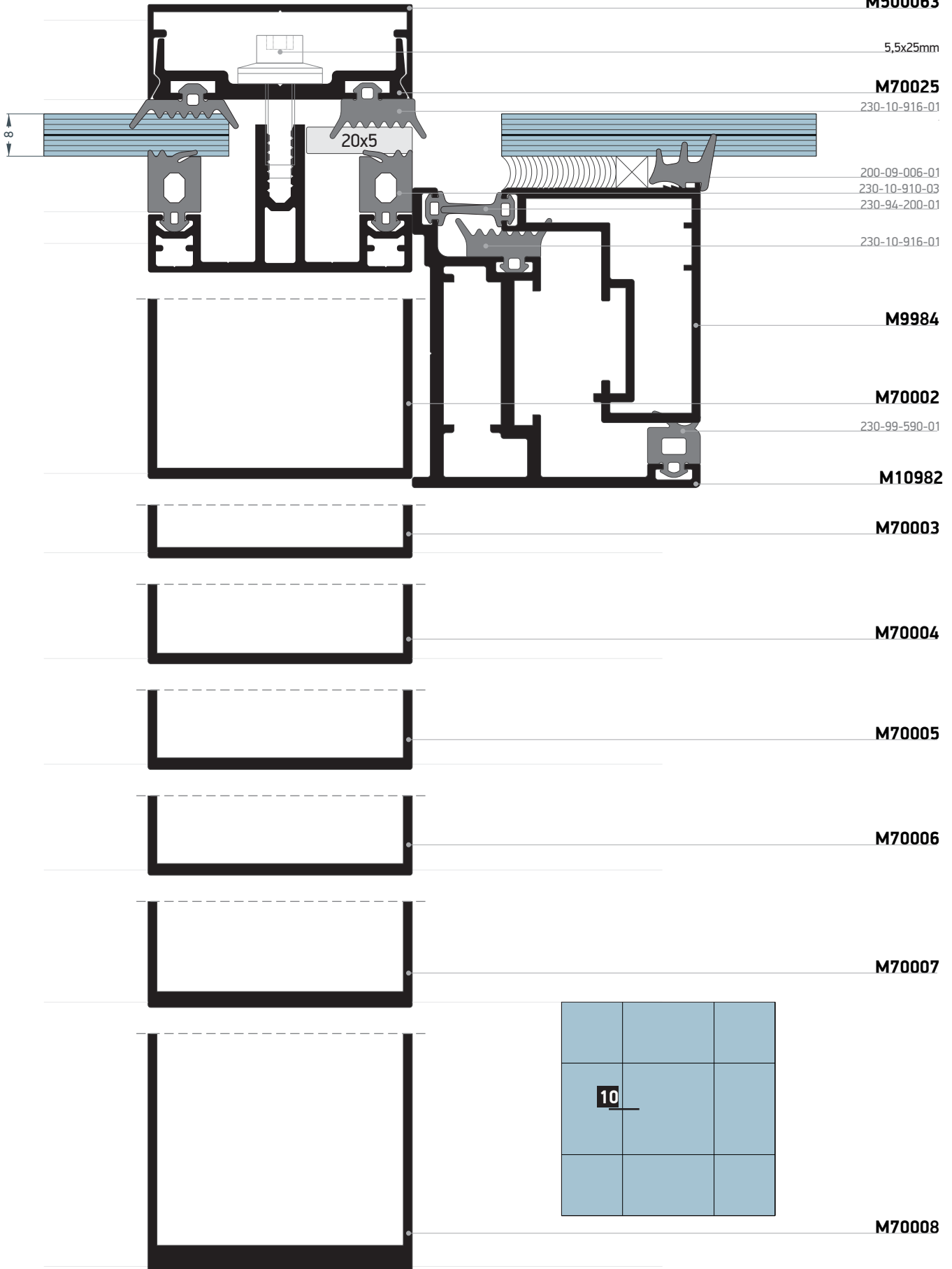
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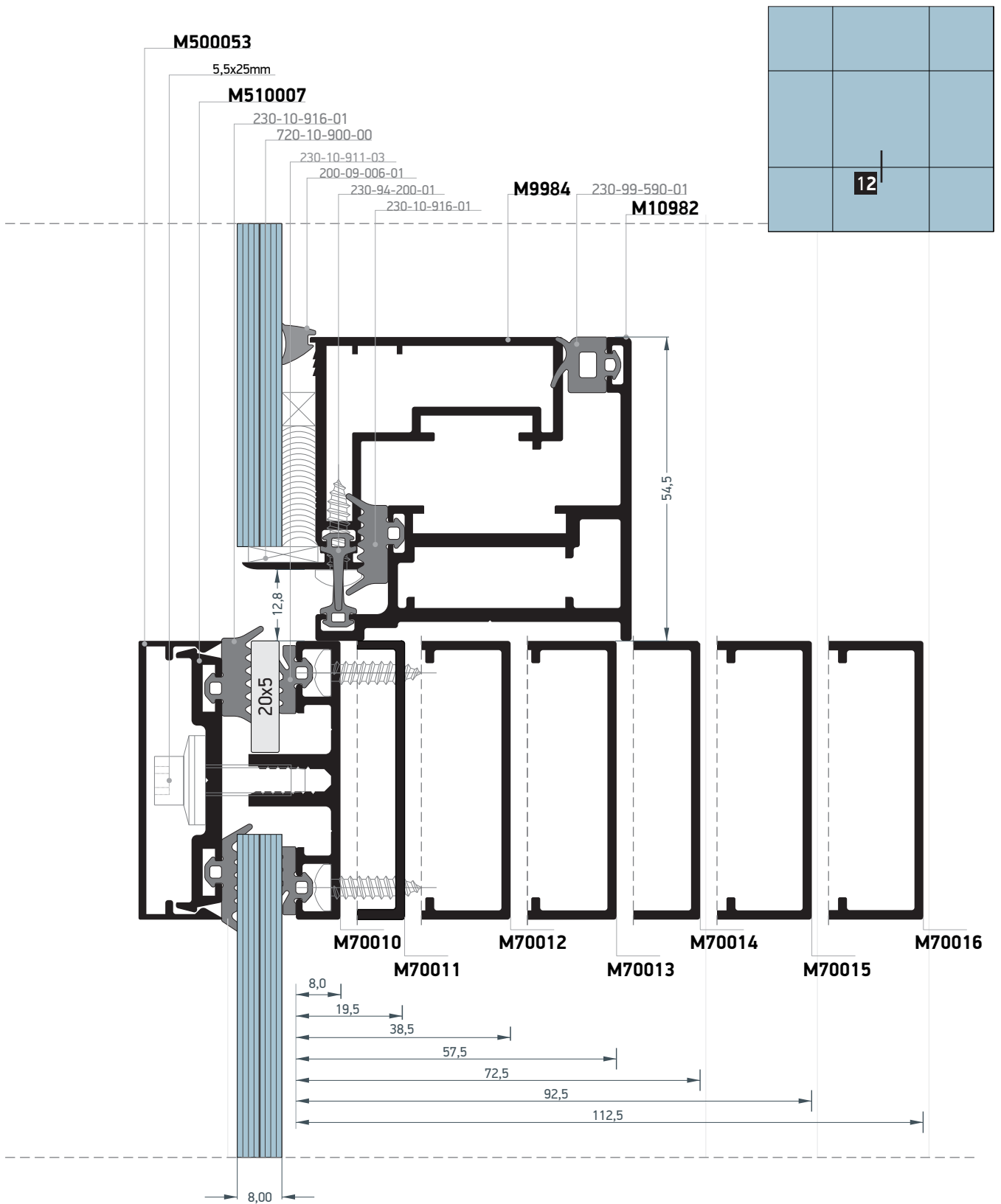
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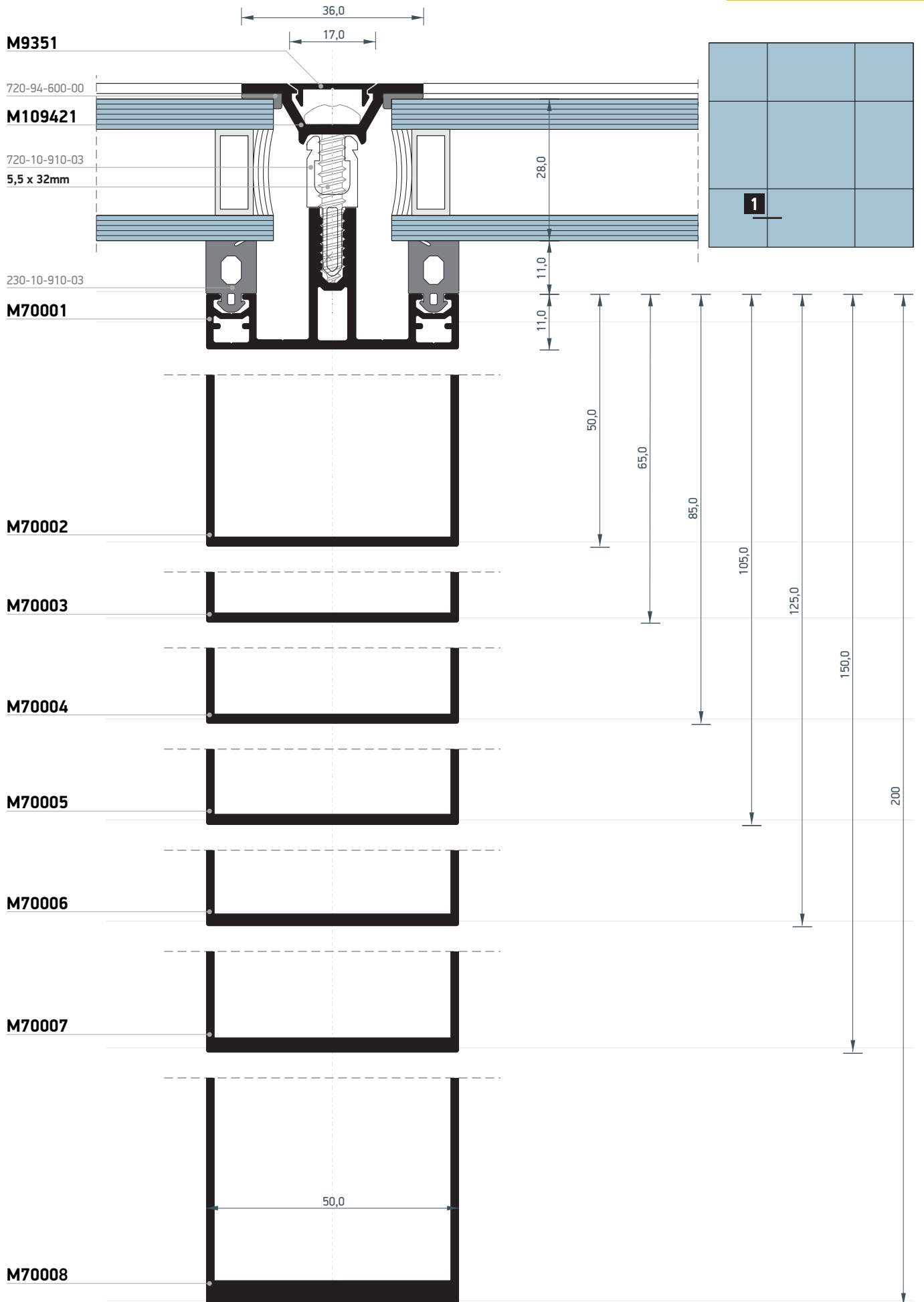




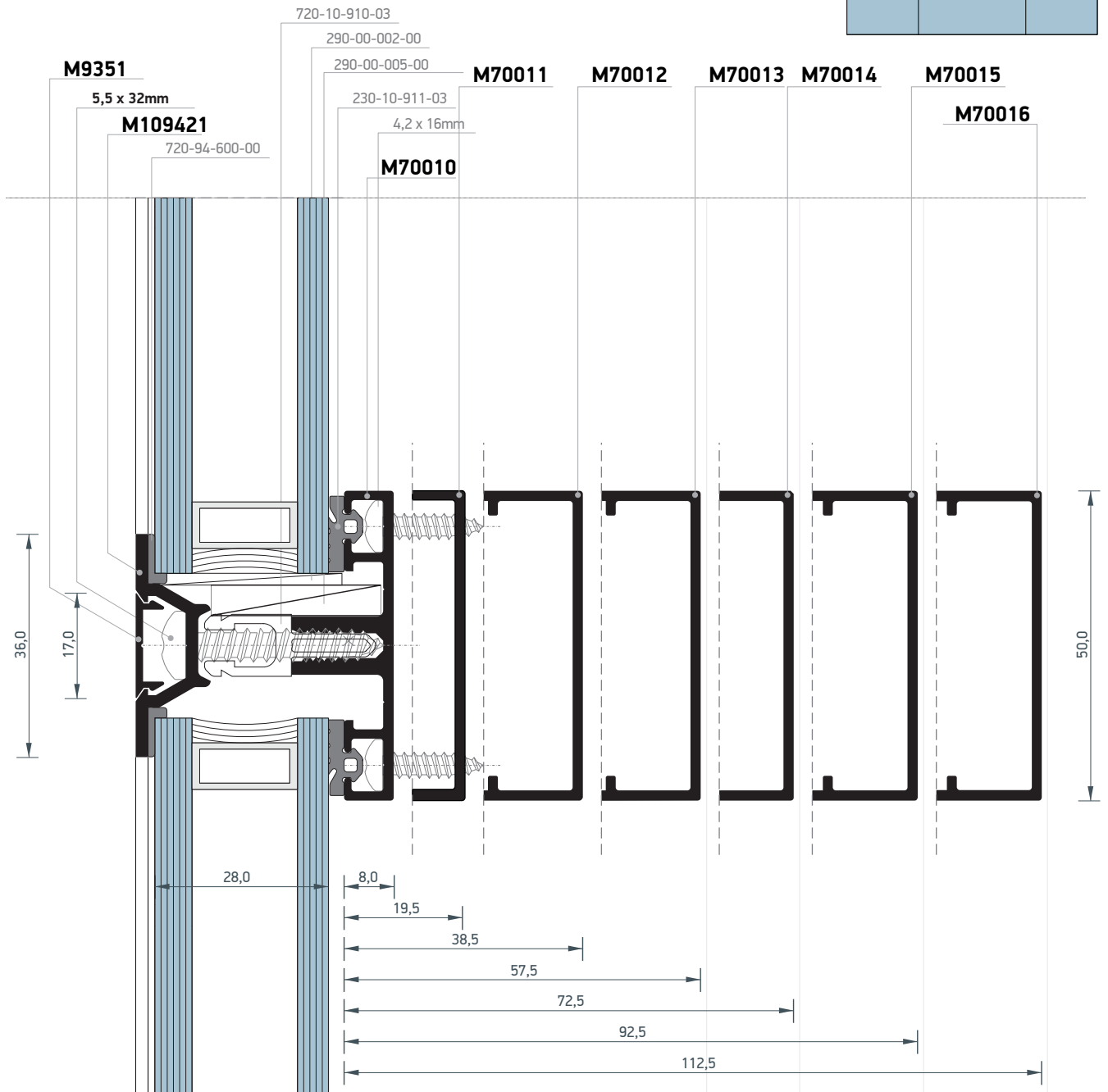
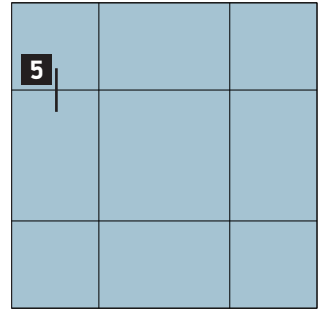
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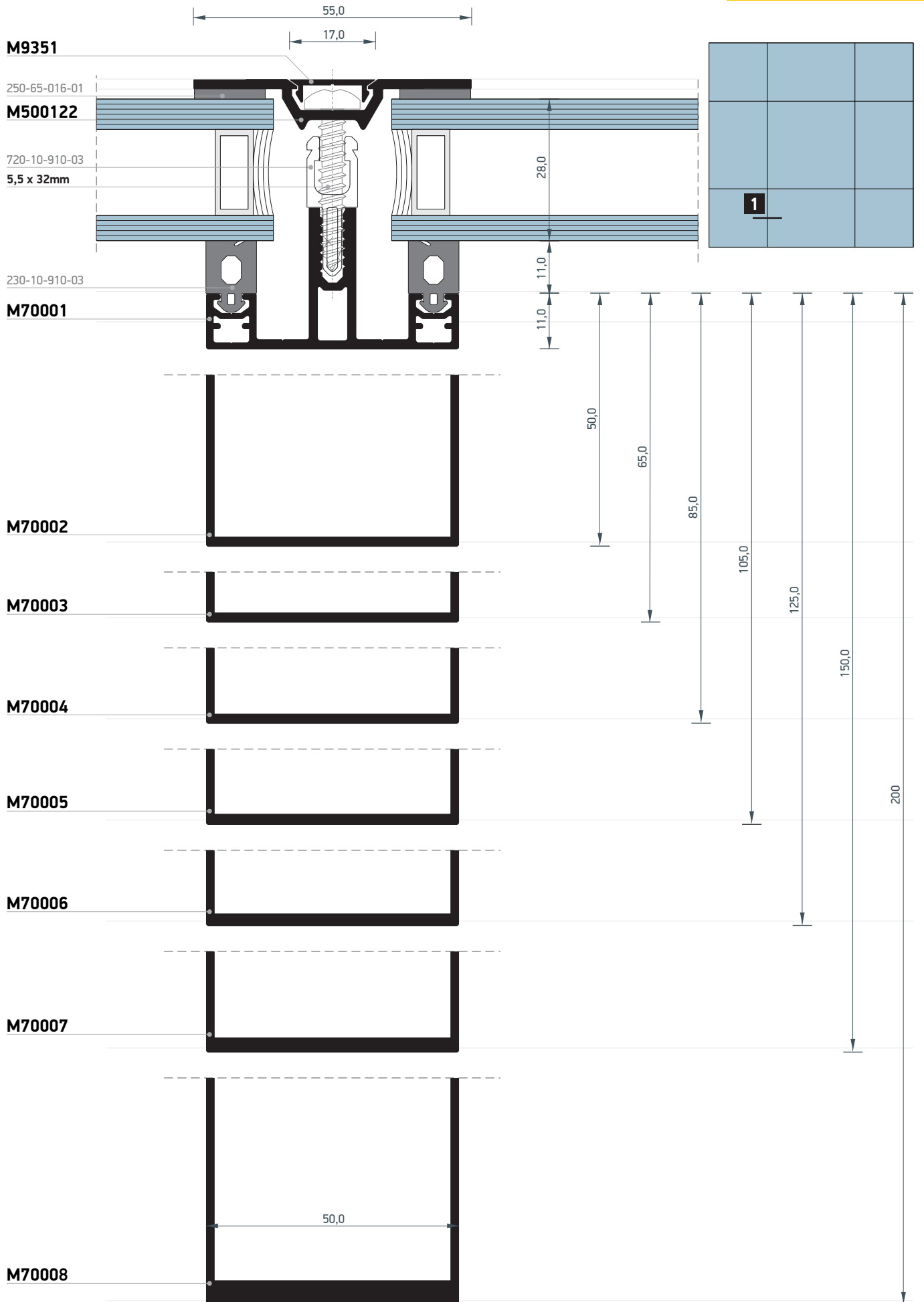




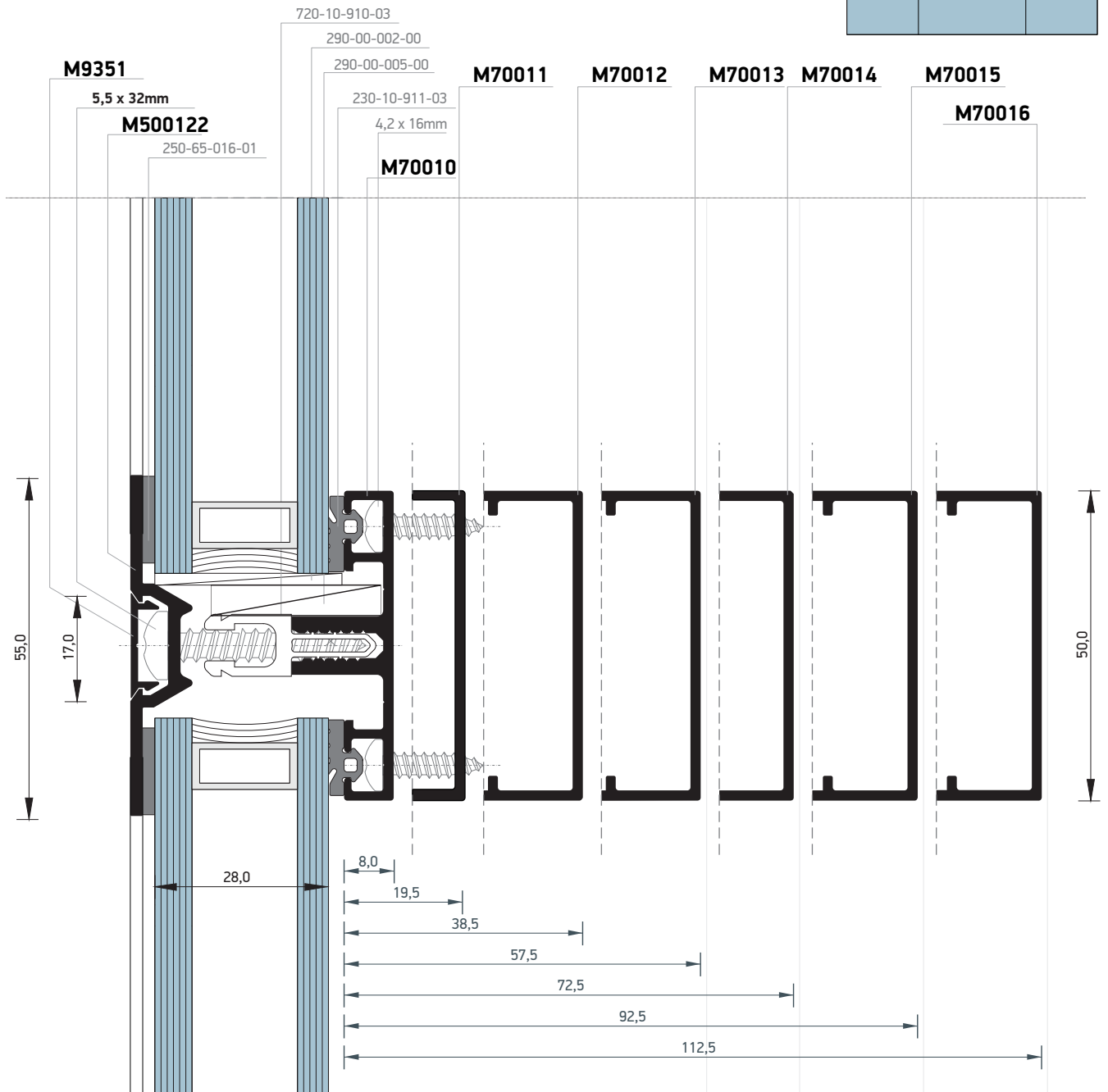
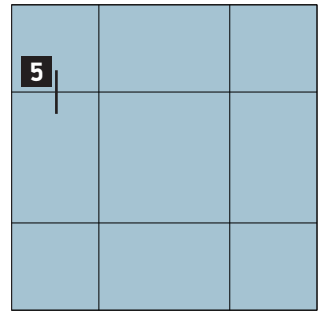


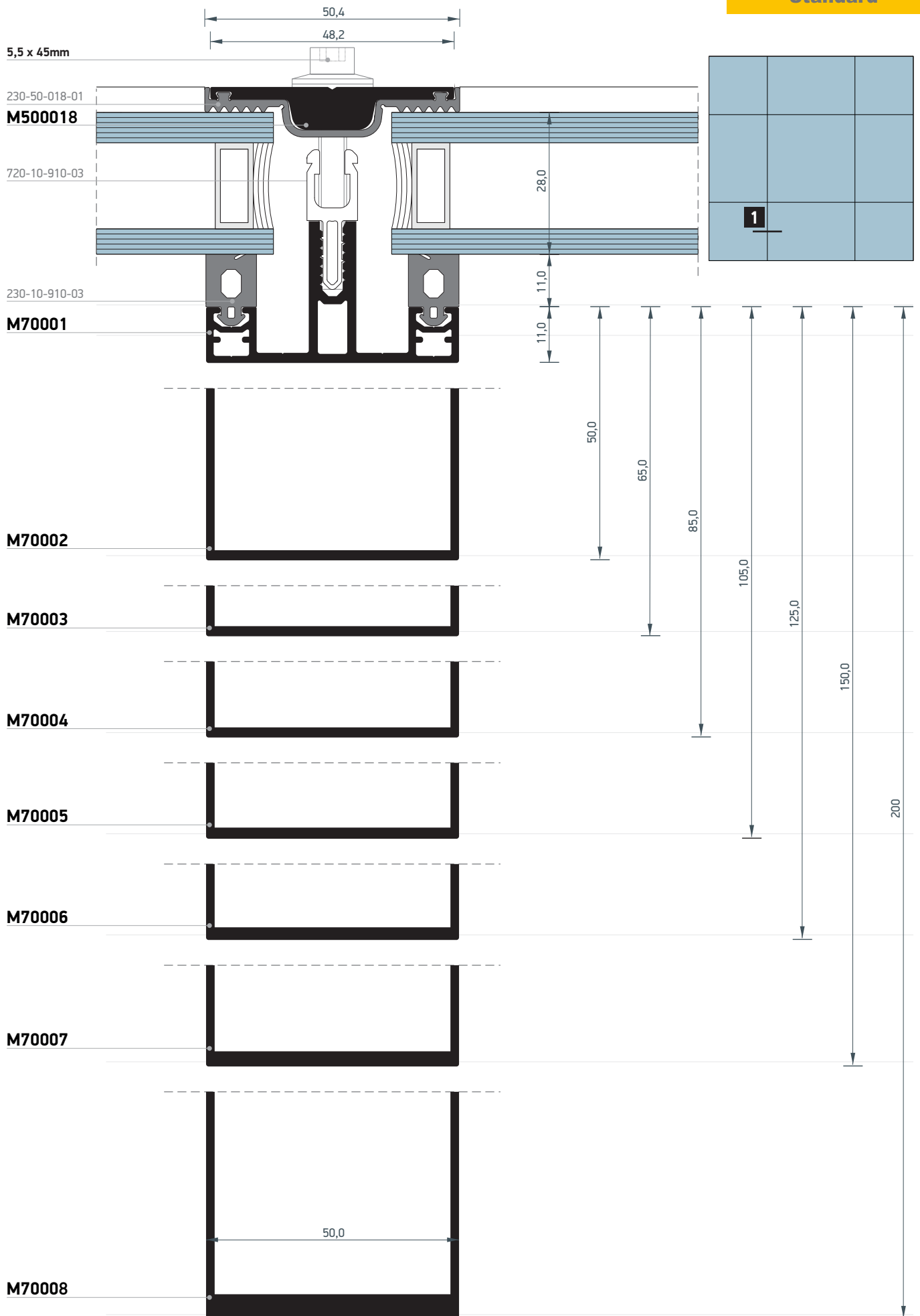
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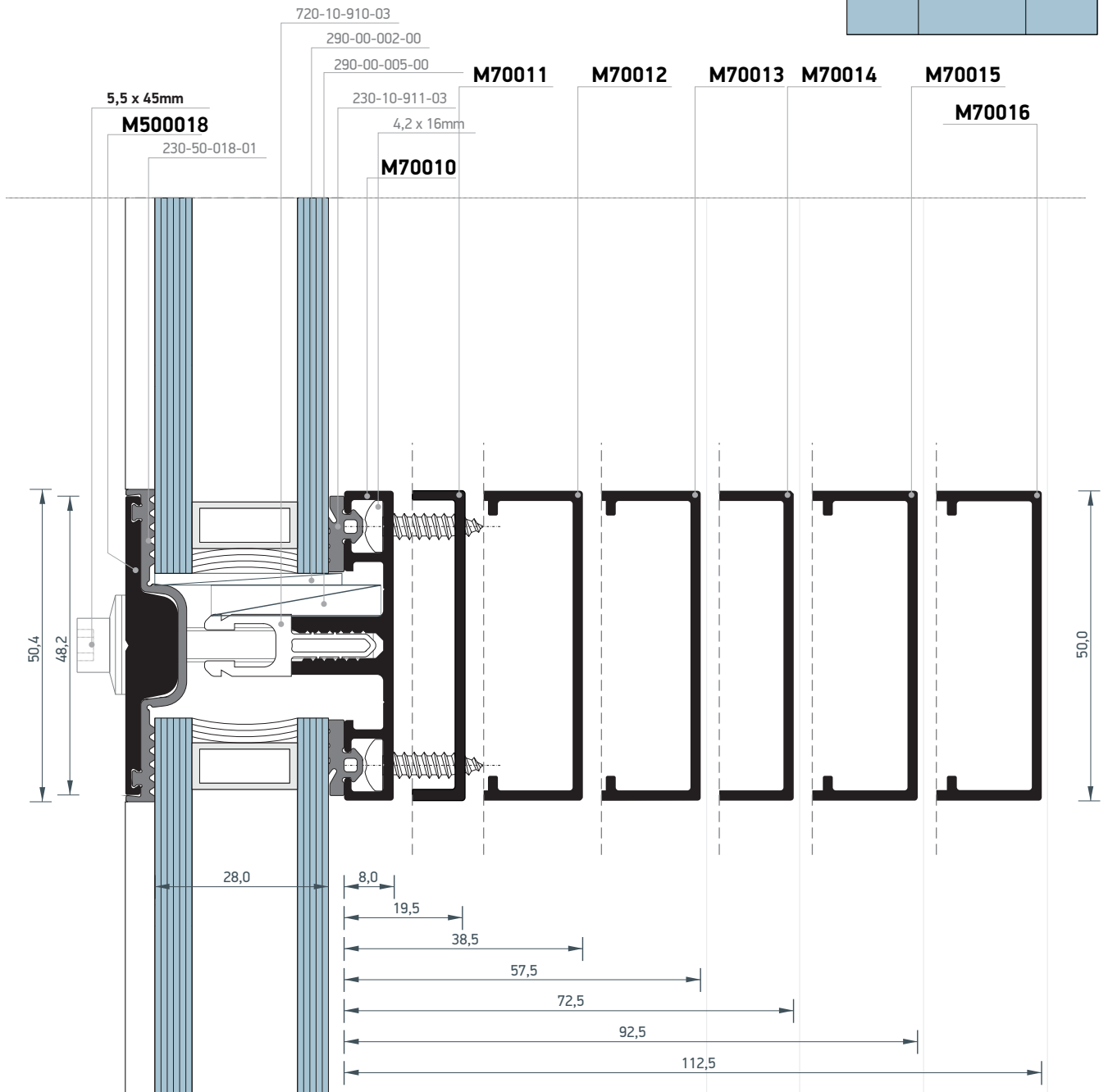
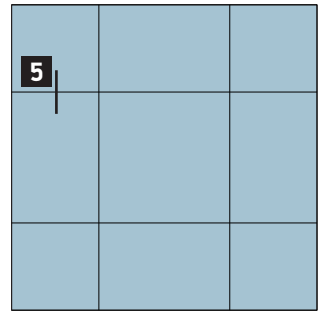


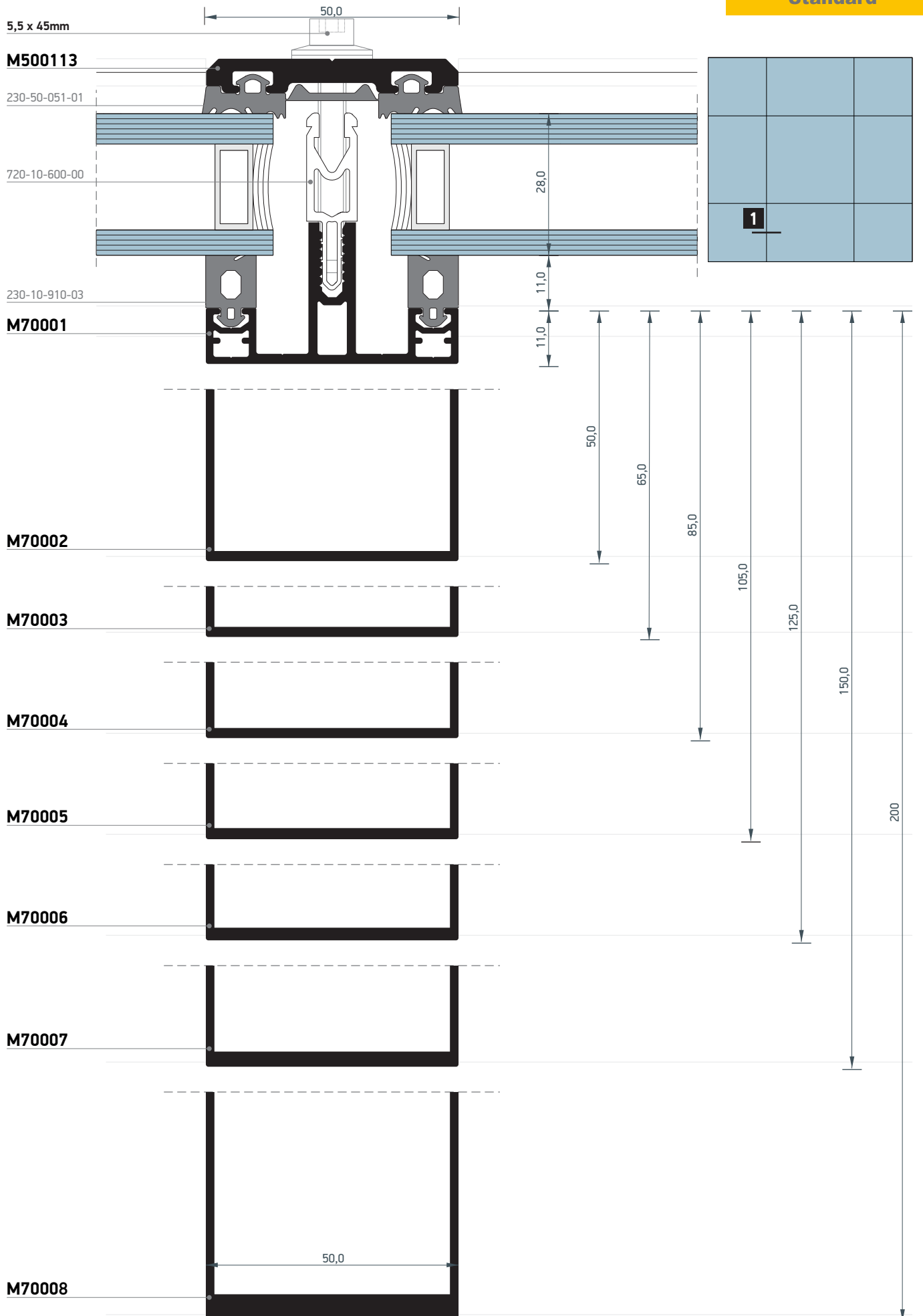
Τομές 1:1 | Section 1:1



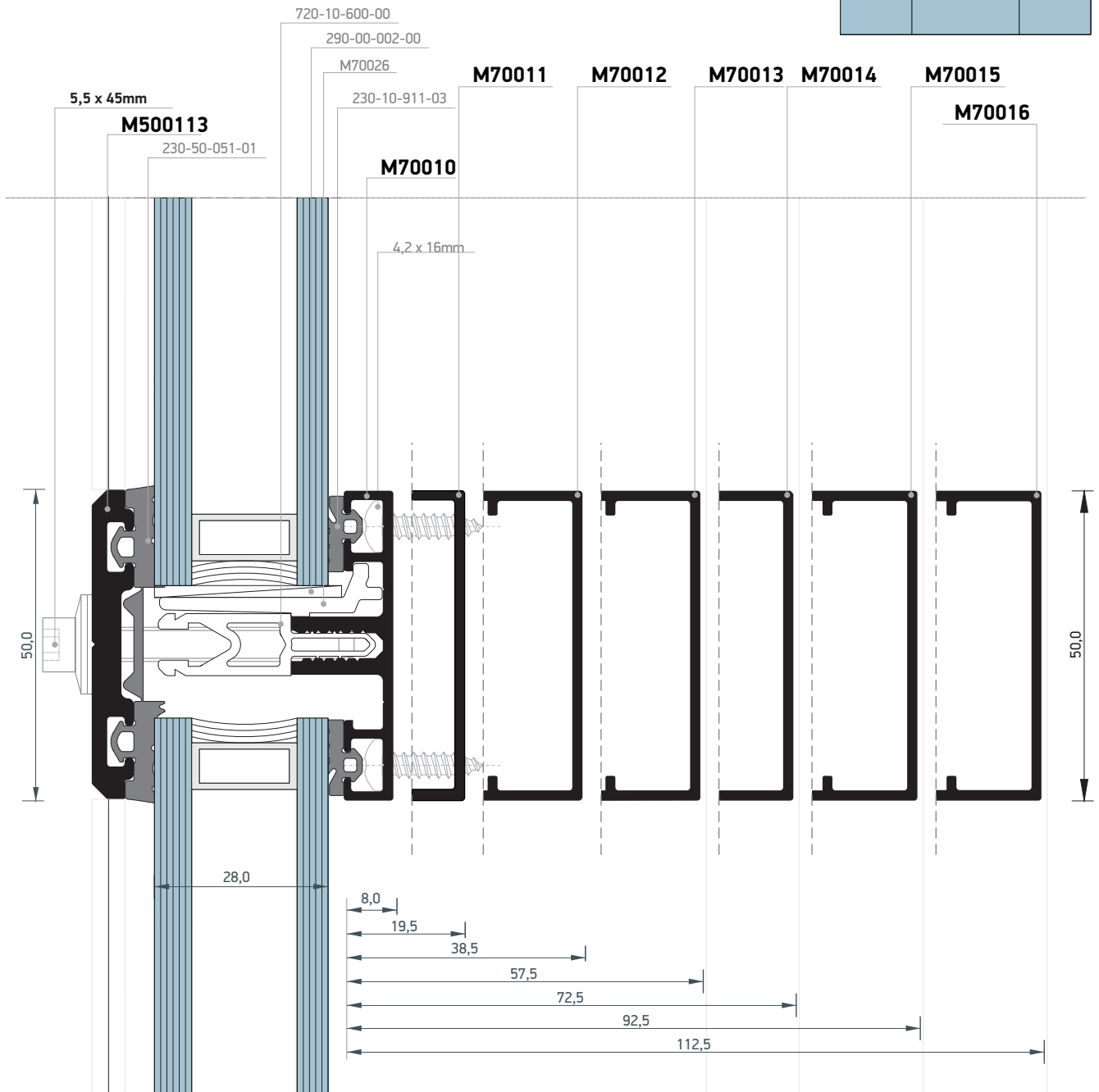
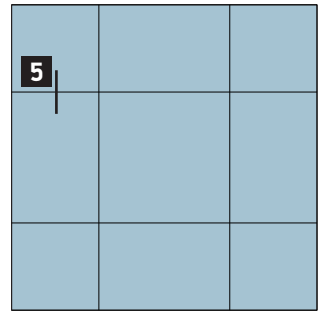


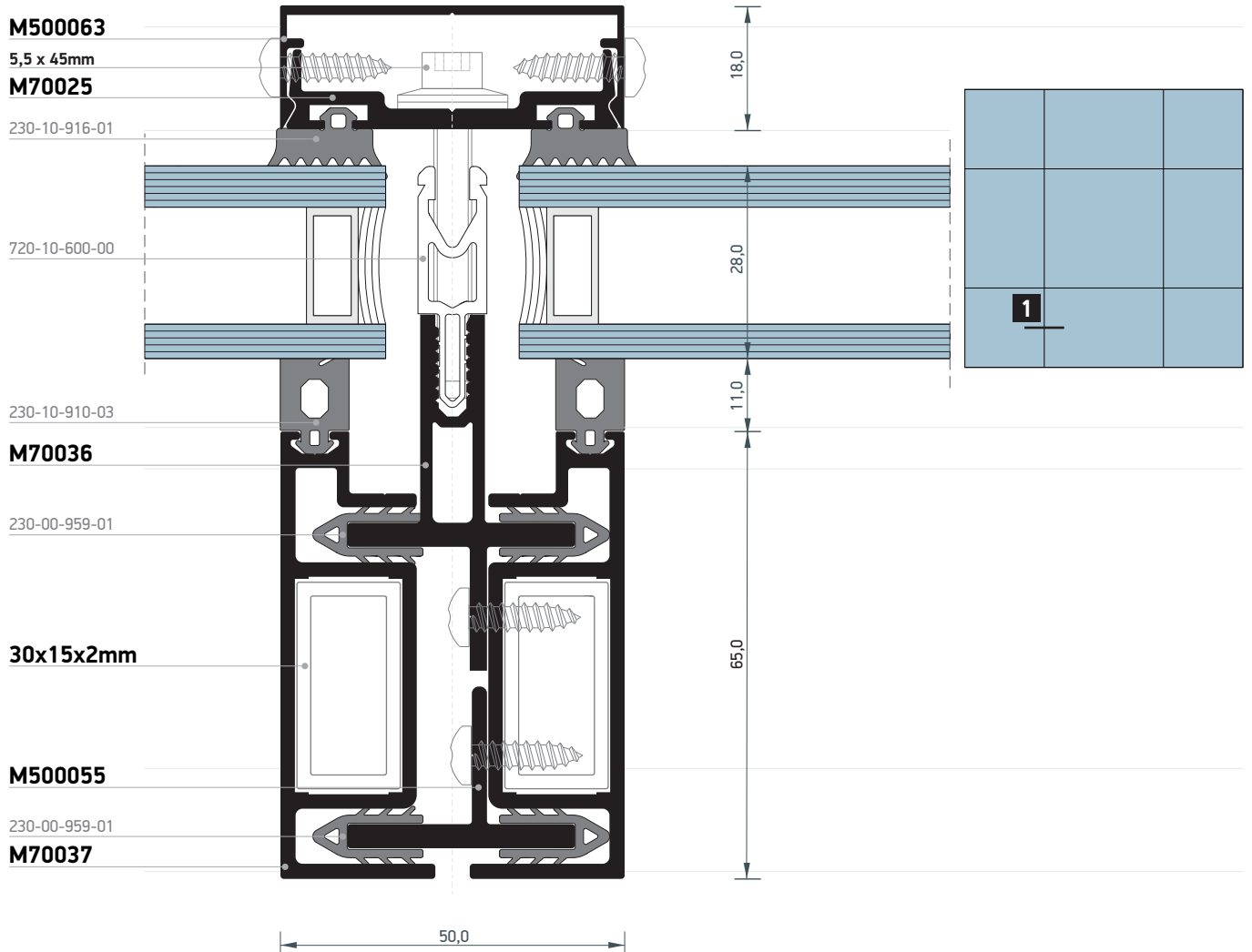
Τομές 1:1 | Section 1:1

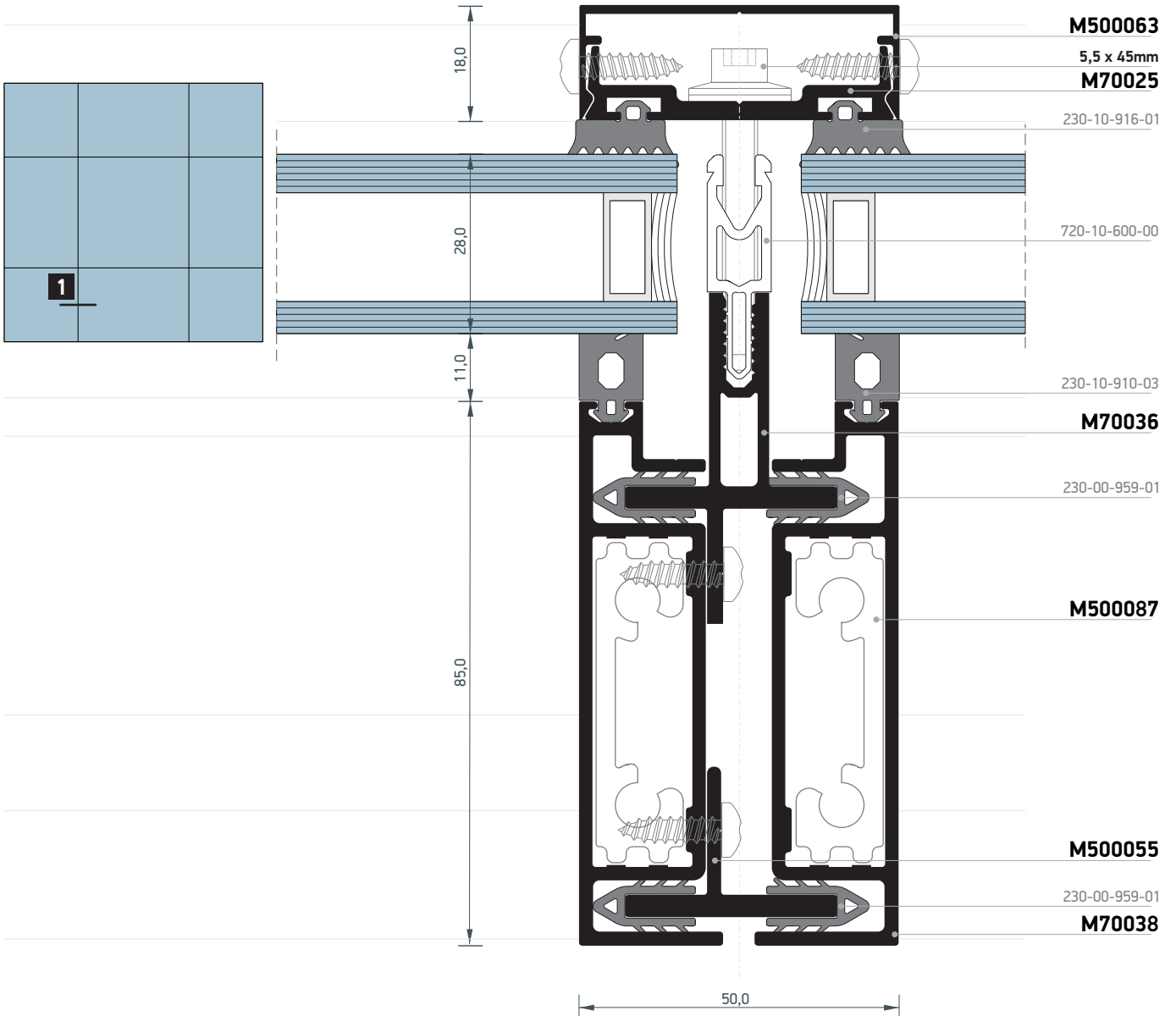


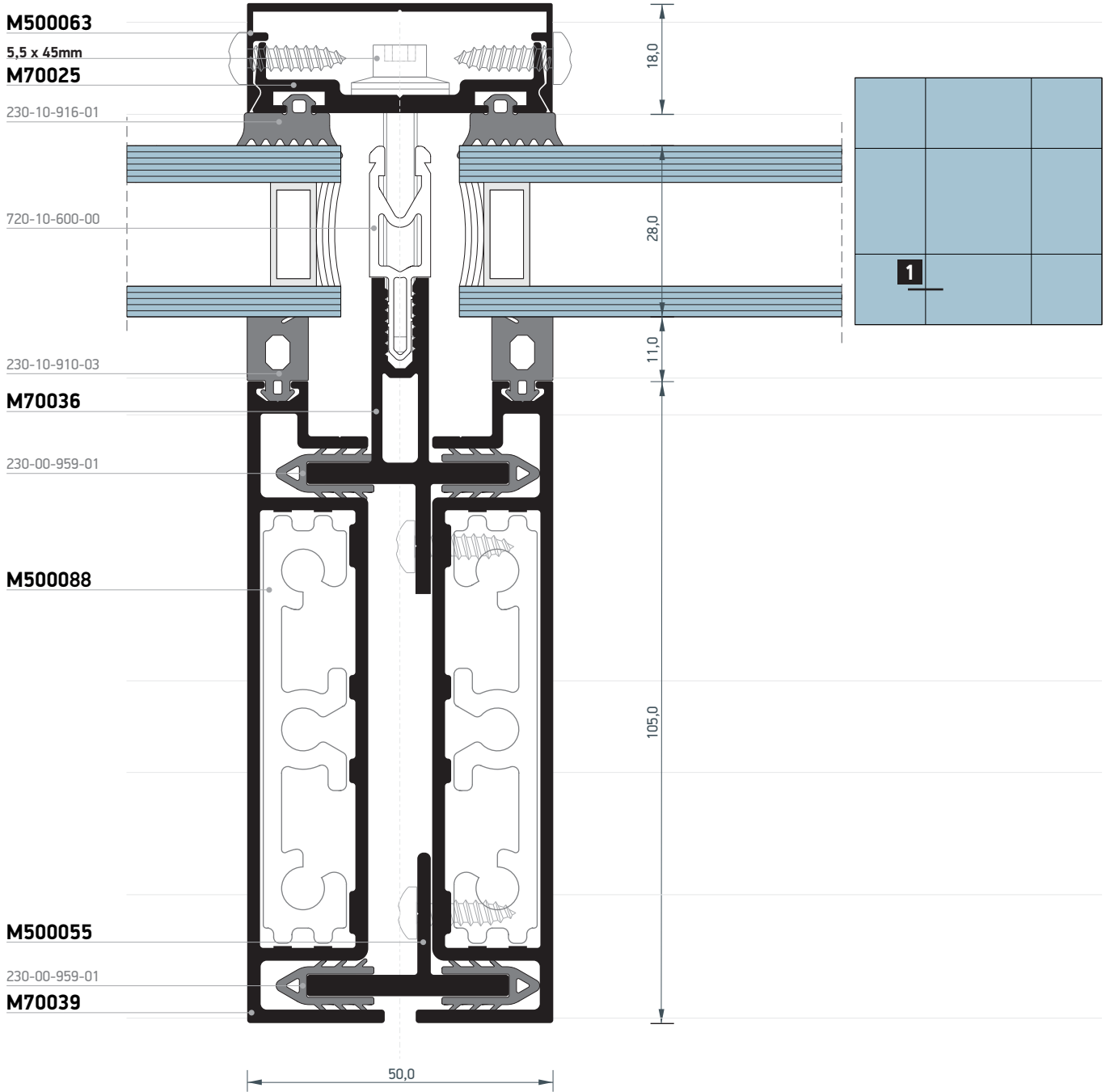


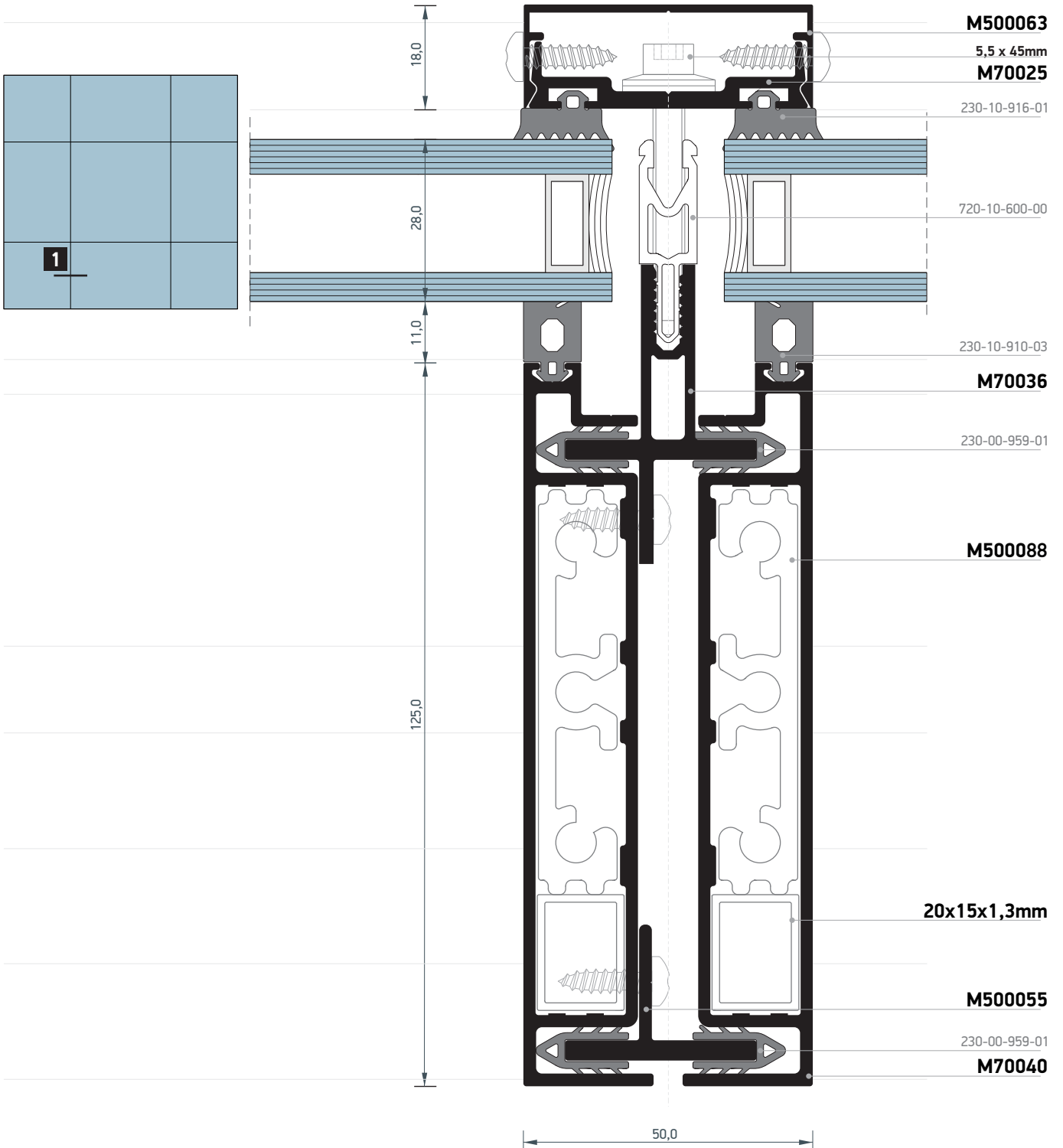
Τομές 1:1 | Section 1:1

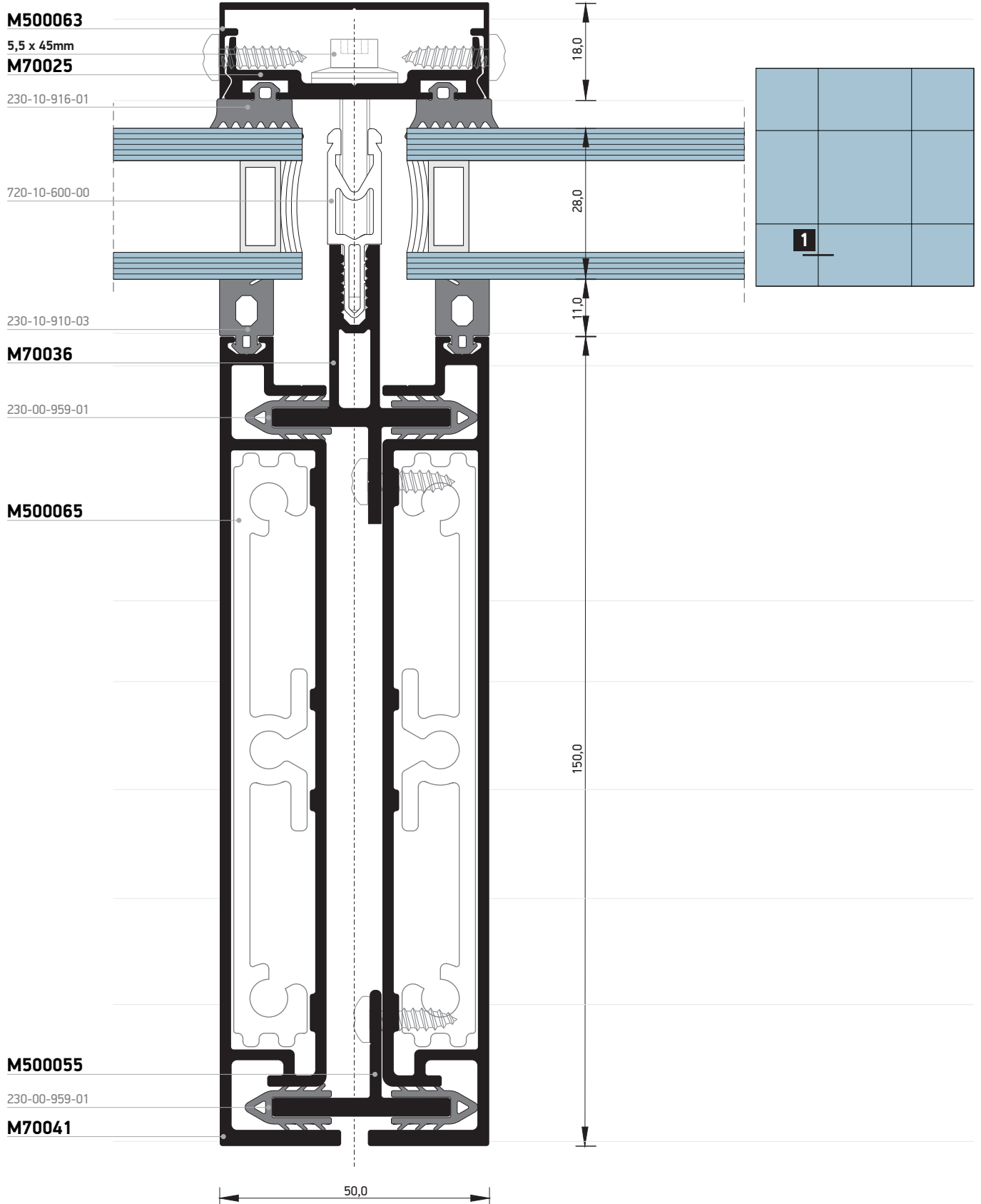


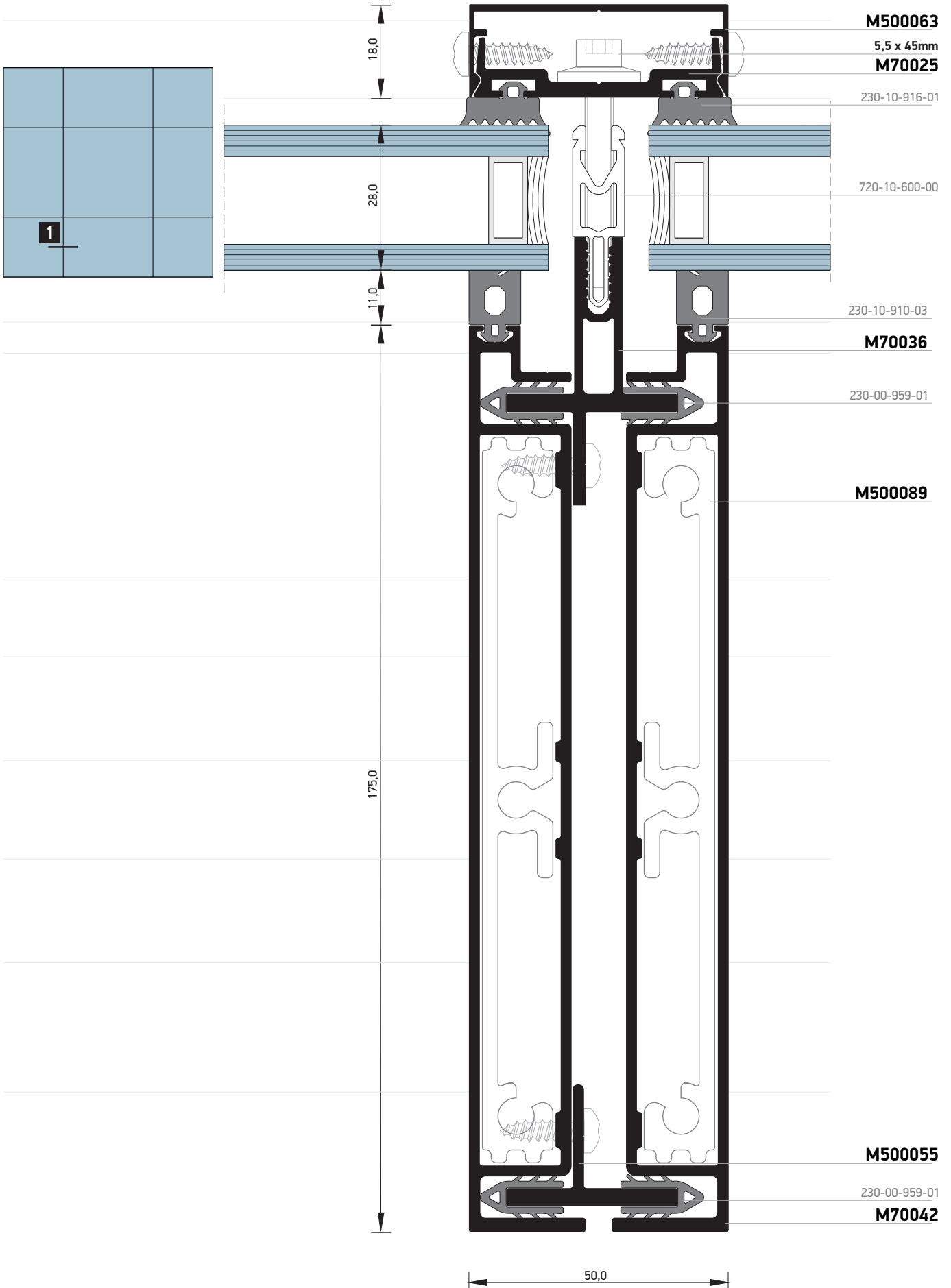


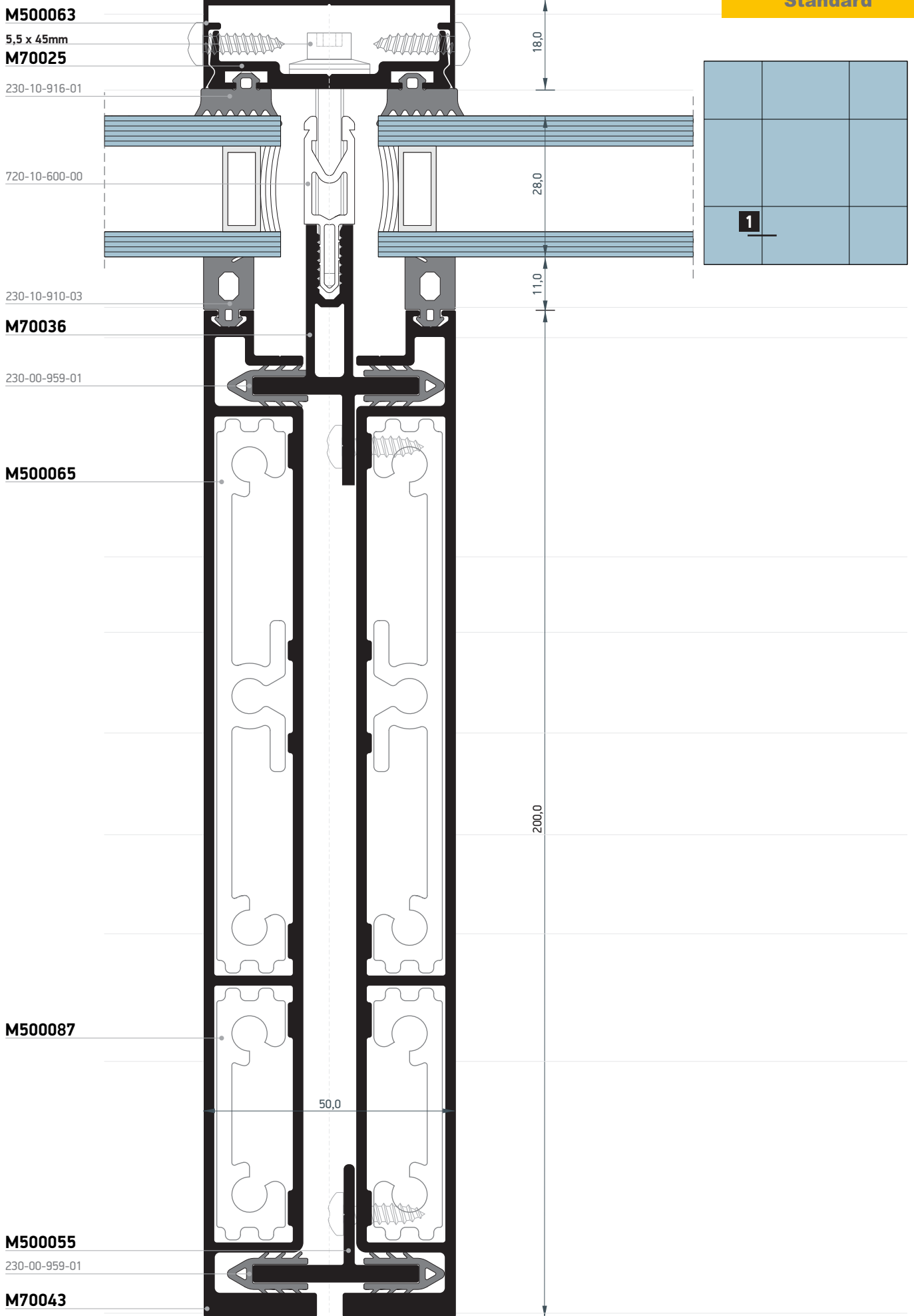






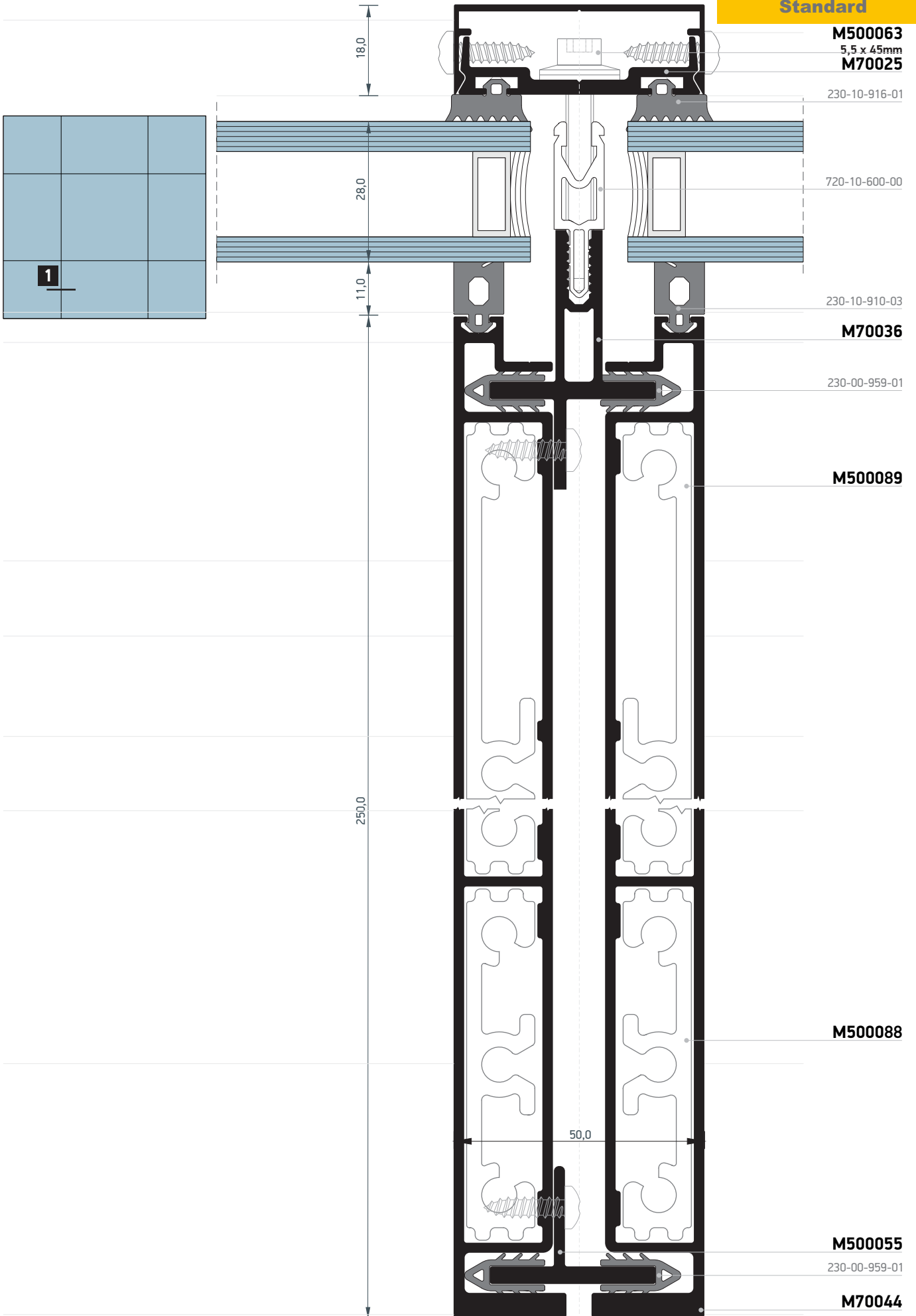


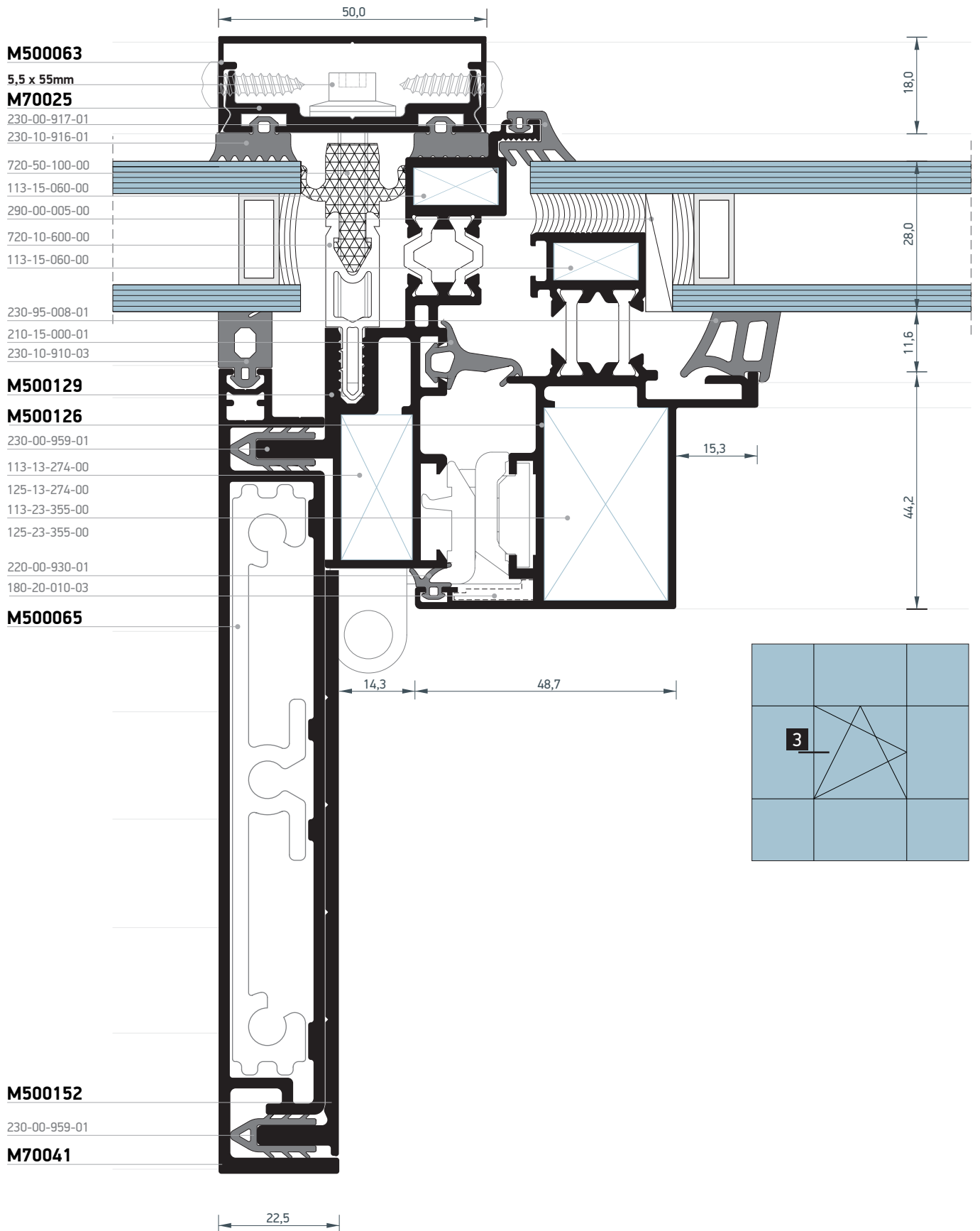


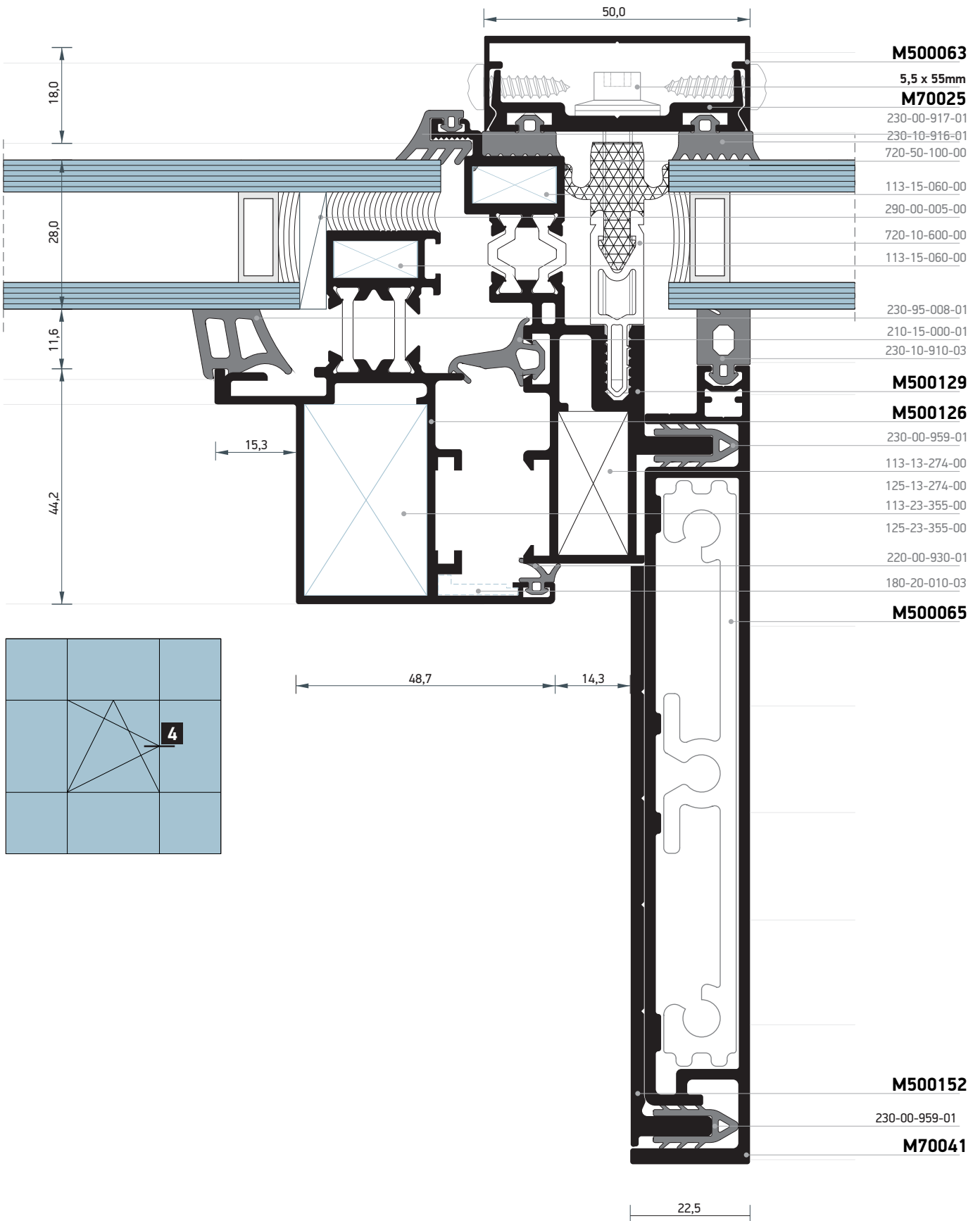


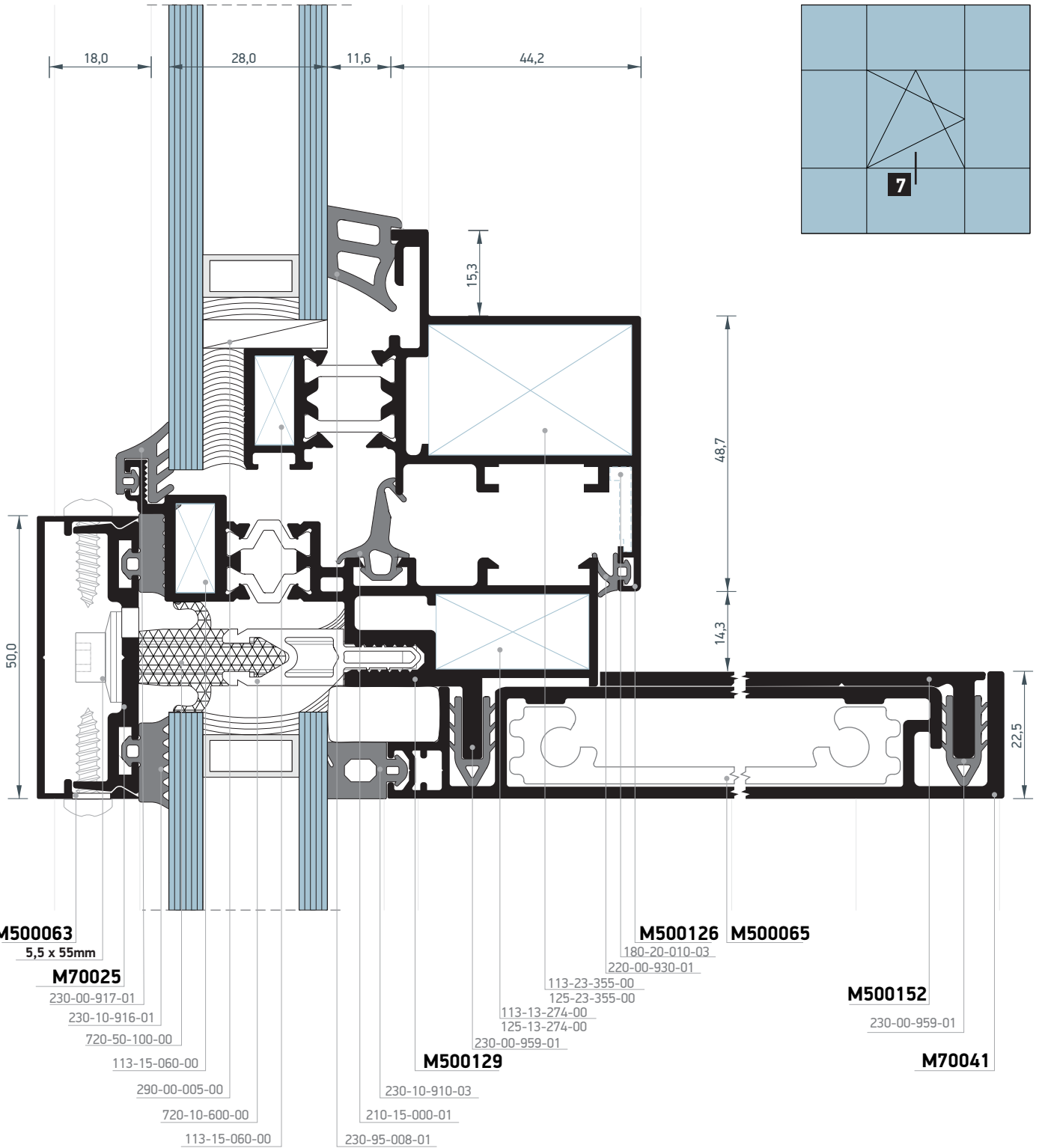
Τομές 1:1 | Section 1:1

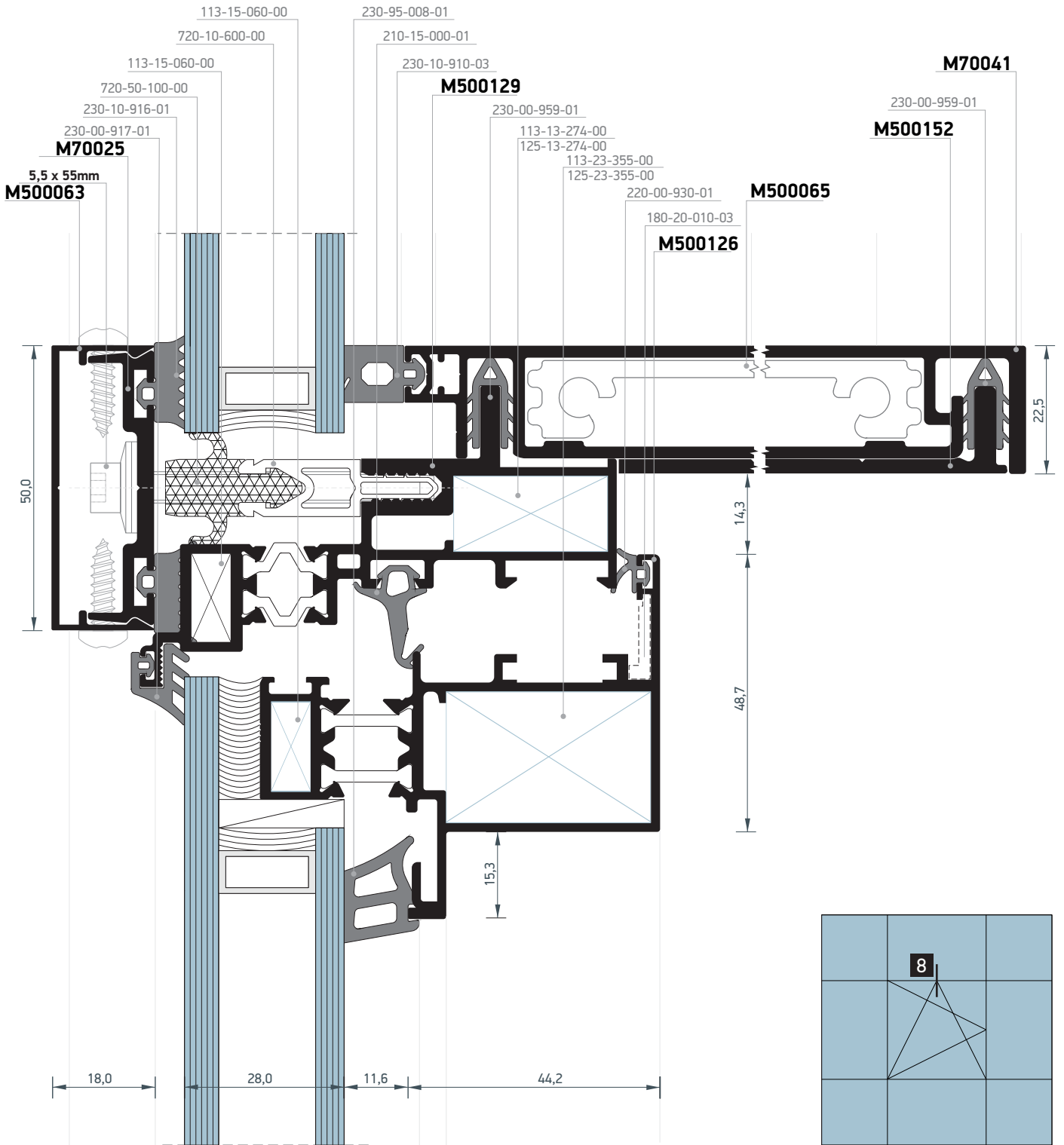
Standard

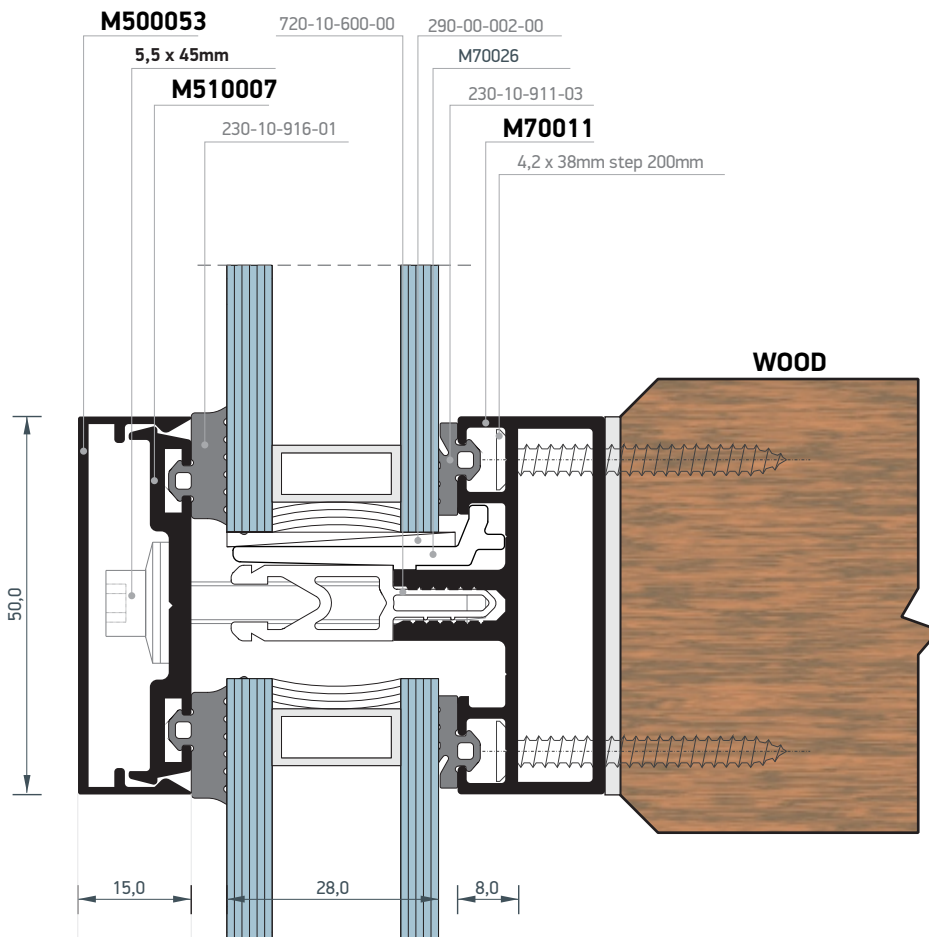
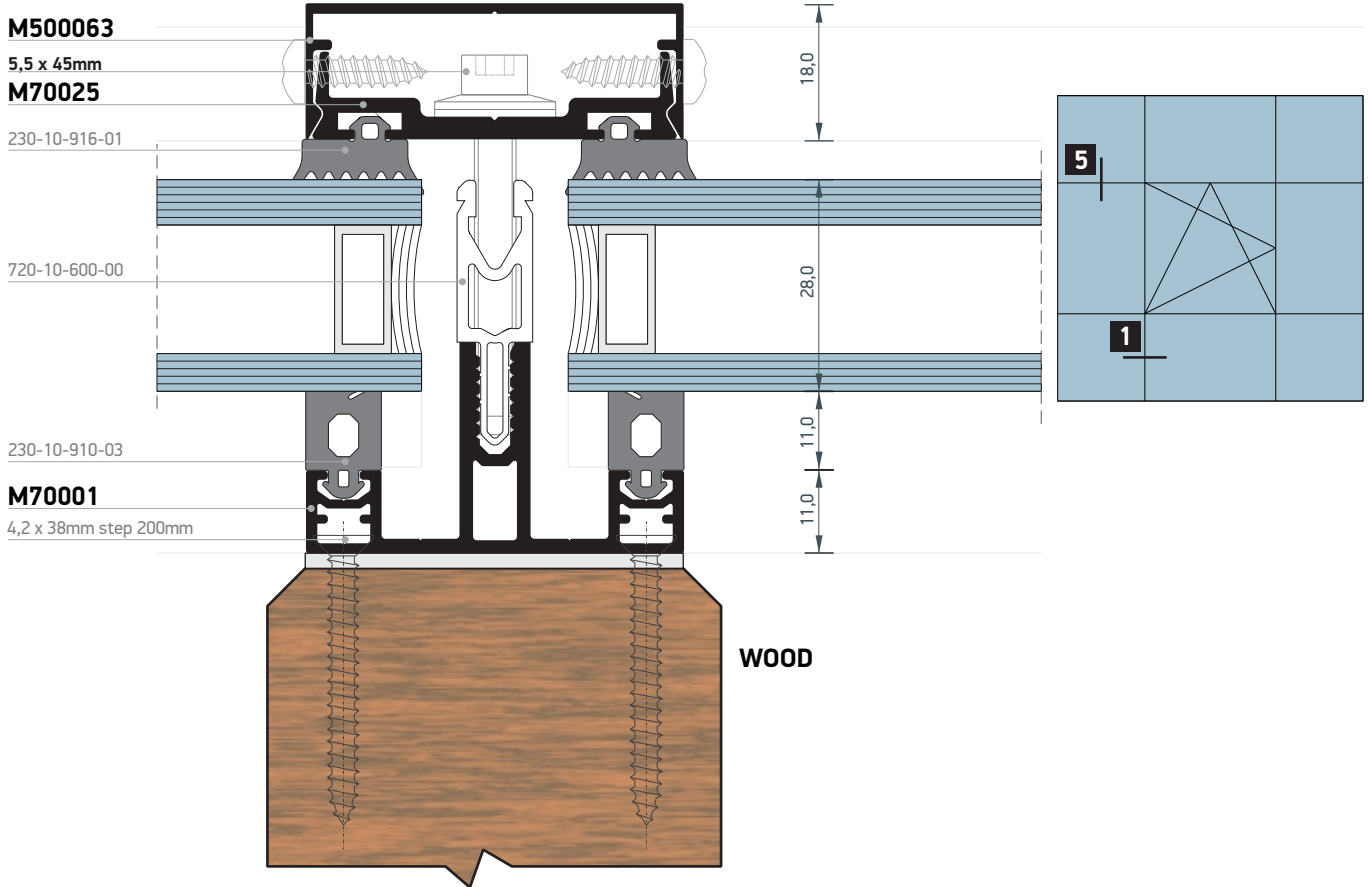


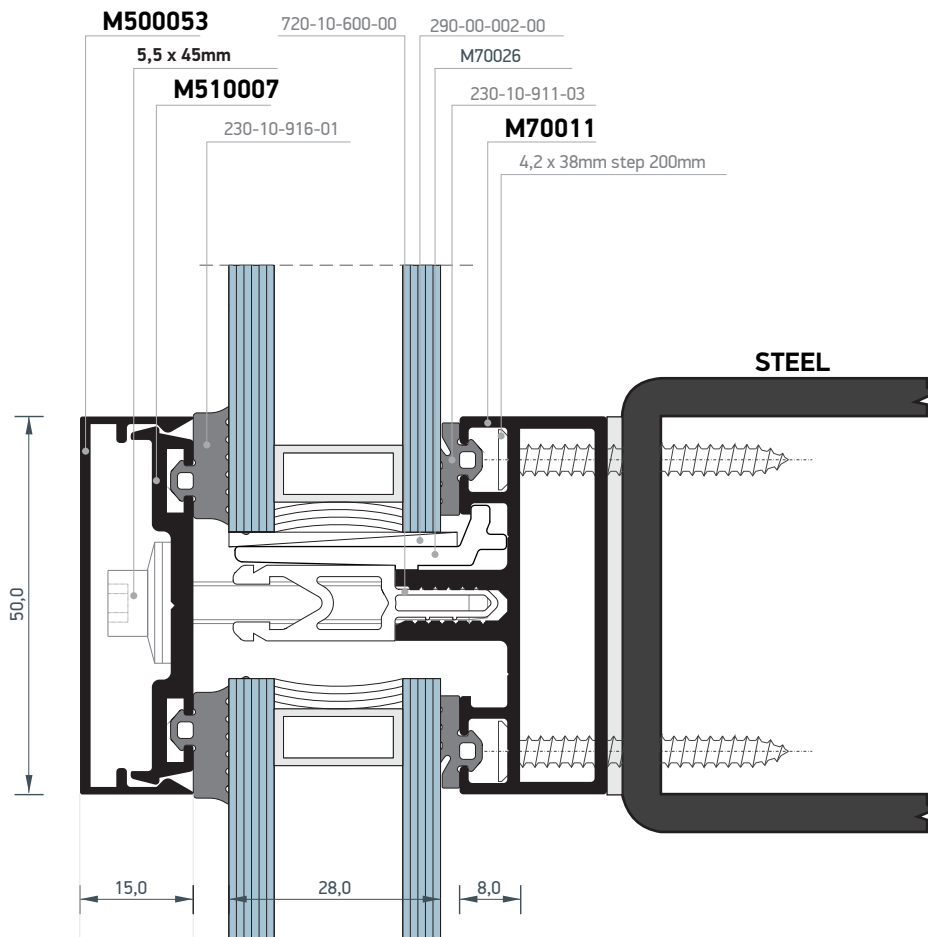
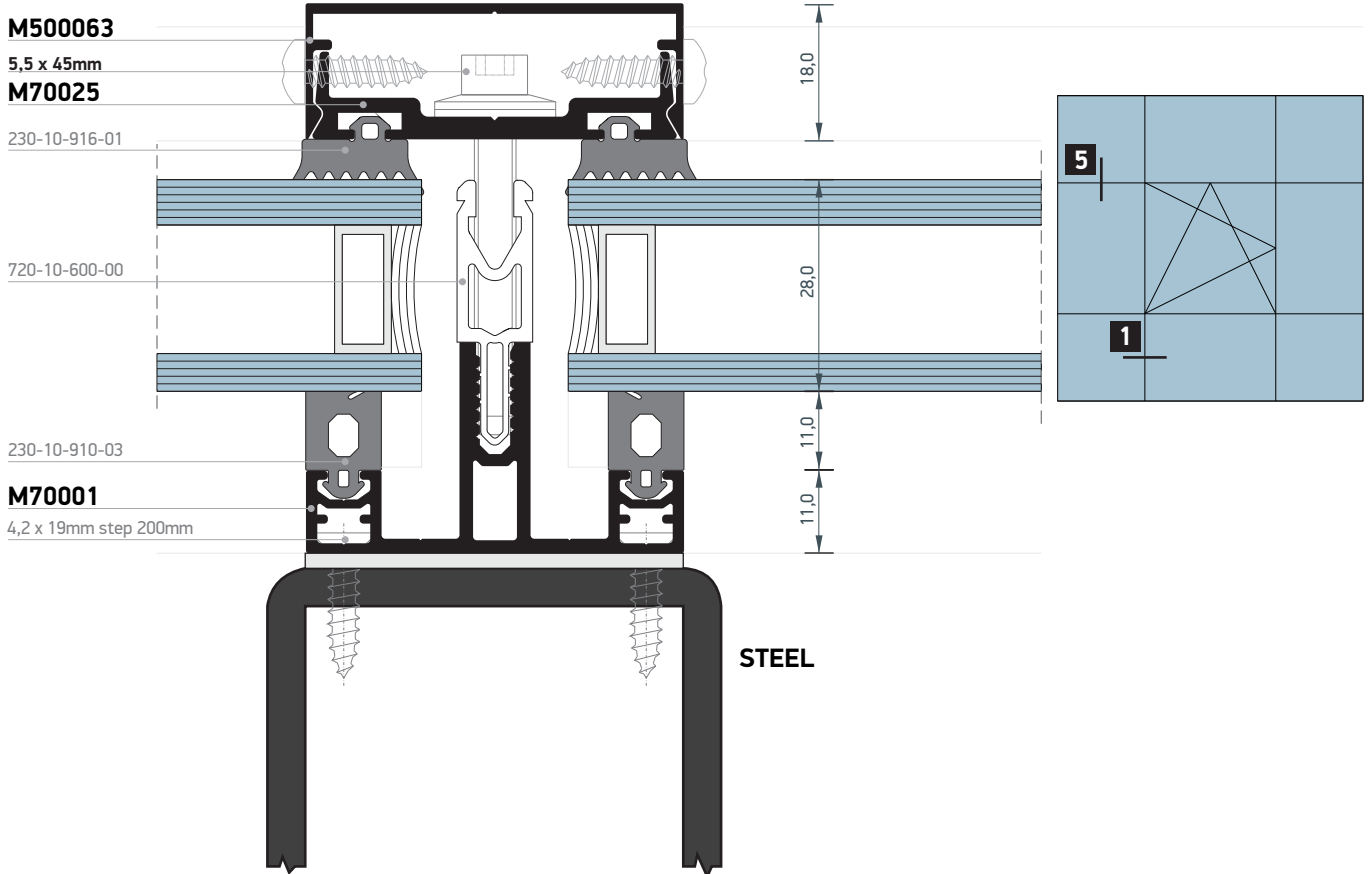












720-27-150-00

720-18-075-03

230-00-959-01

720-10-968-00

M109683

5,5 x 16mm

720-10-910-03

230-10-910-03

M70001

M500070

M70002

M70003

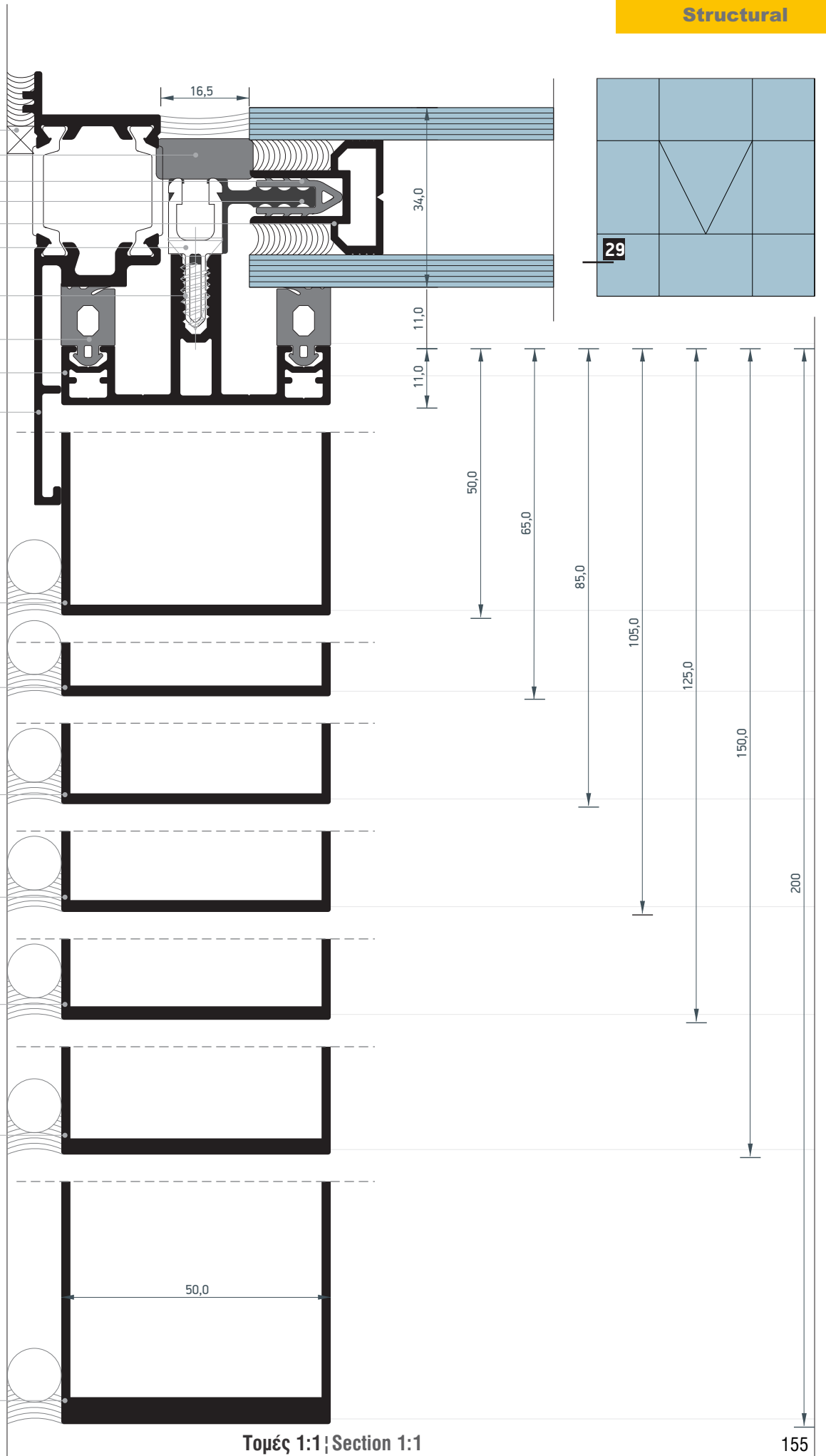
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M70005

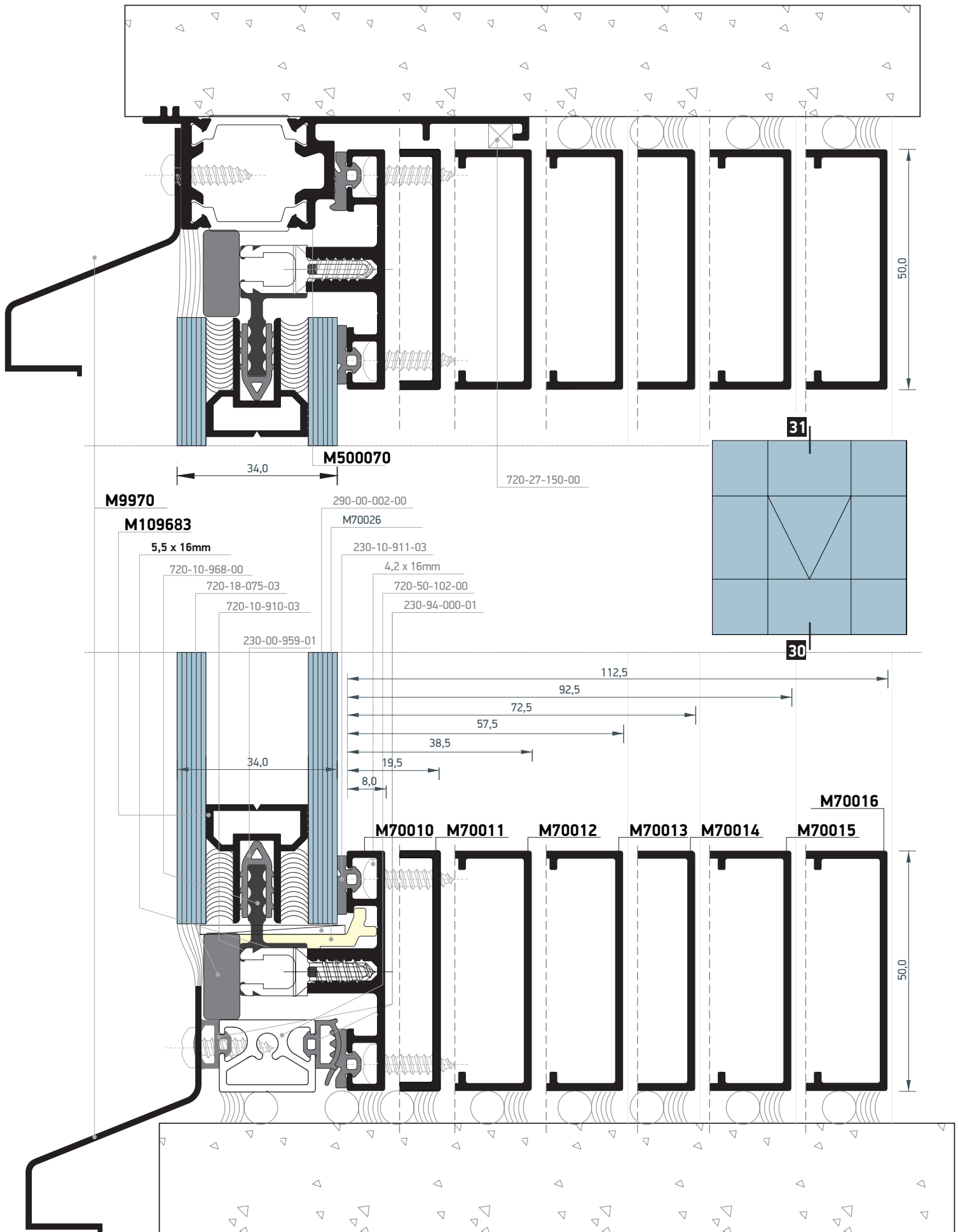
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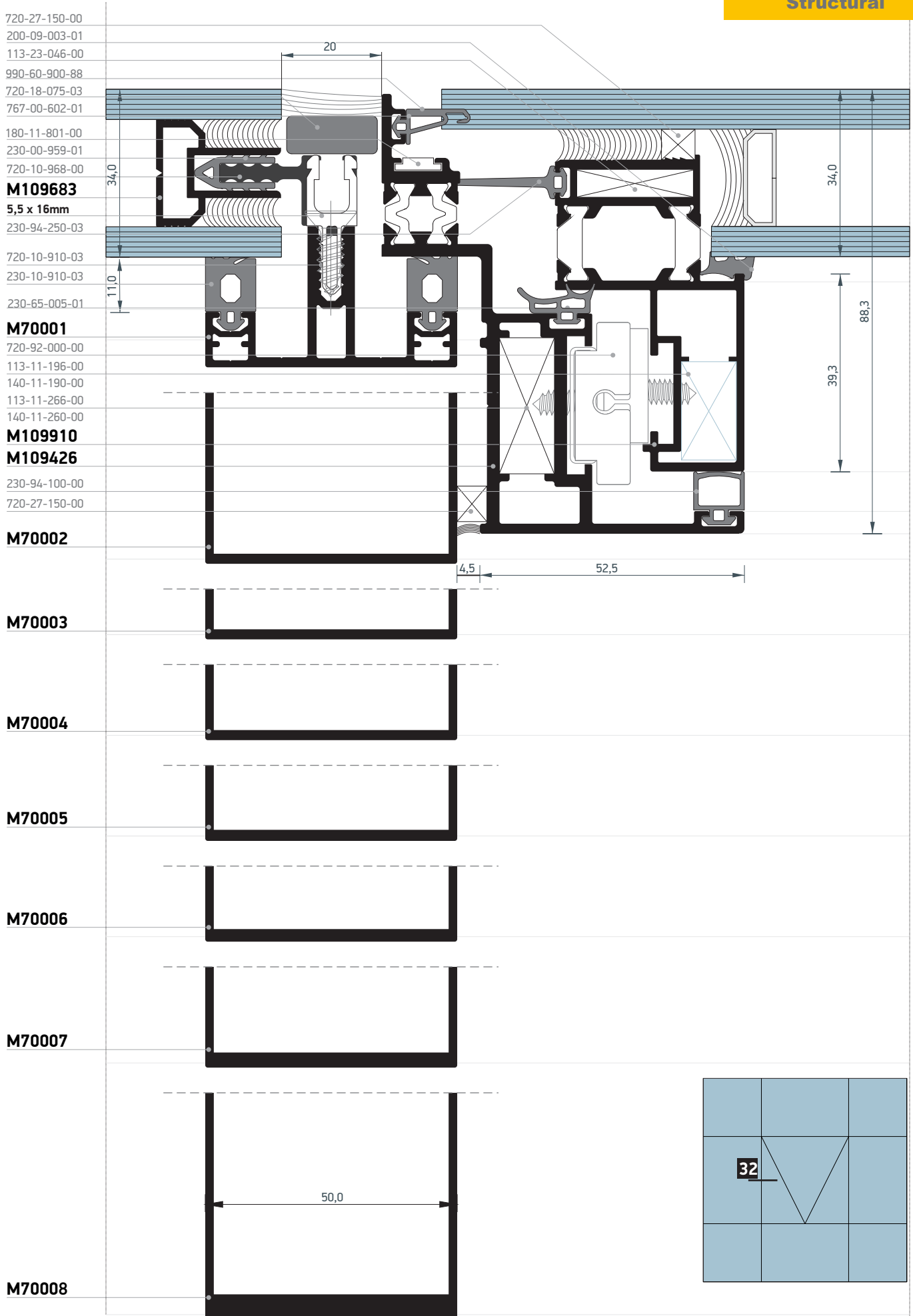
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M70008

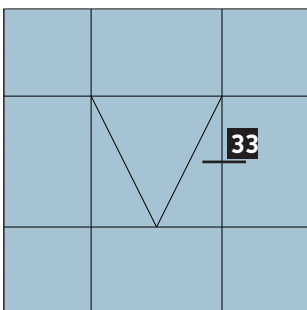
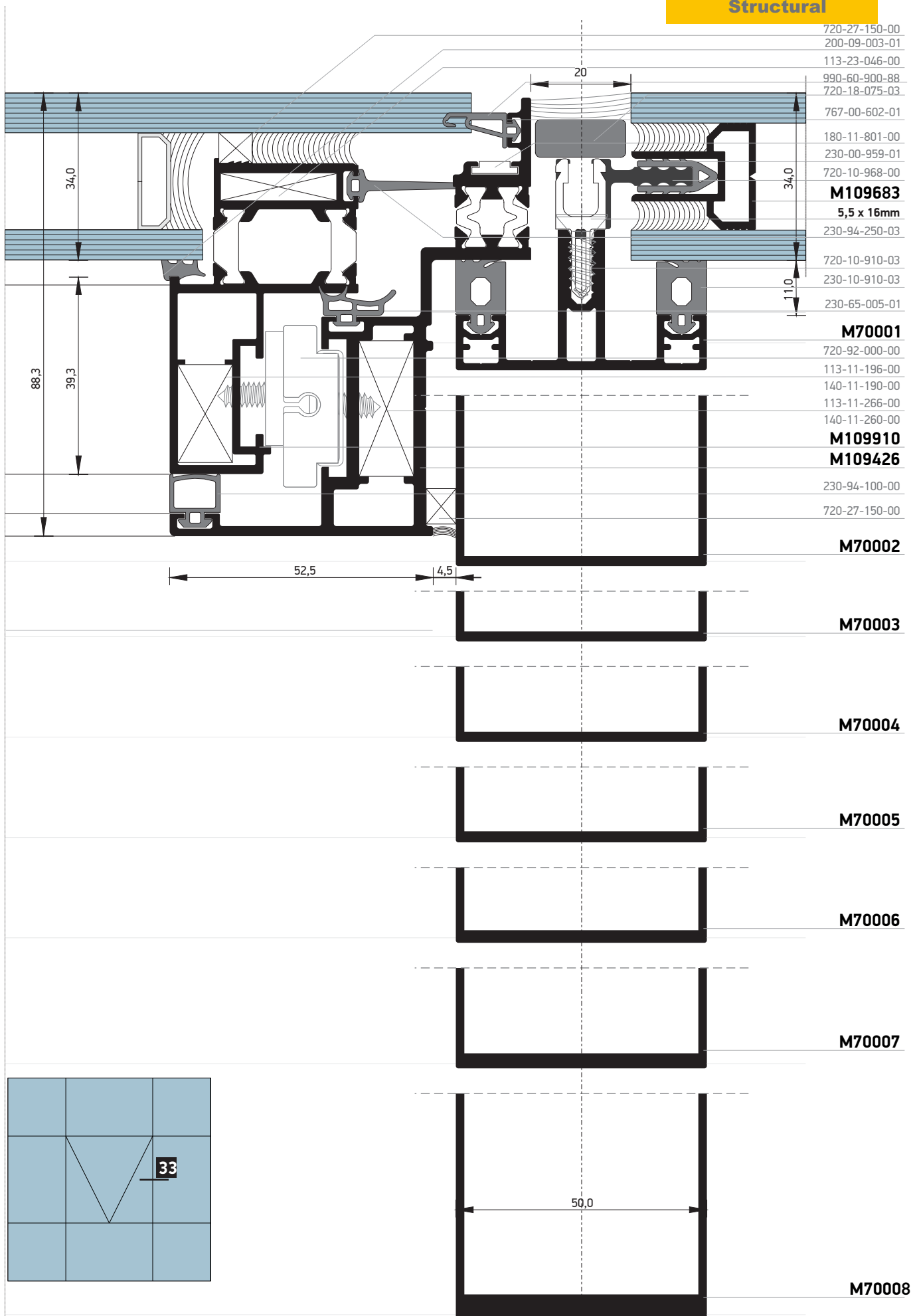


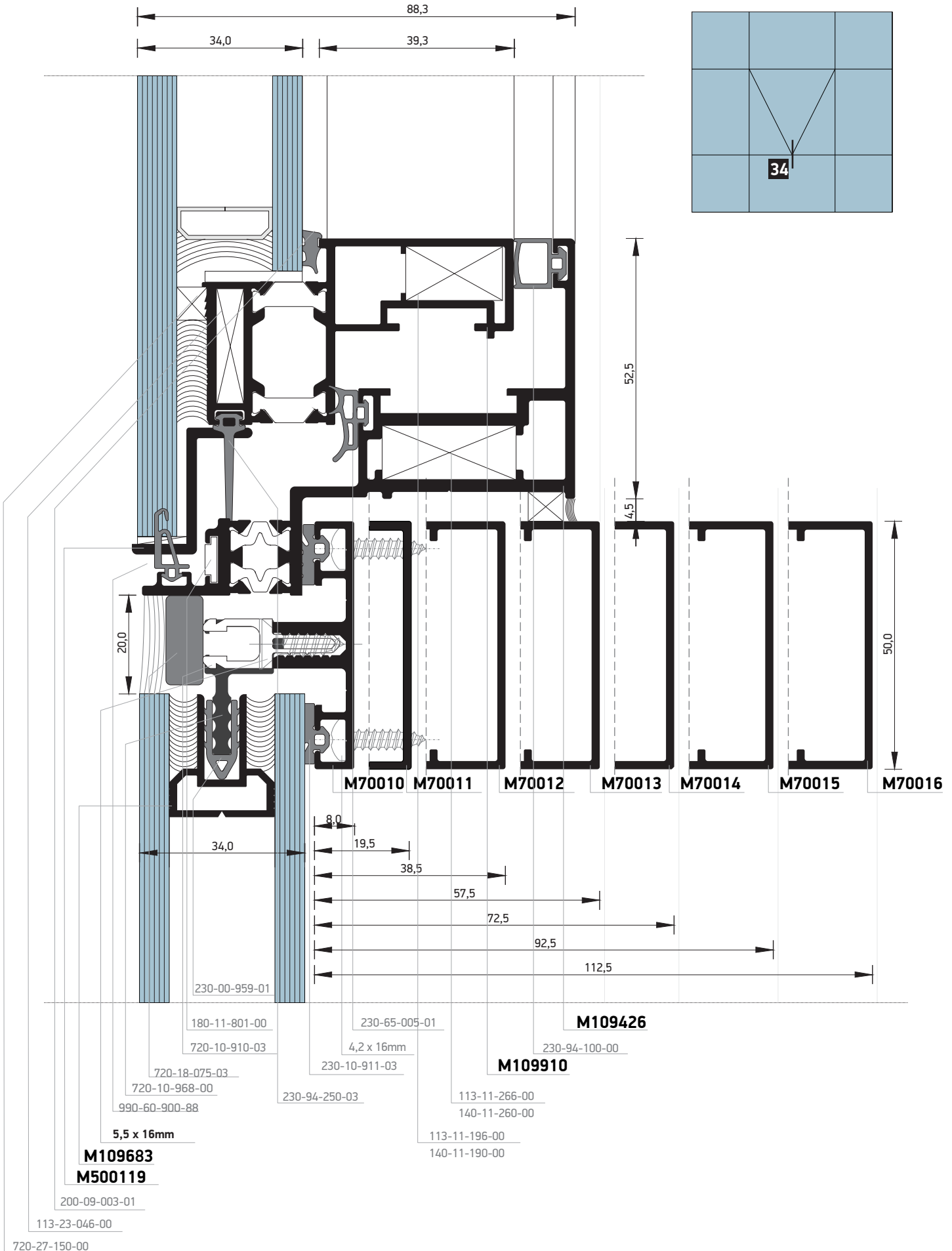
Τομές 1:1 | Section 1:1

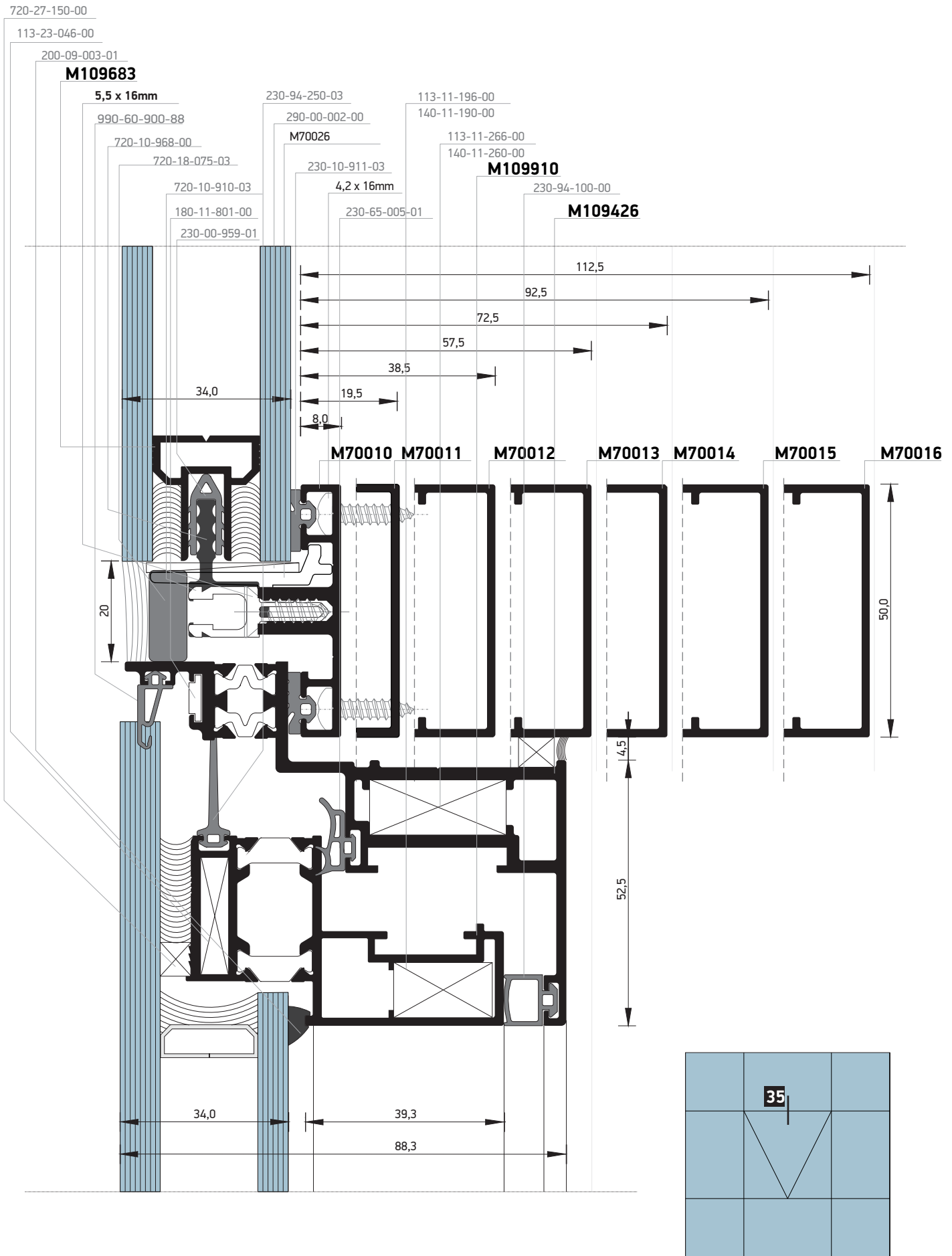


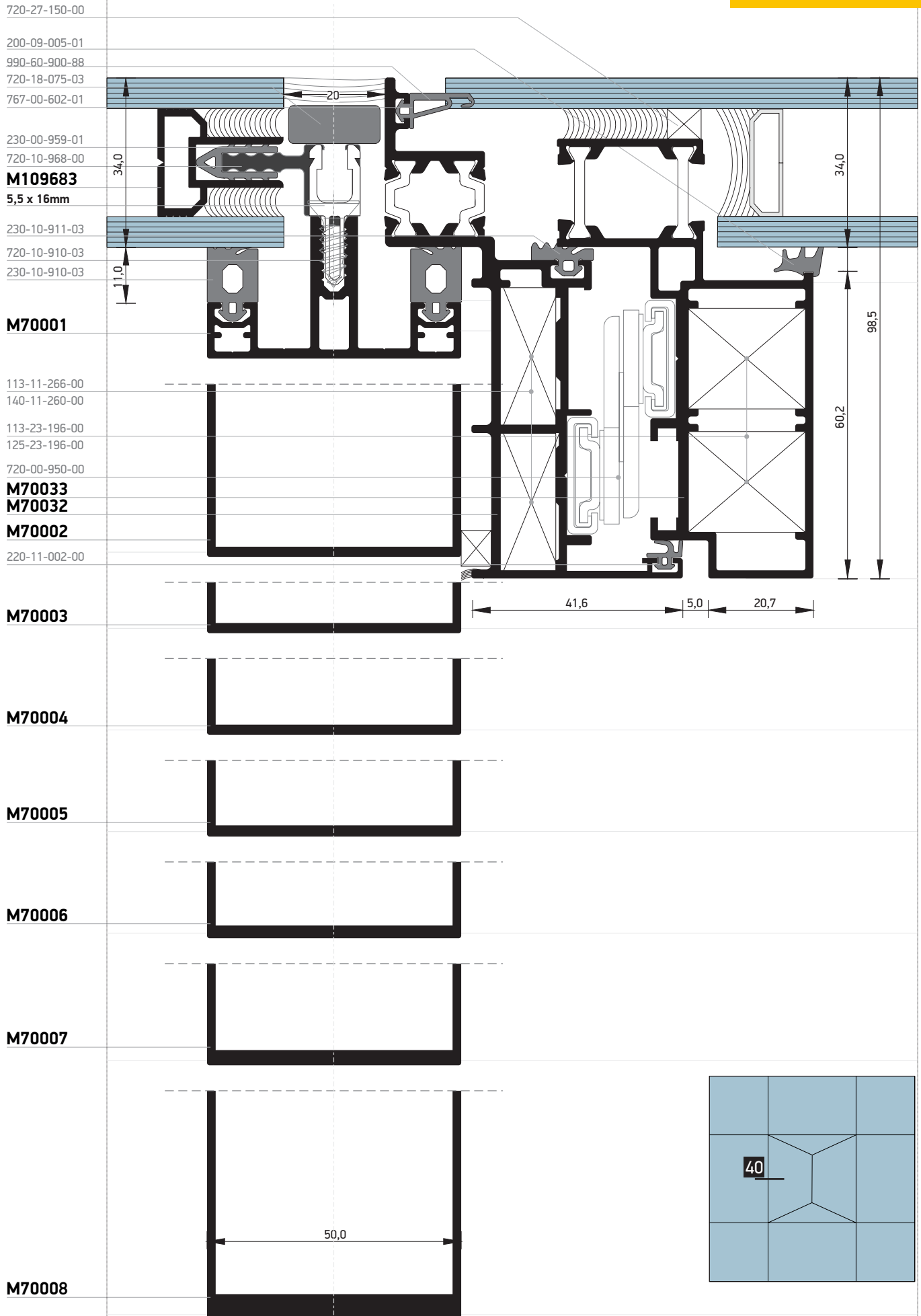


Structural



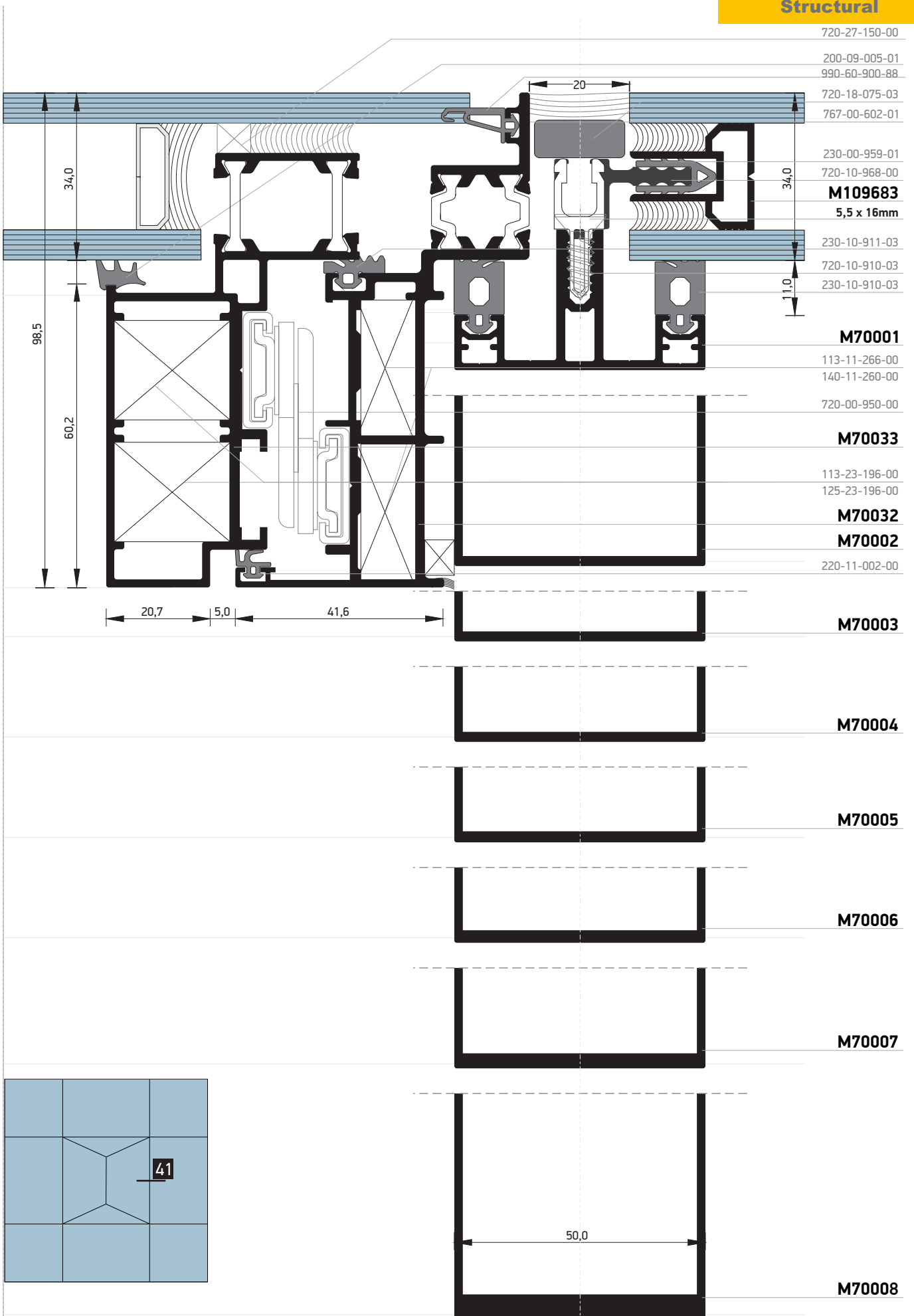


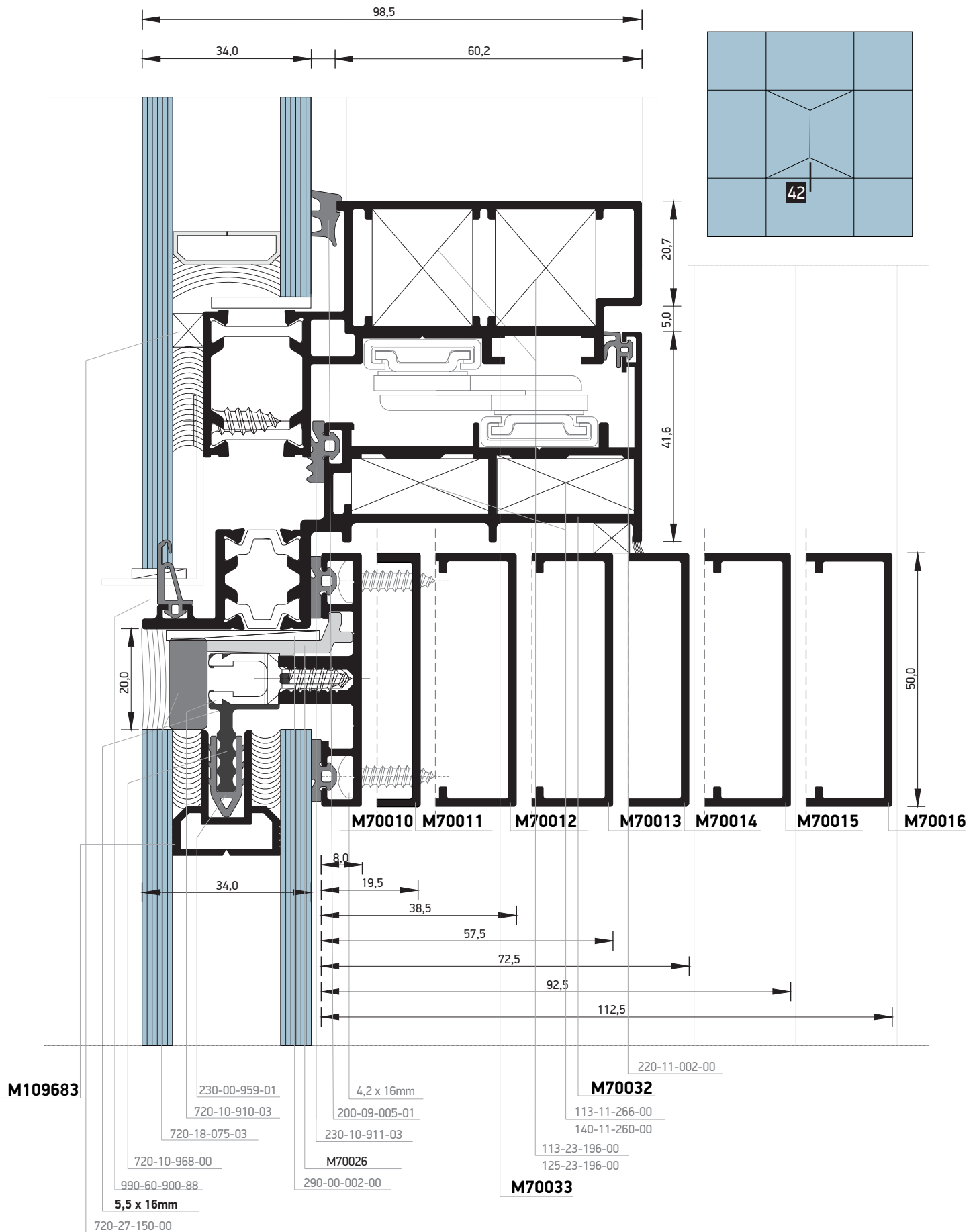


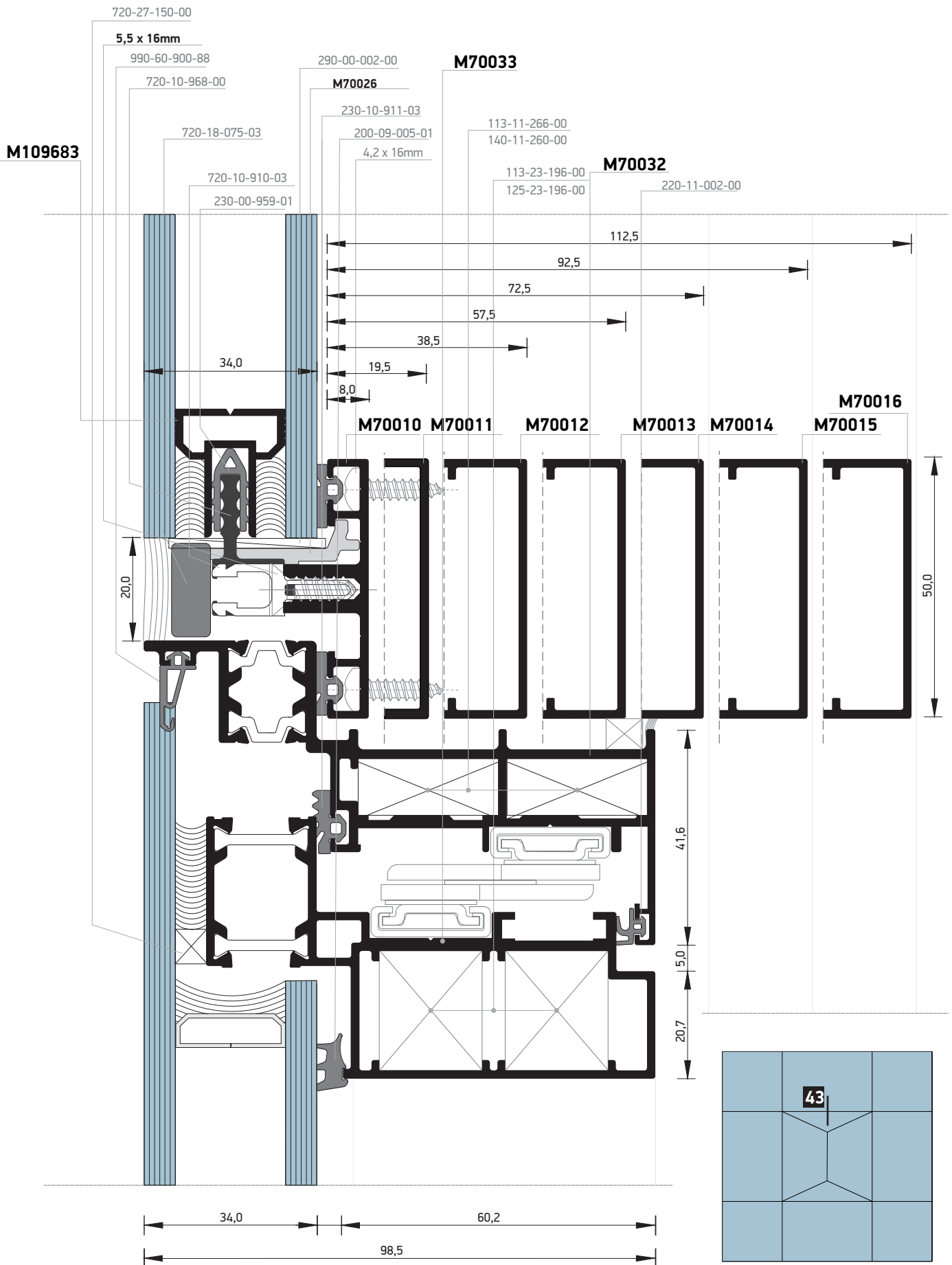


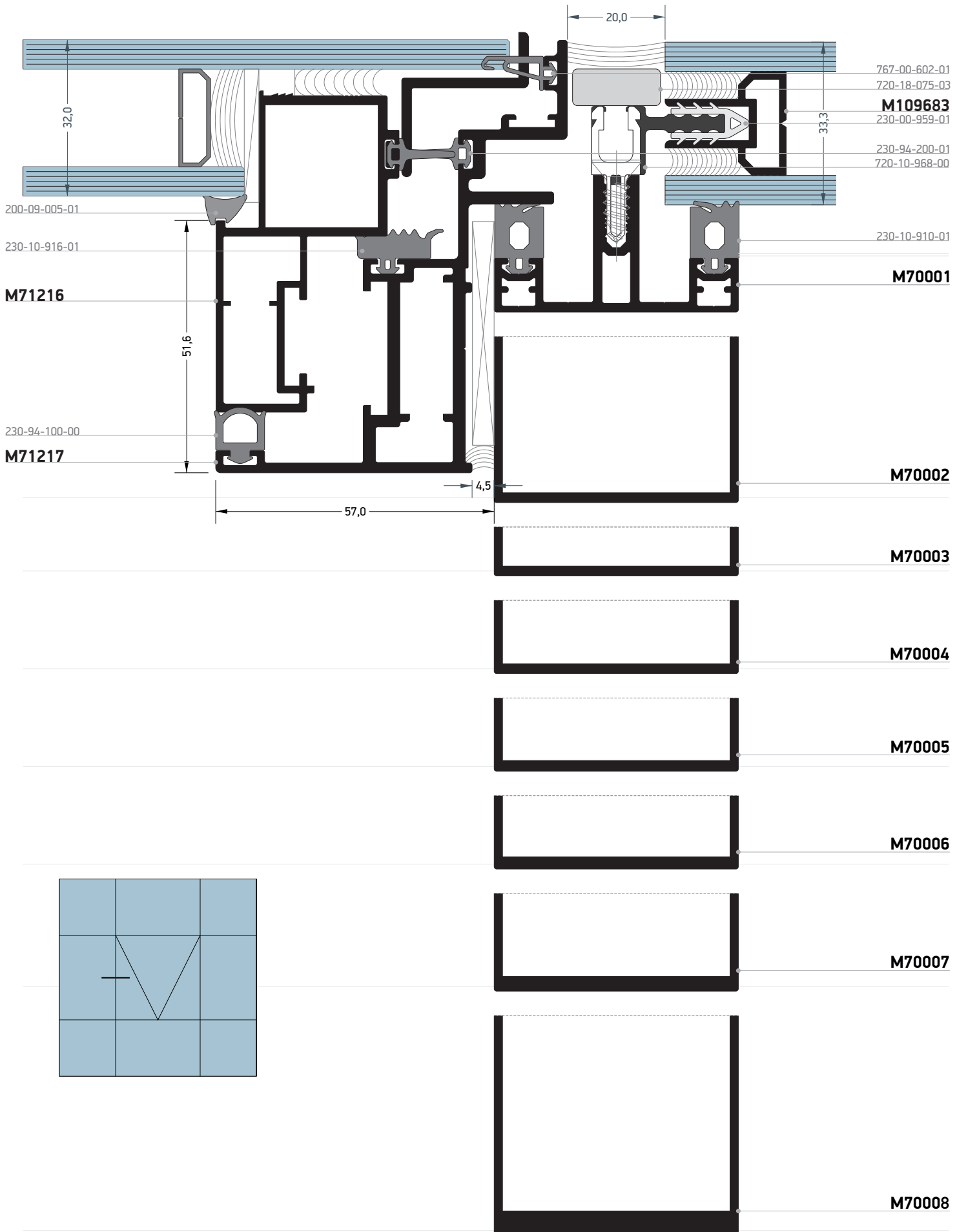
Τομές 1:1 | Section 1:1

Structural

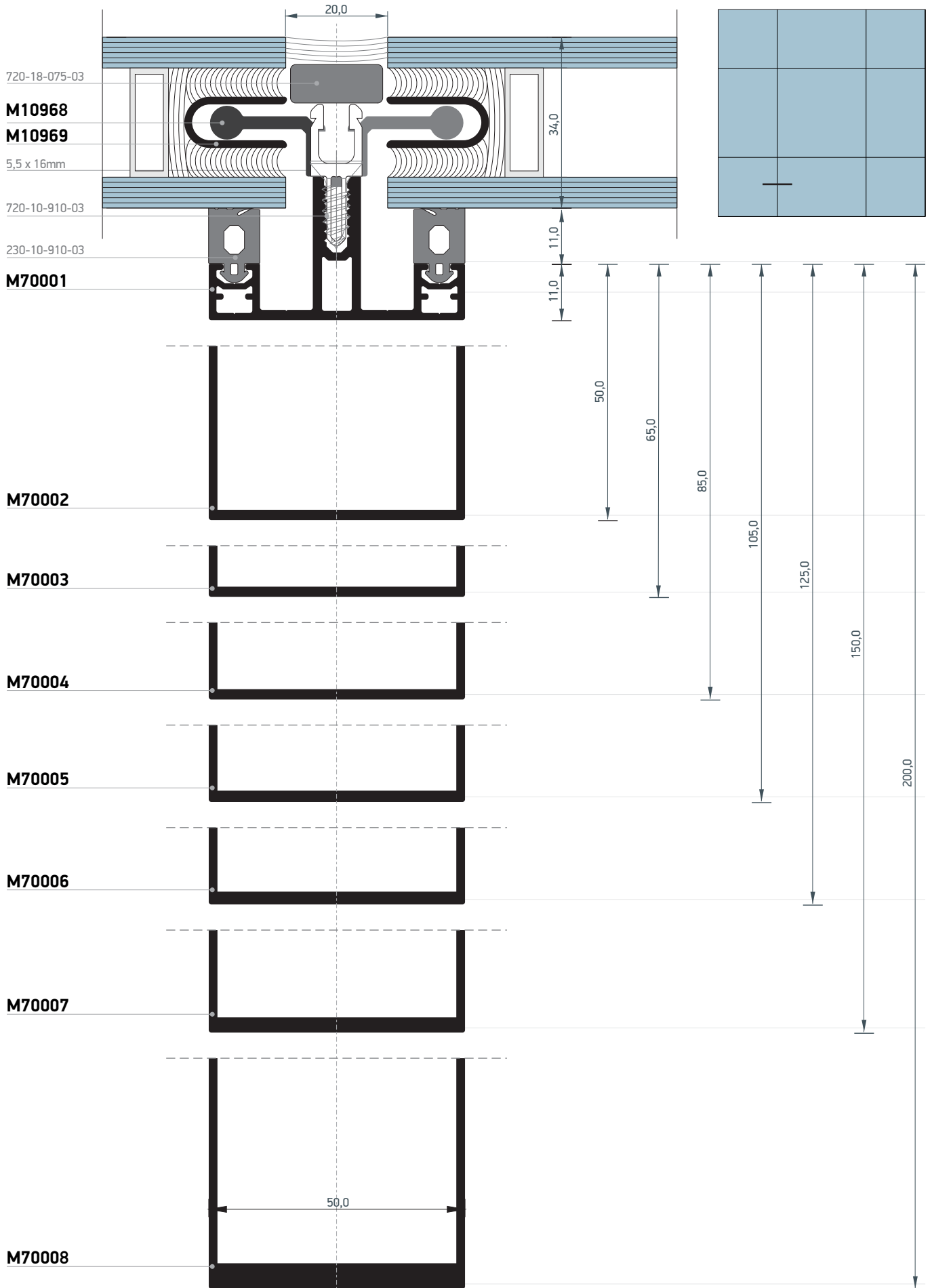




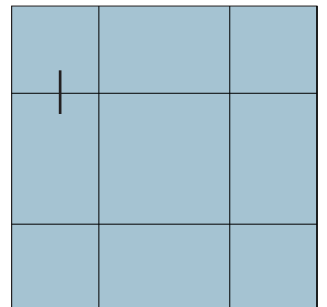
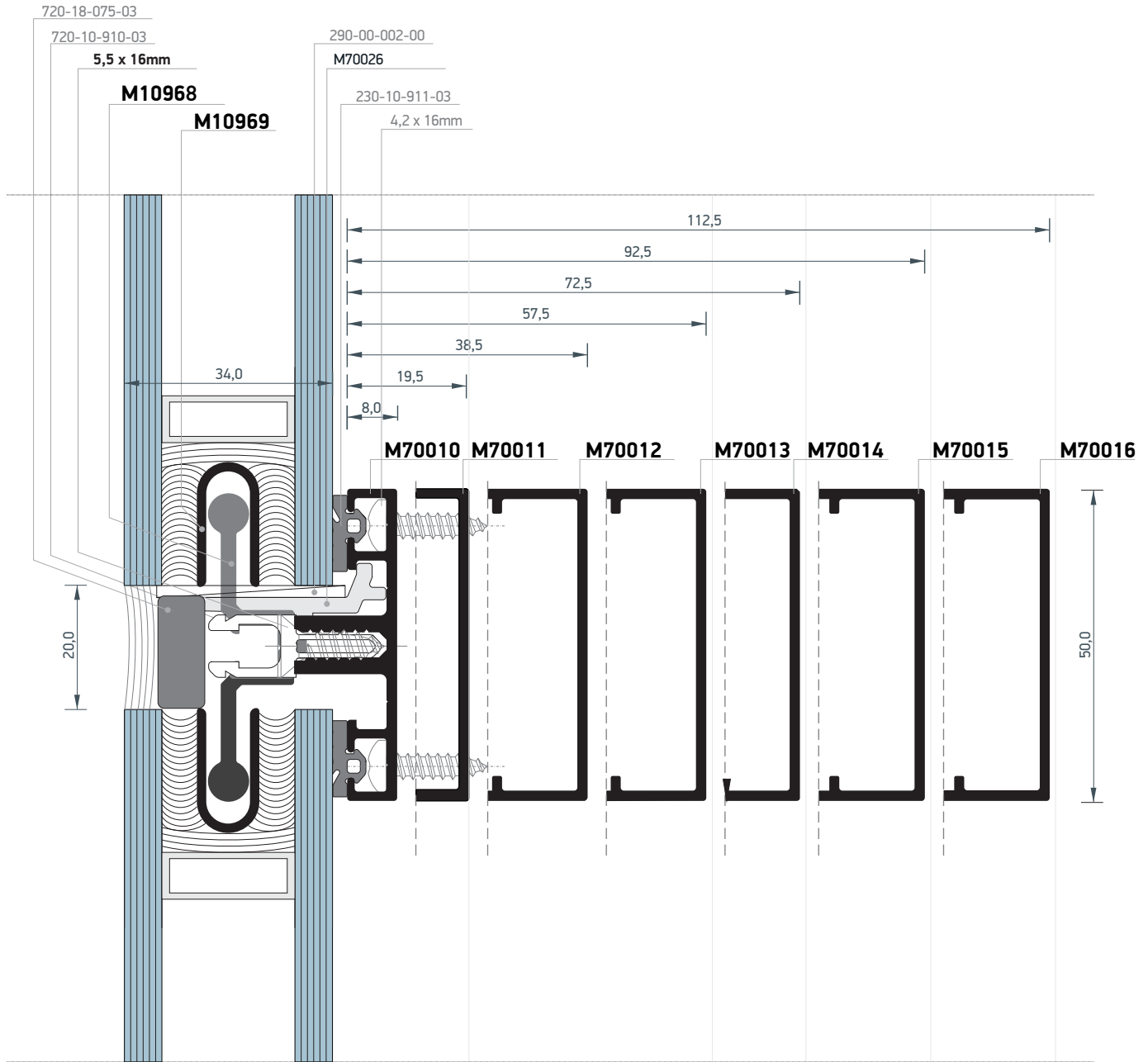


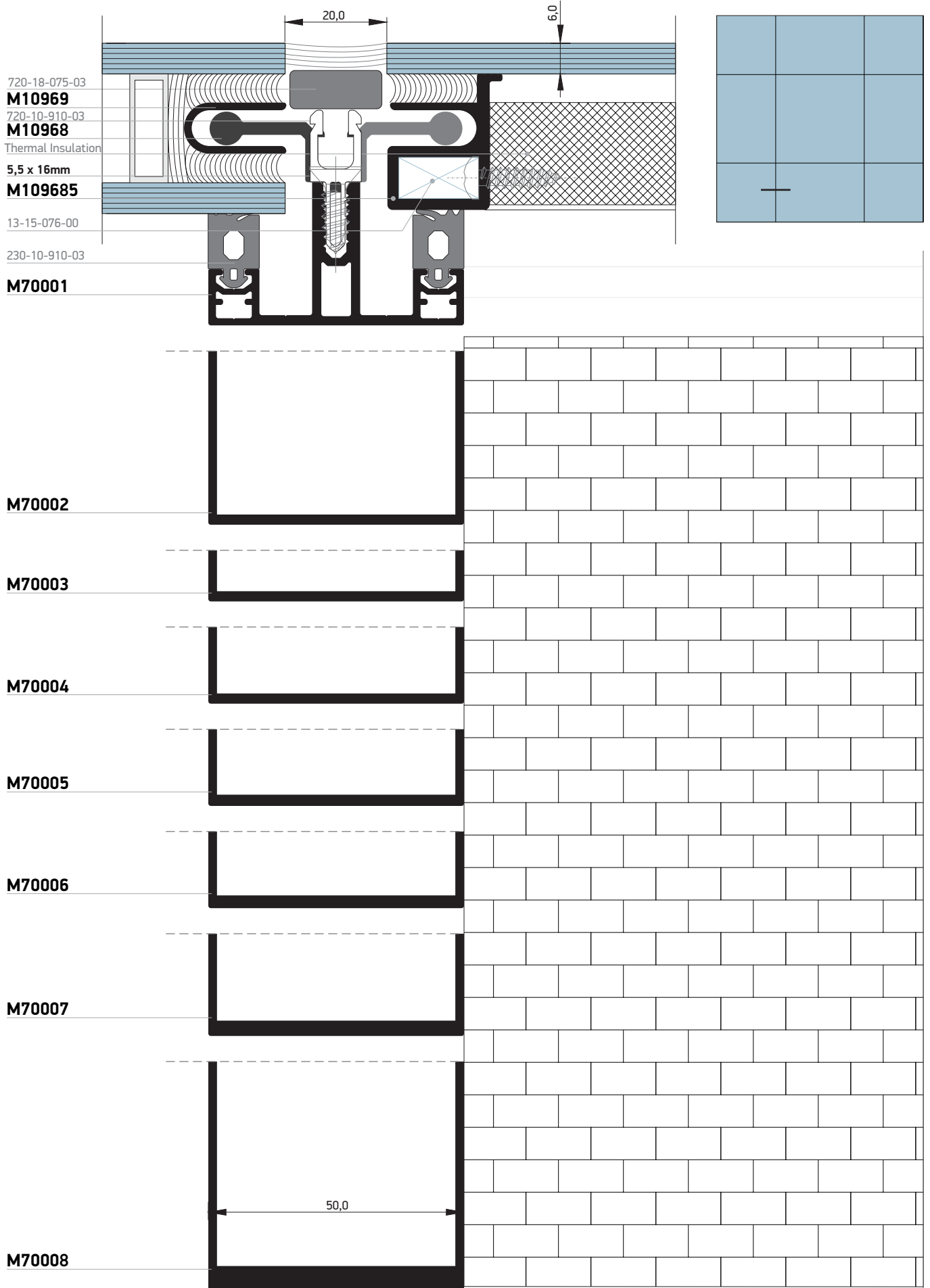


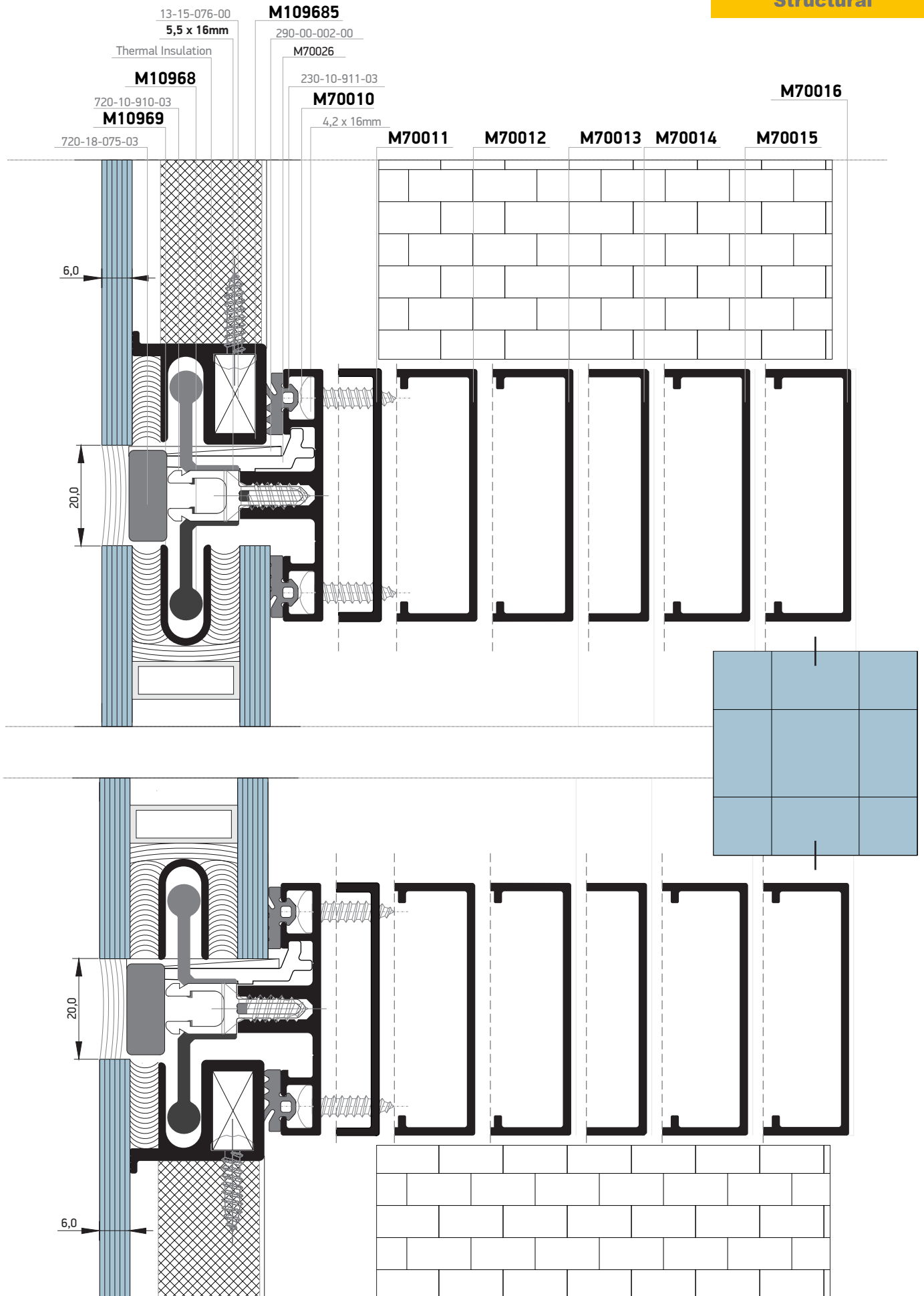


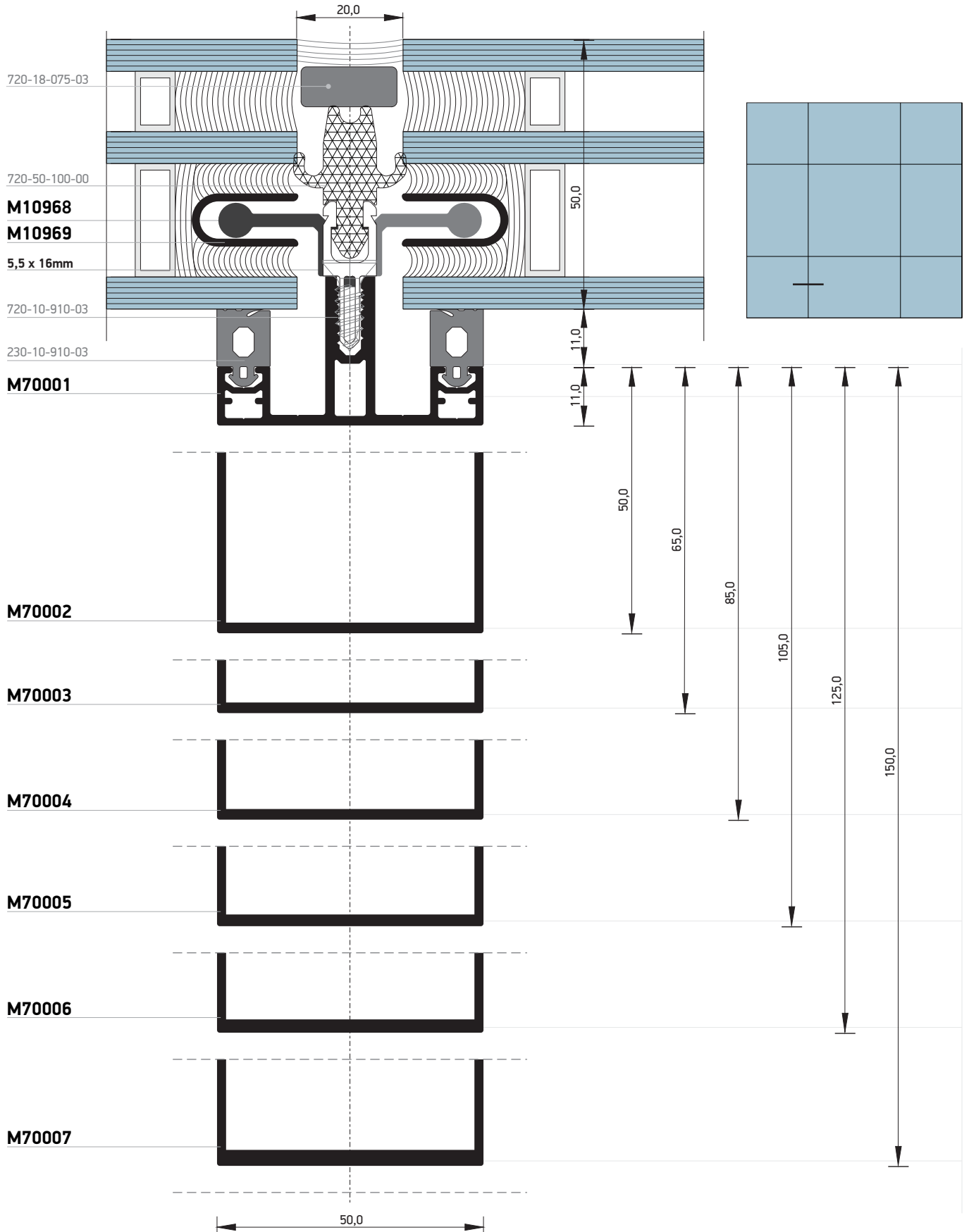


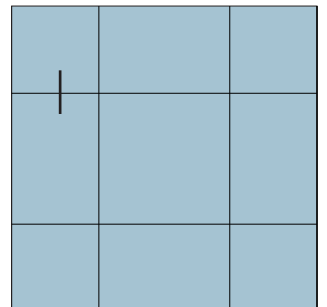
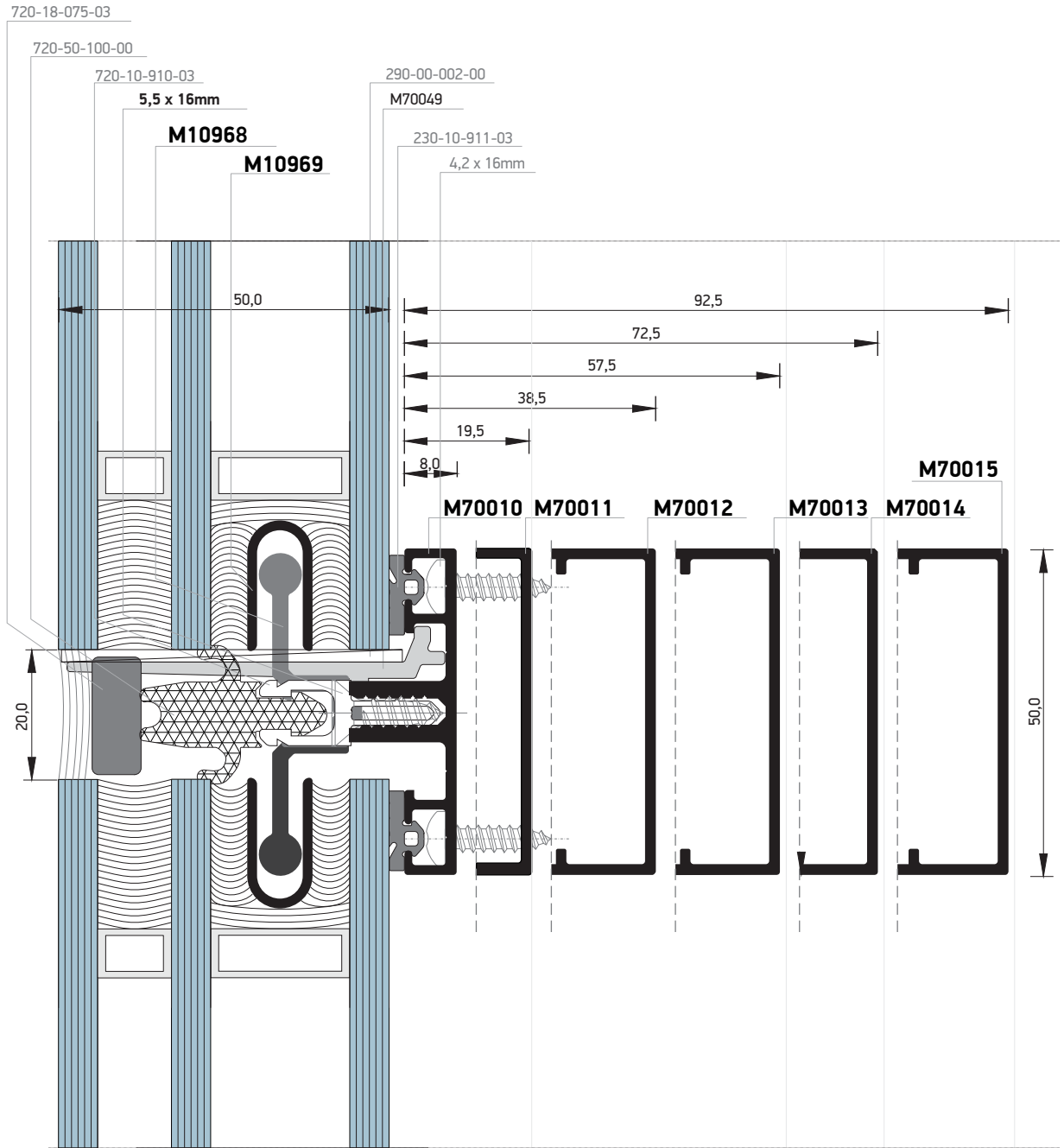
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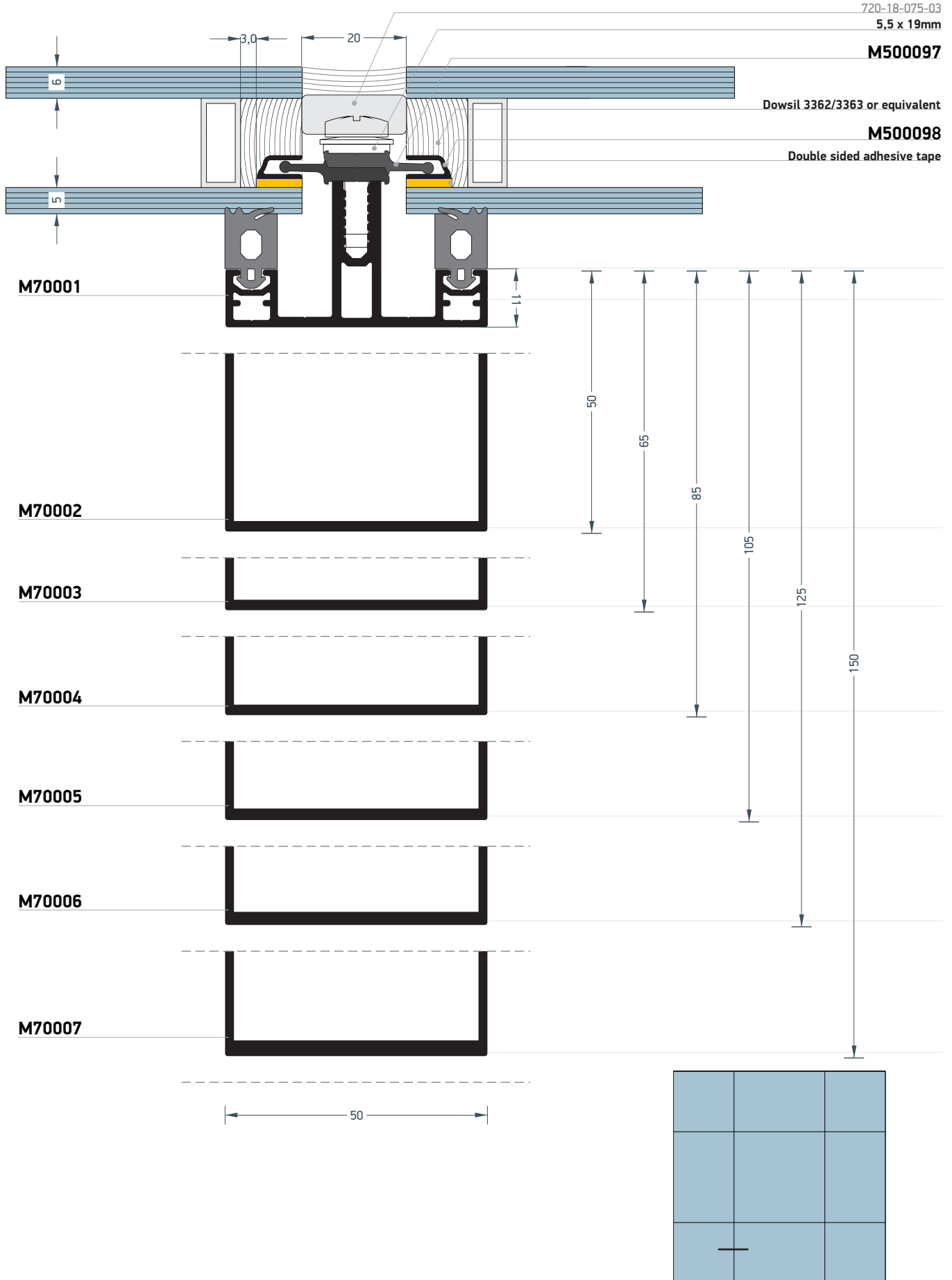


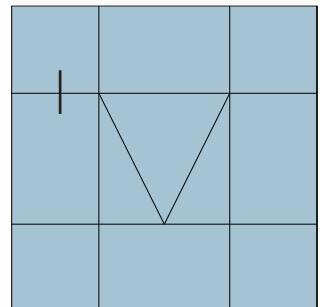
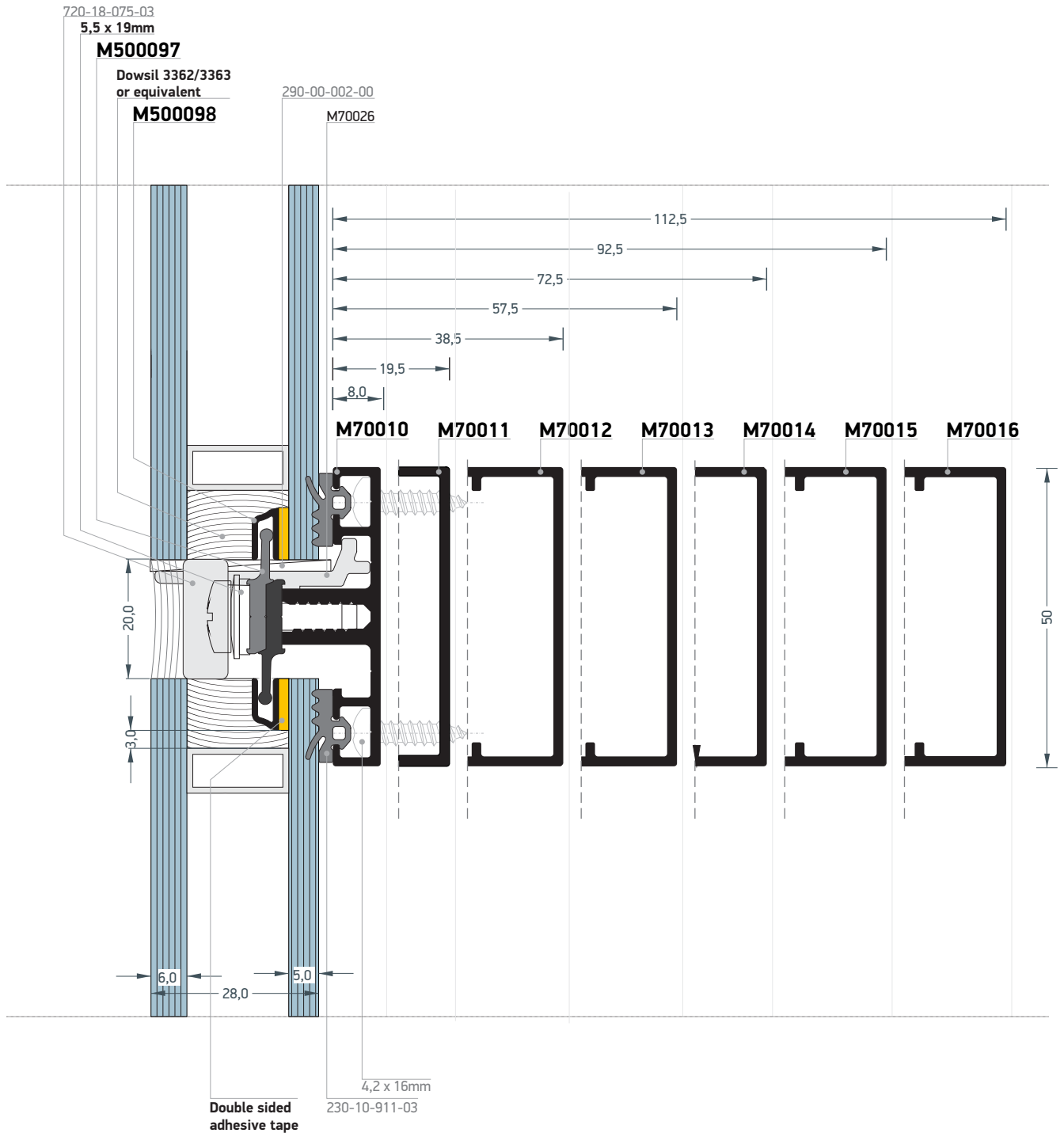


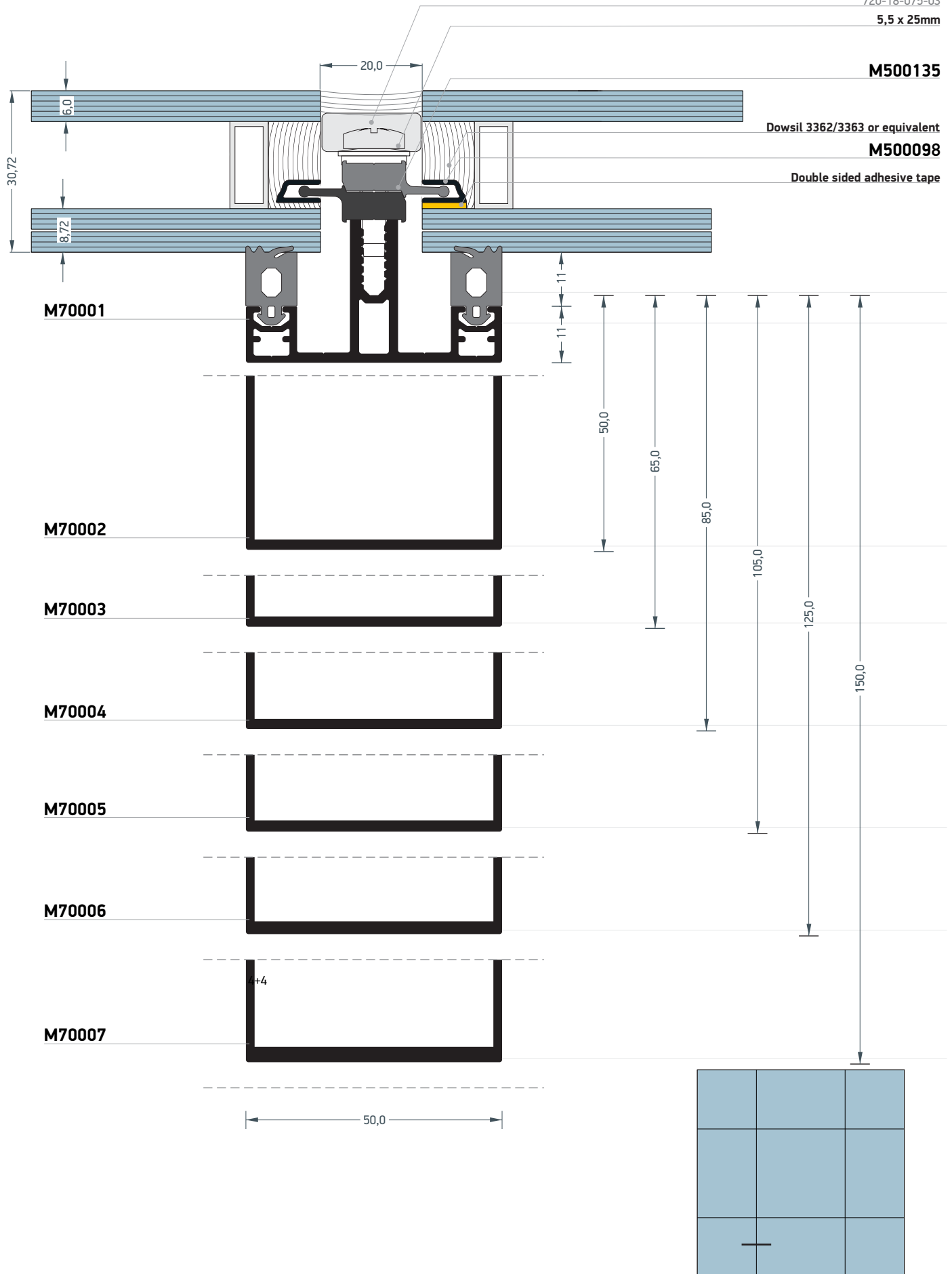


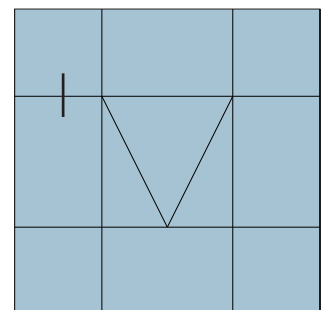
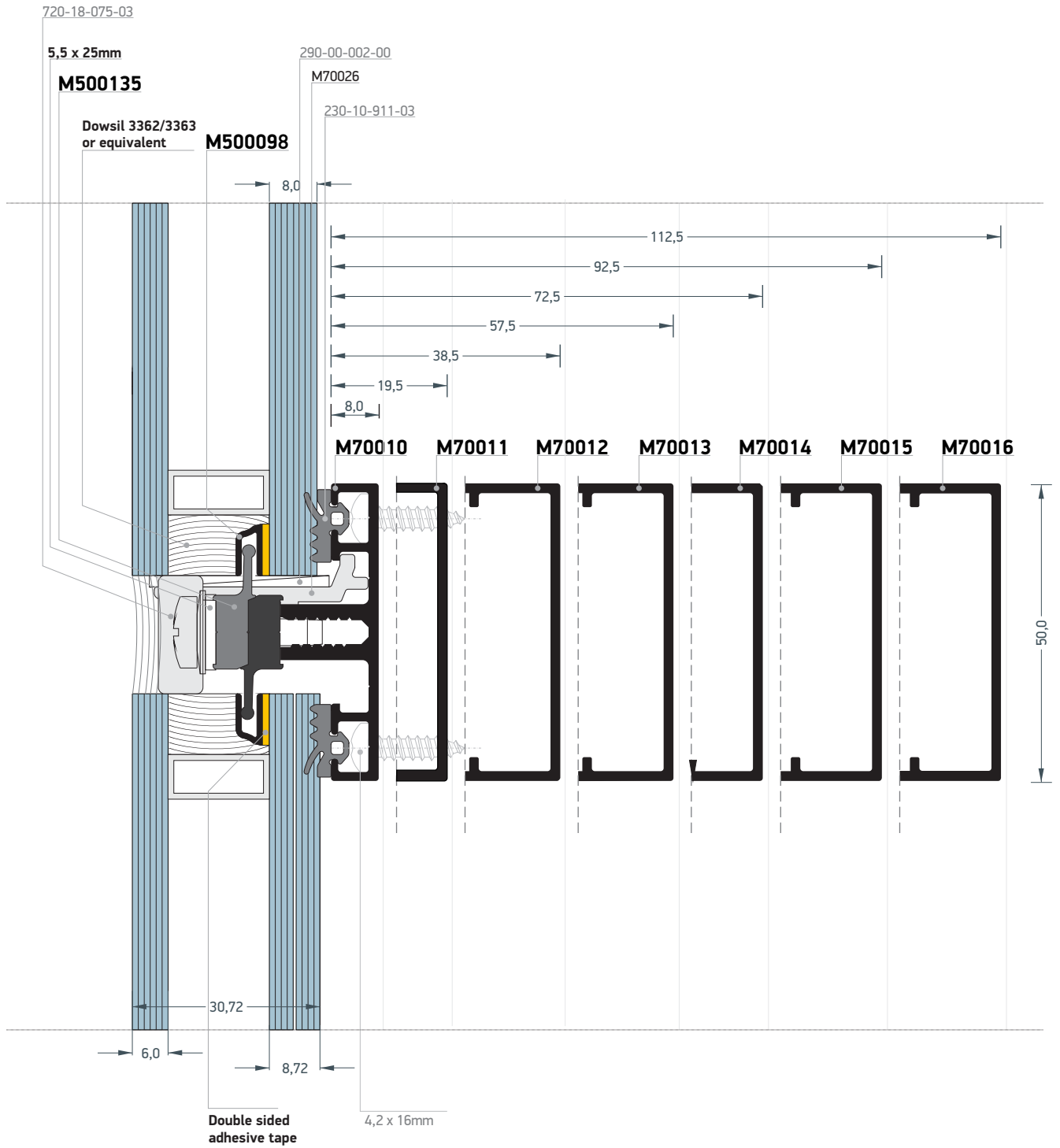


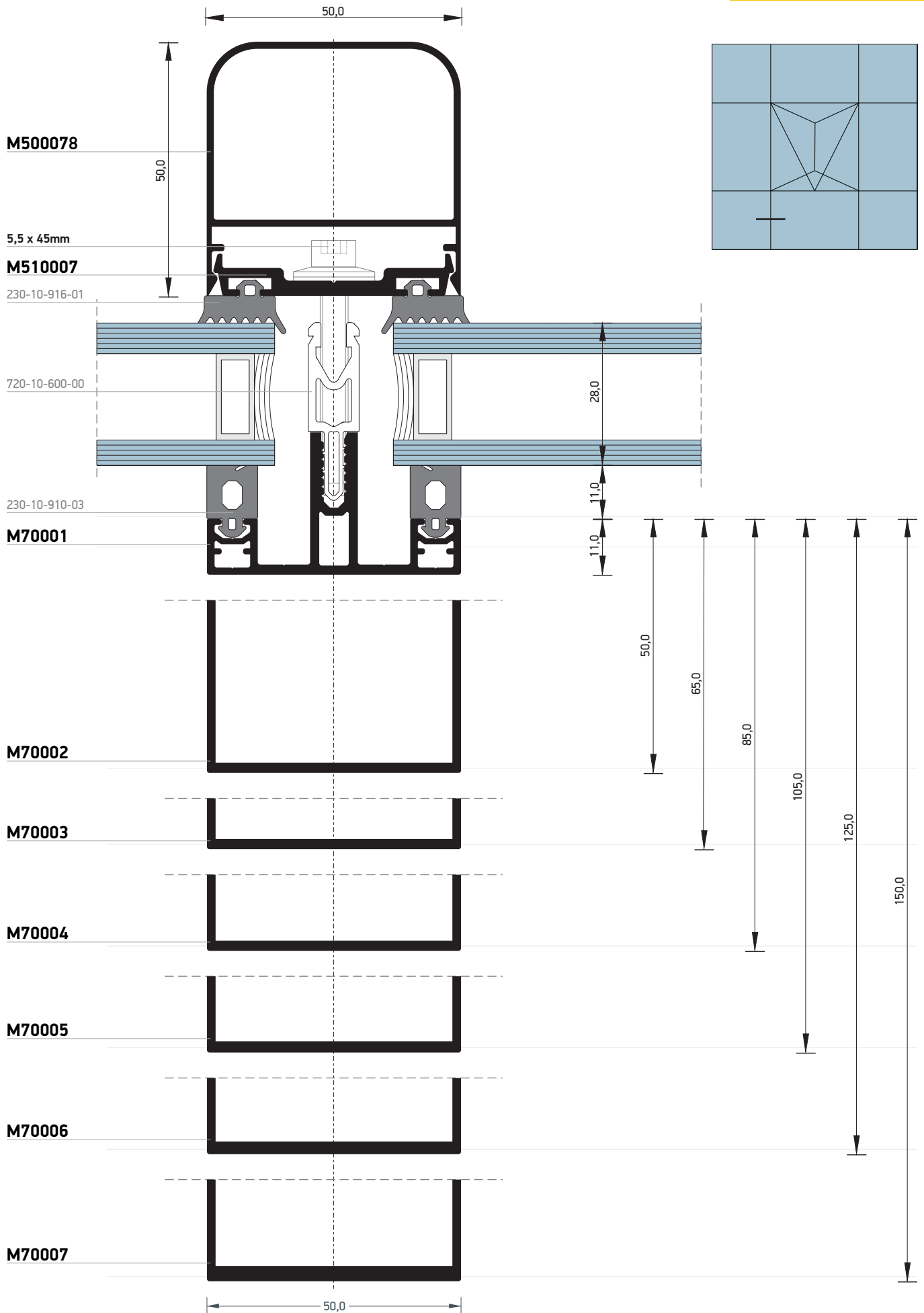




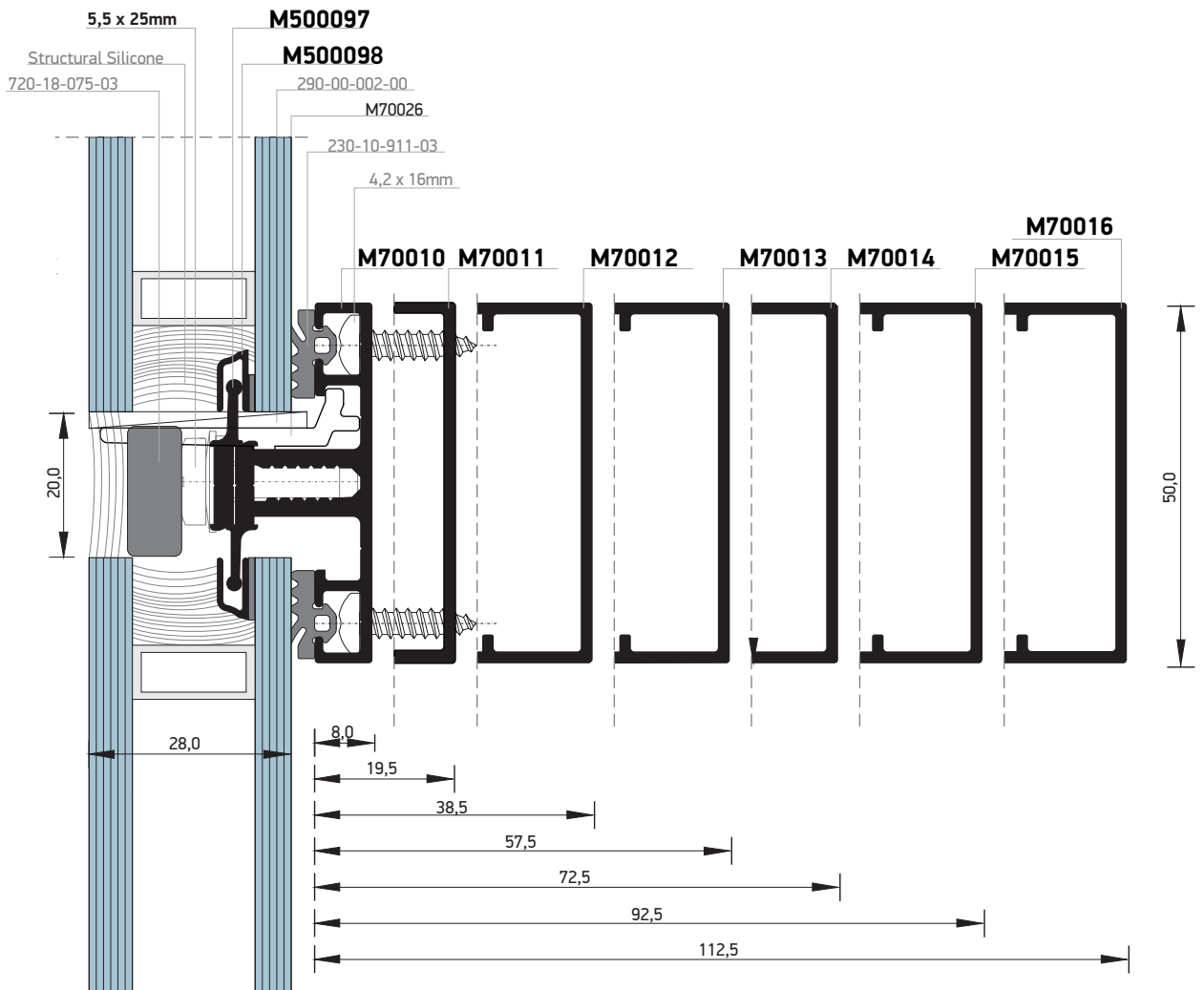
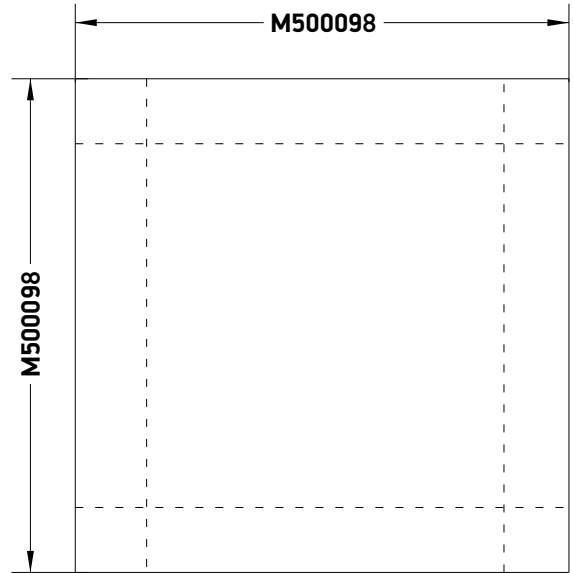
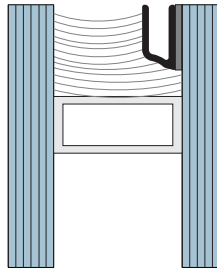
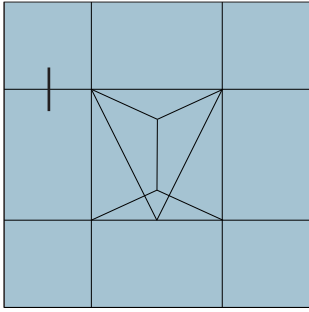


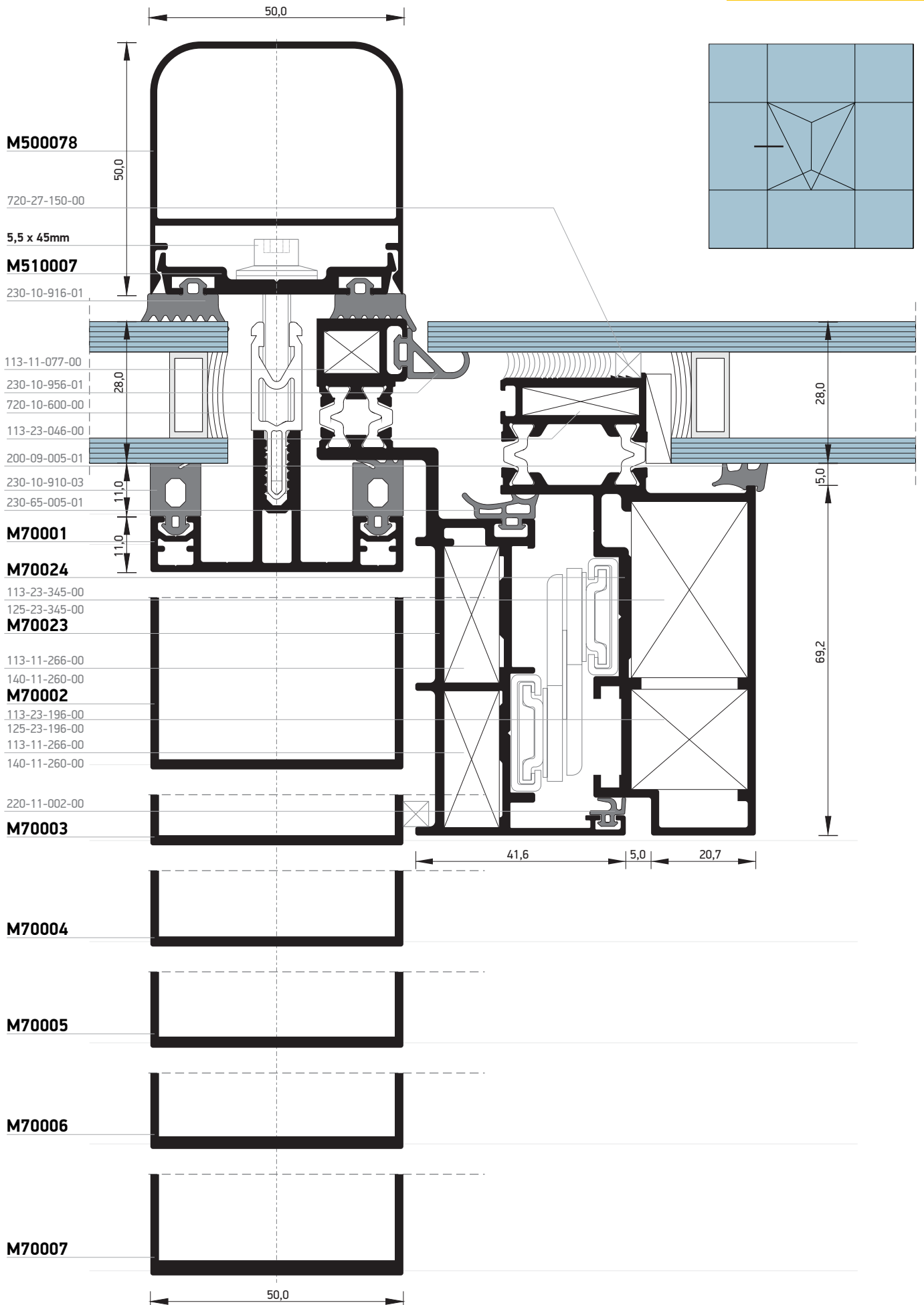


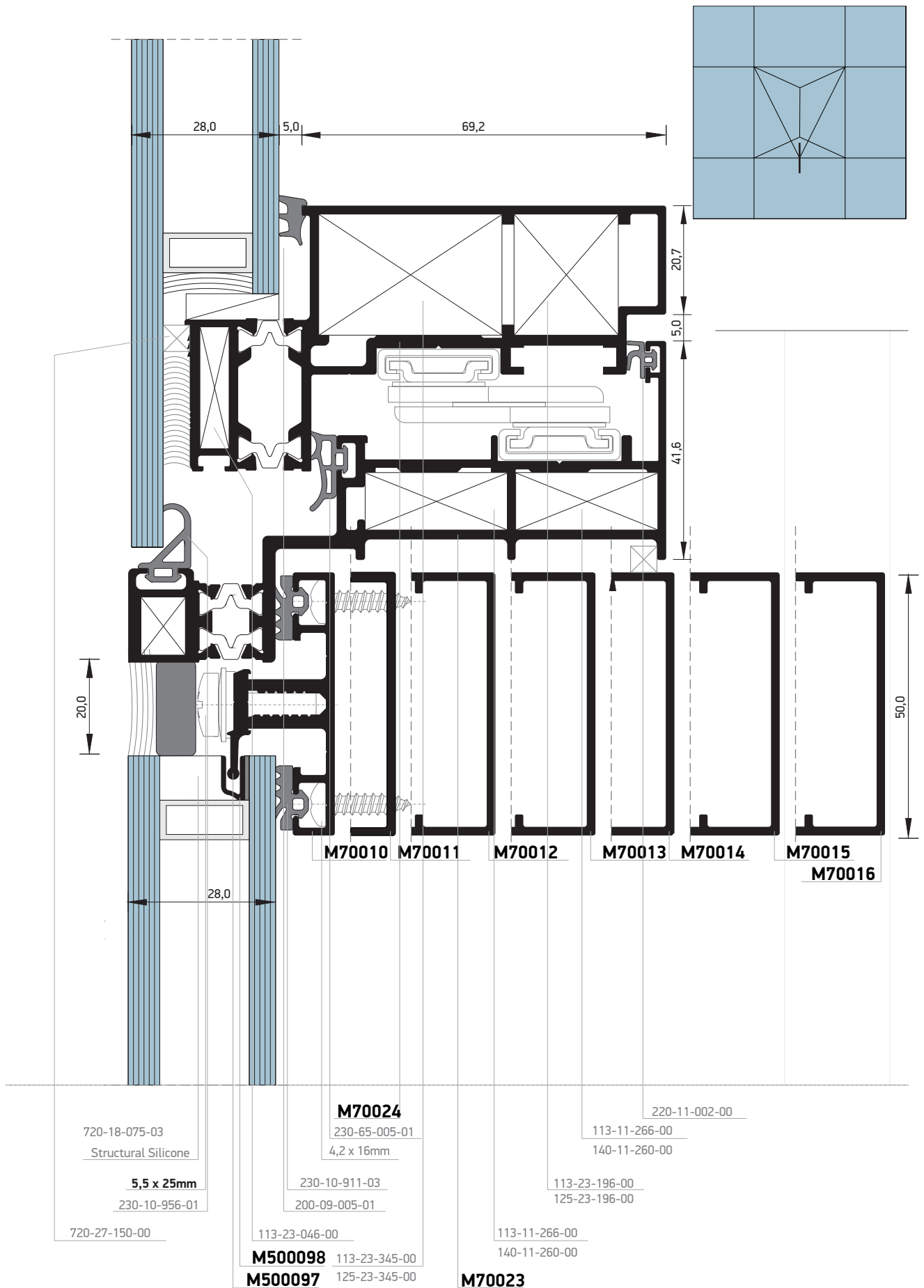


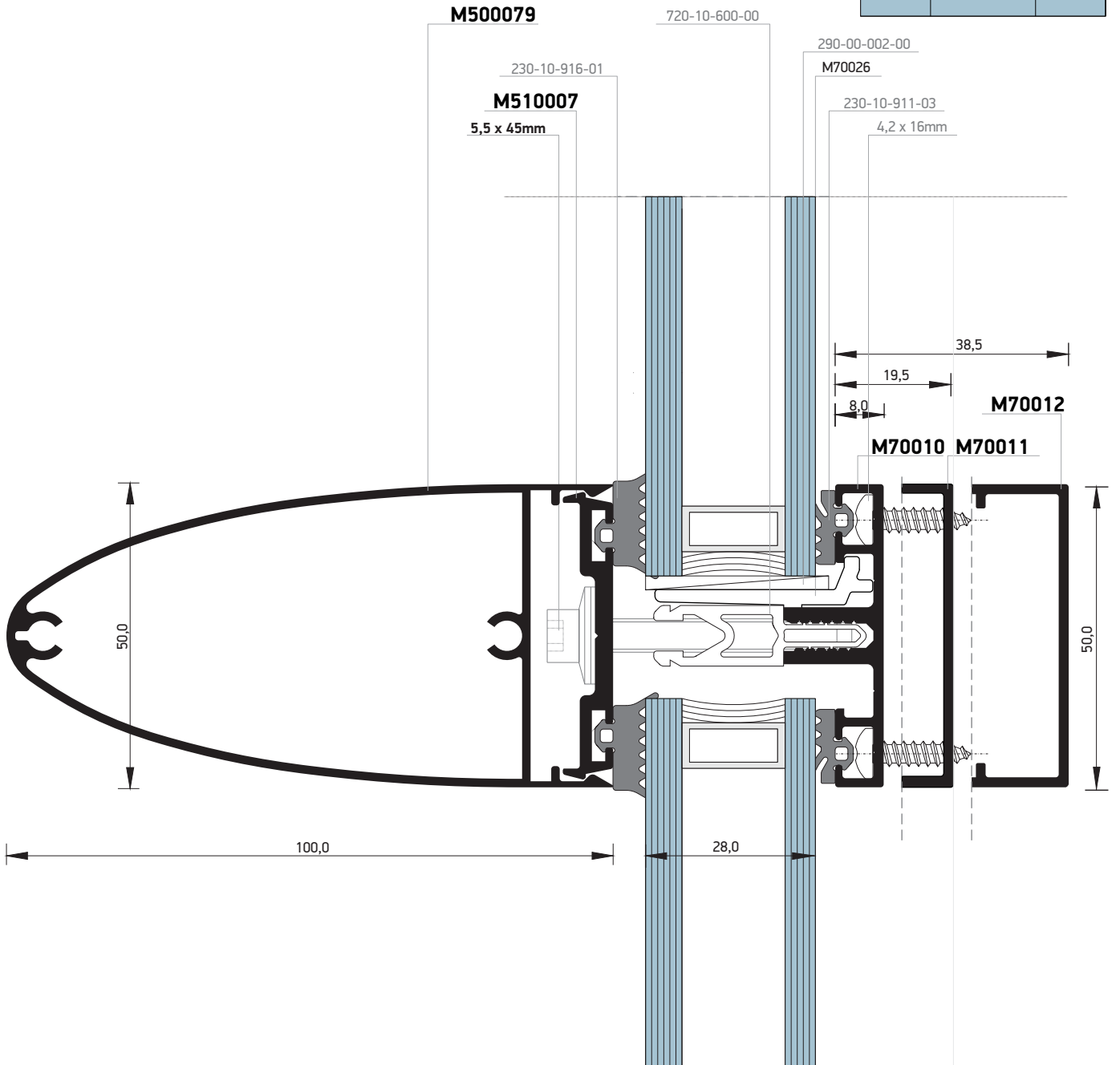
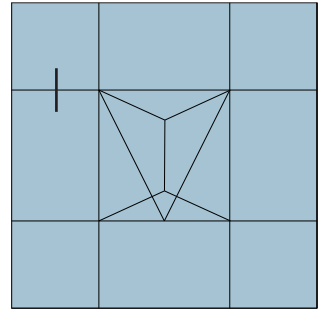


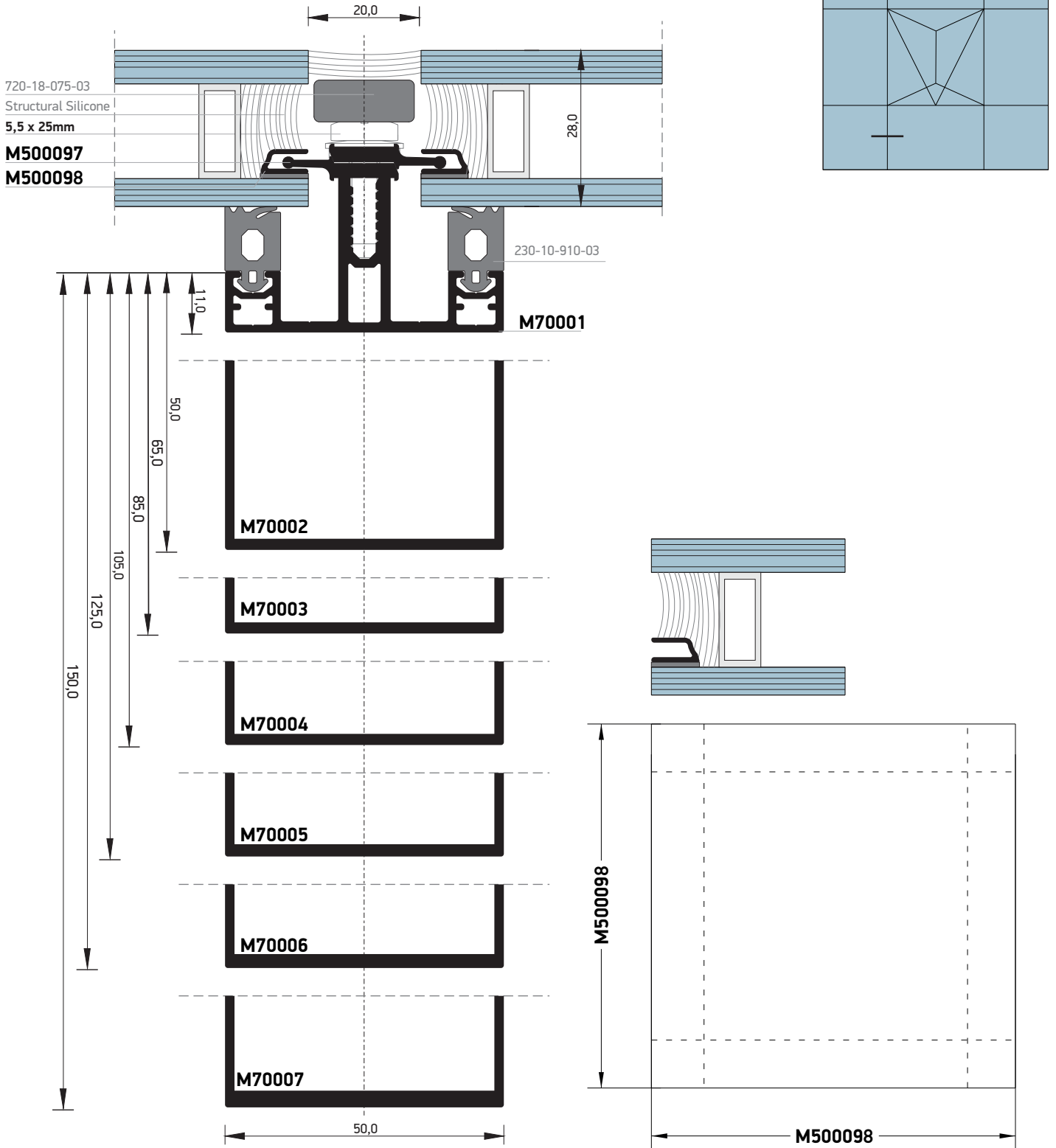
Τομές 1:1 | Section 1:1

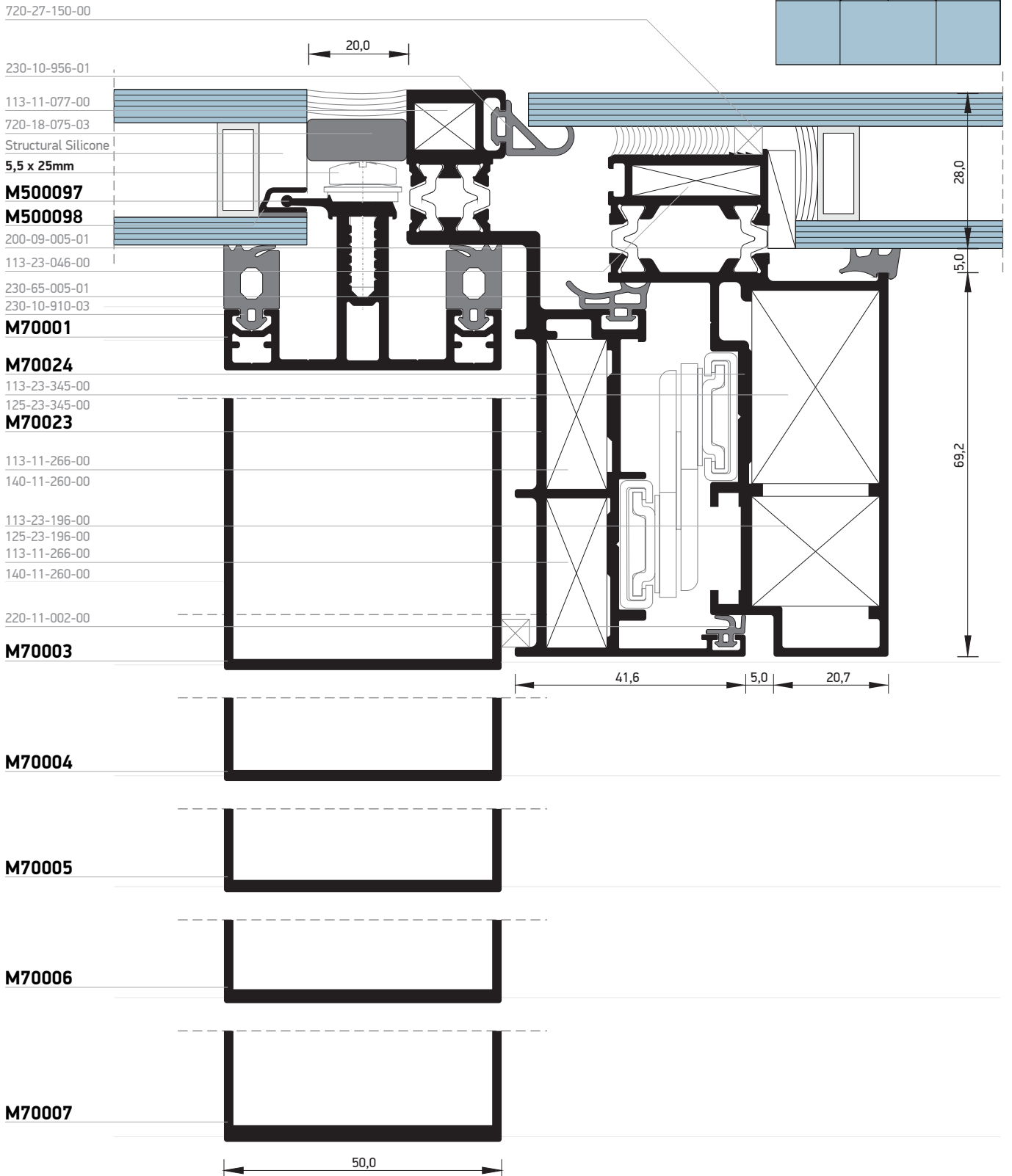
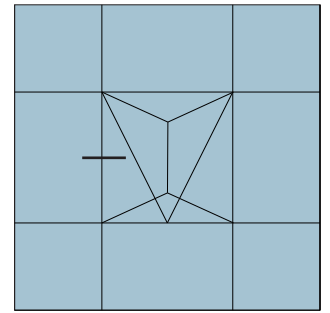


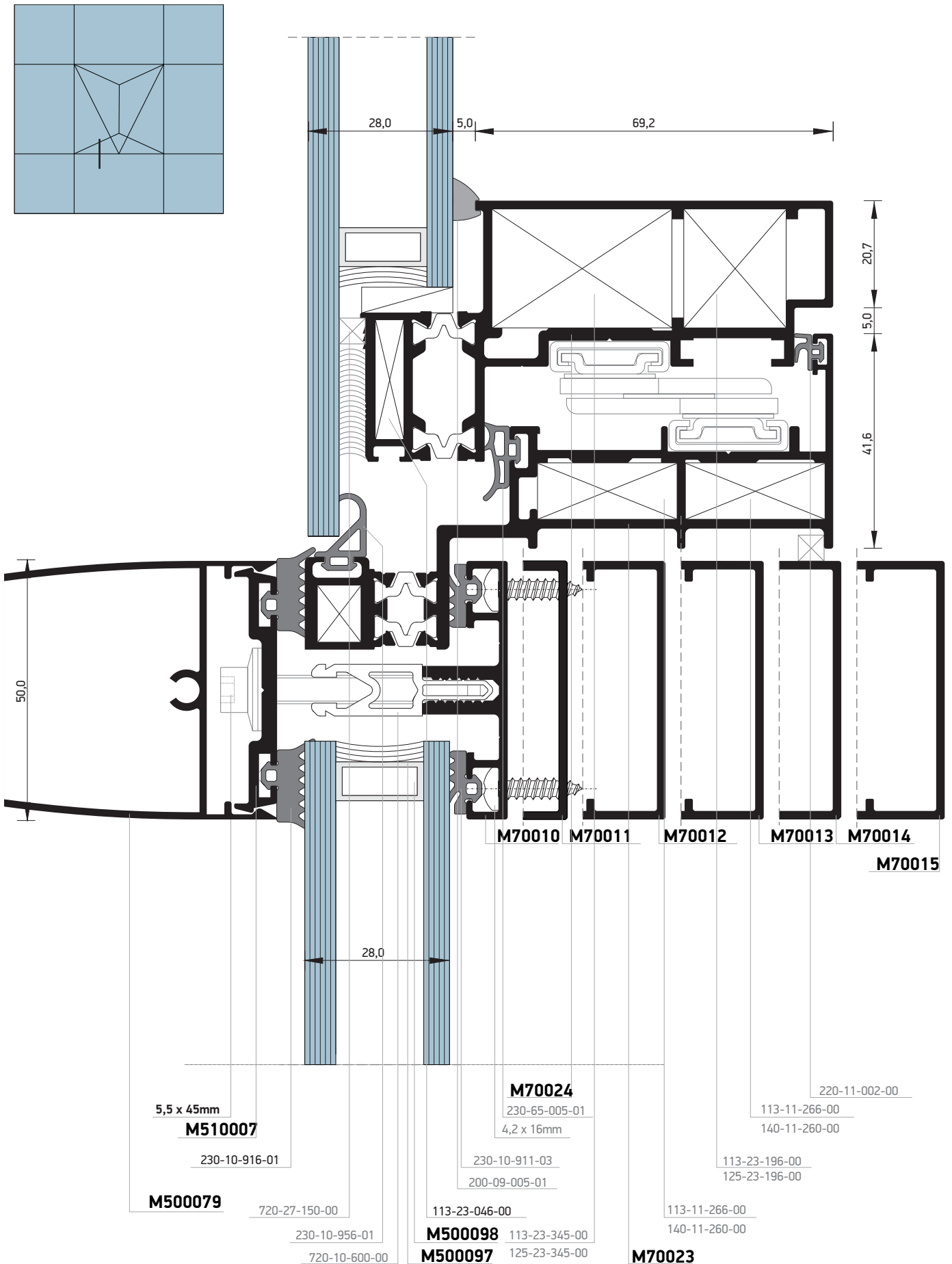


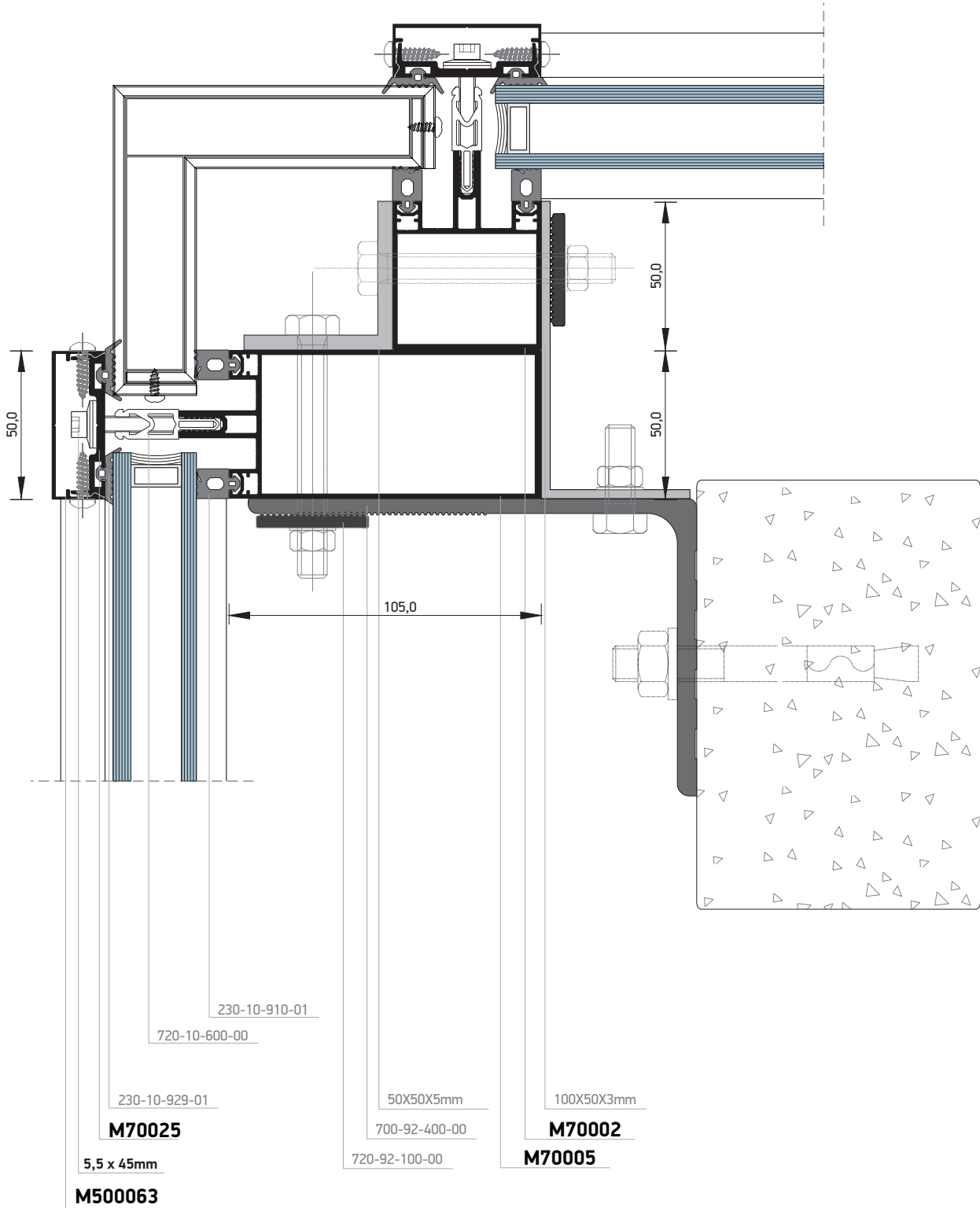


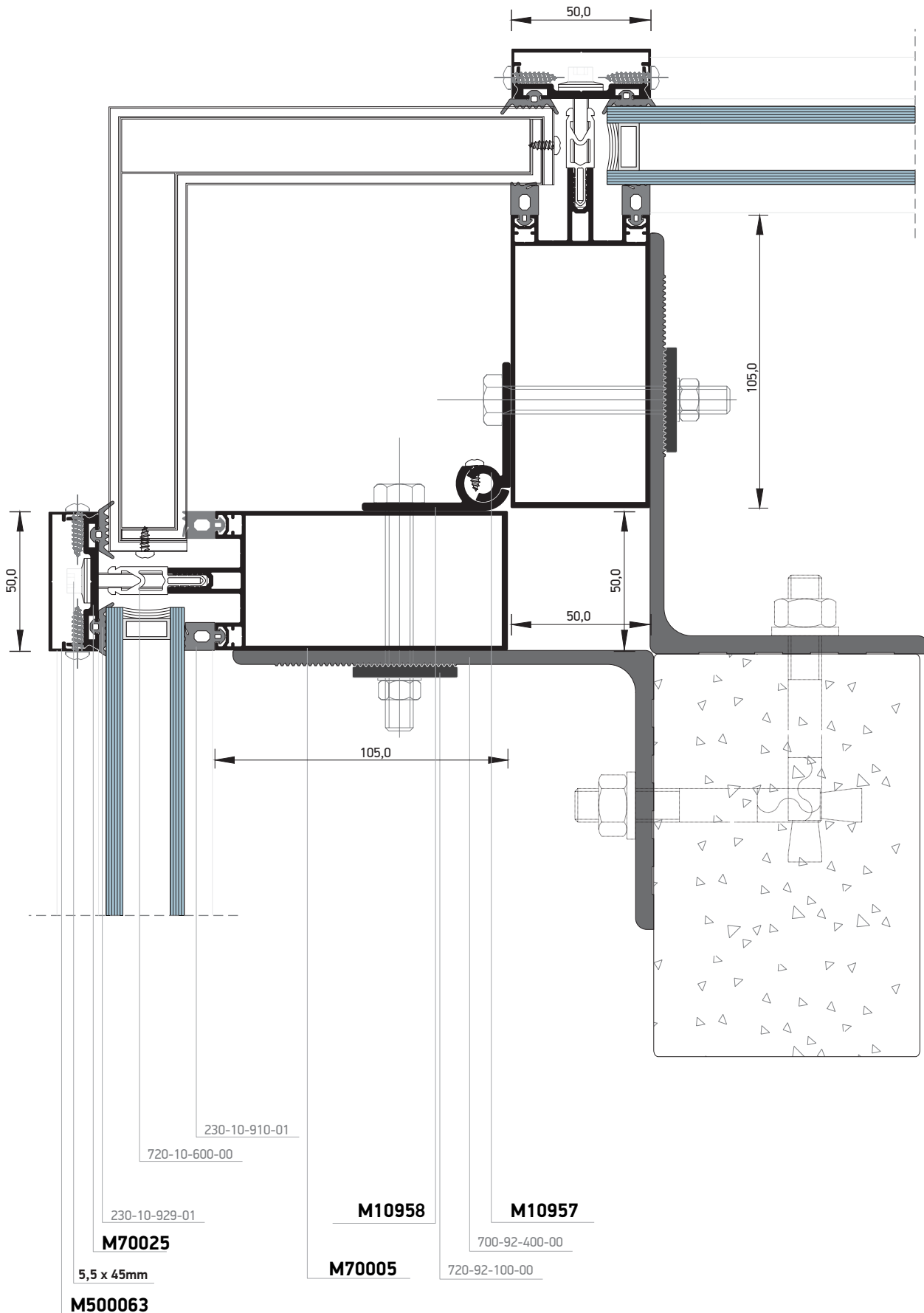


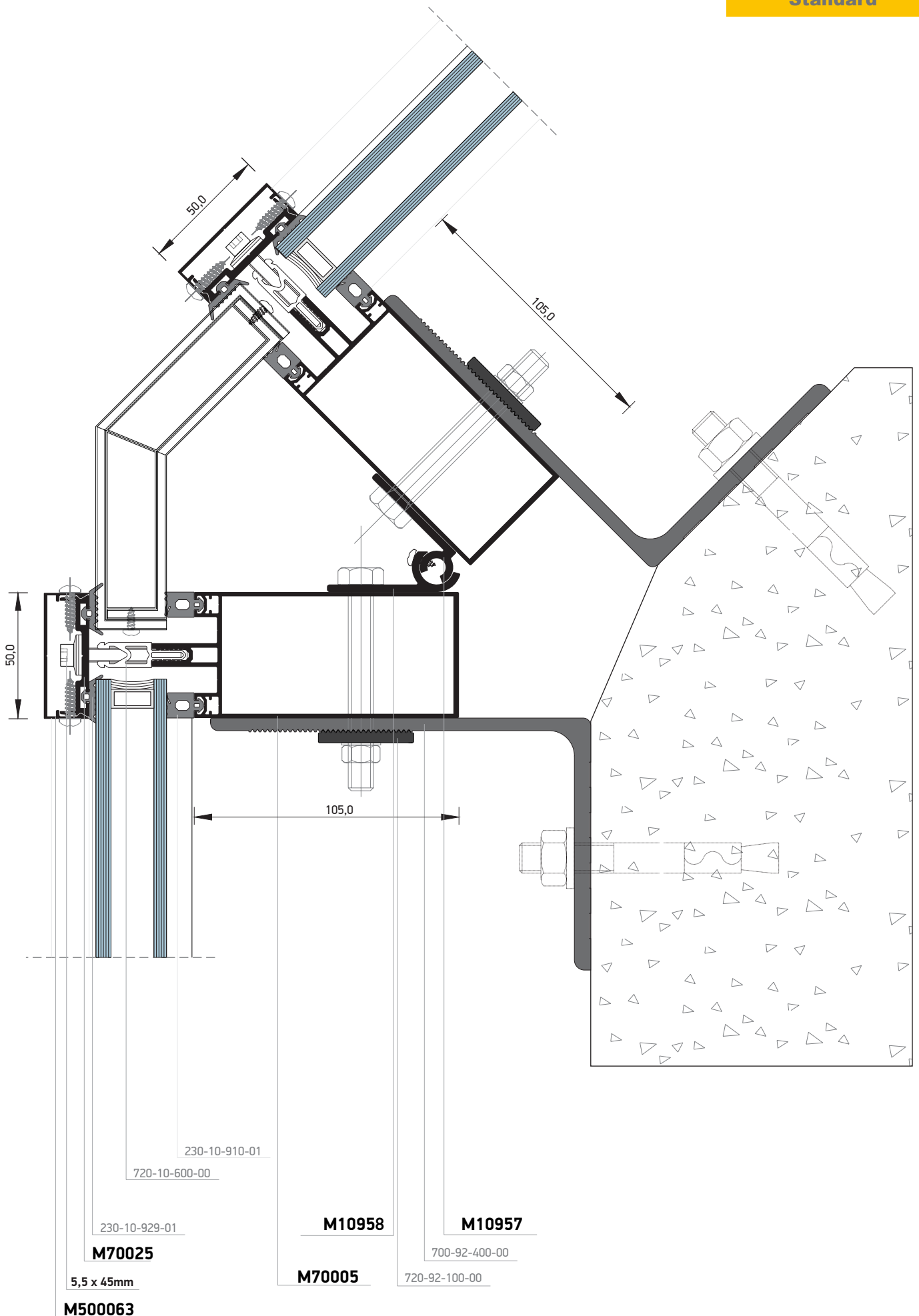


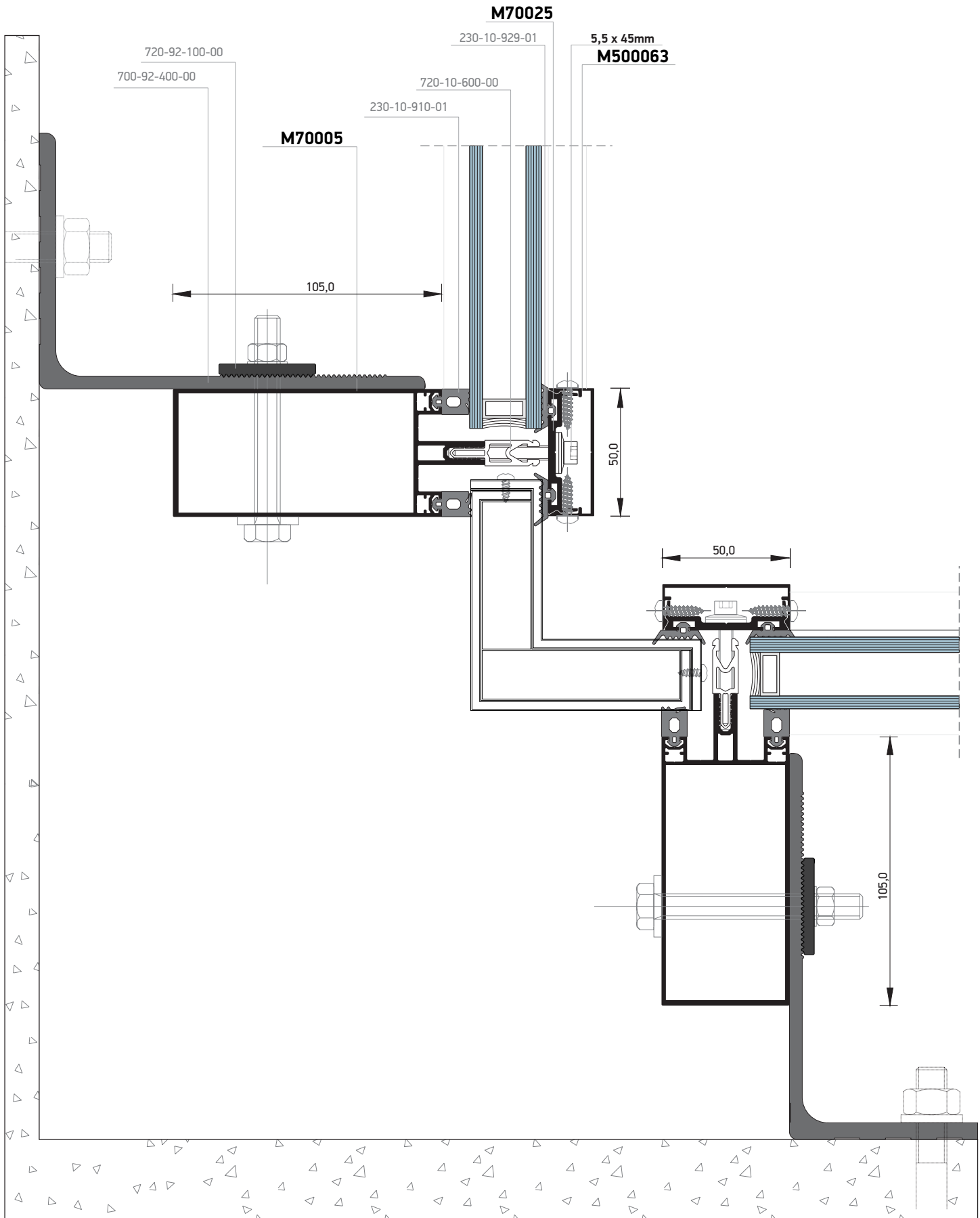


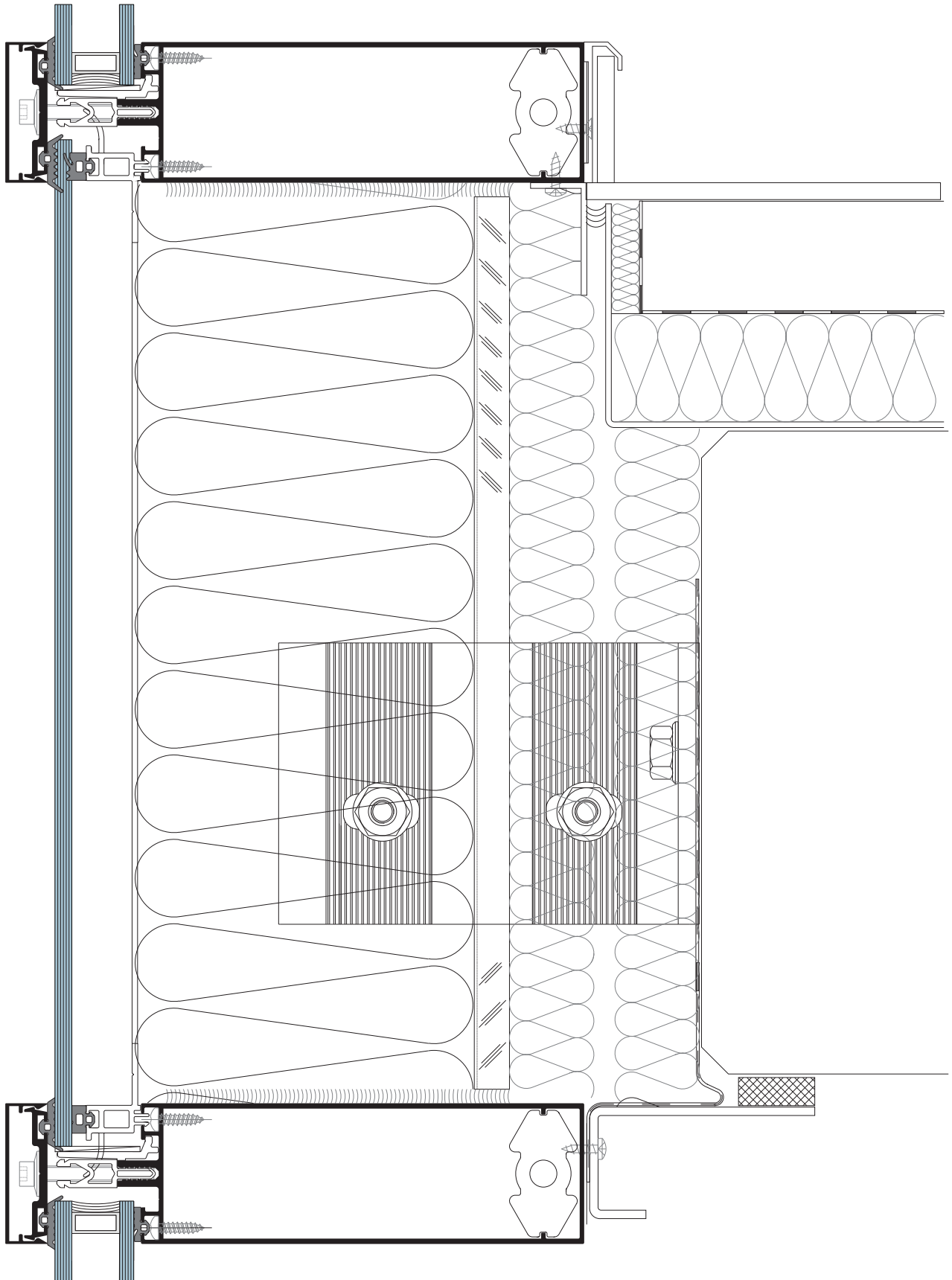


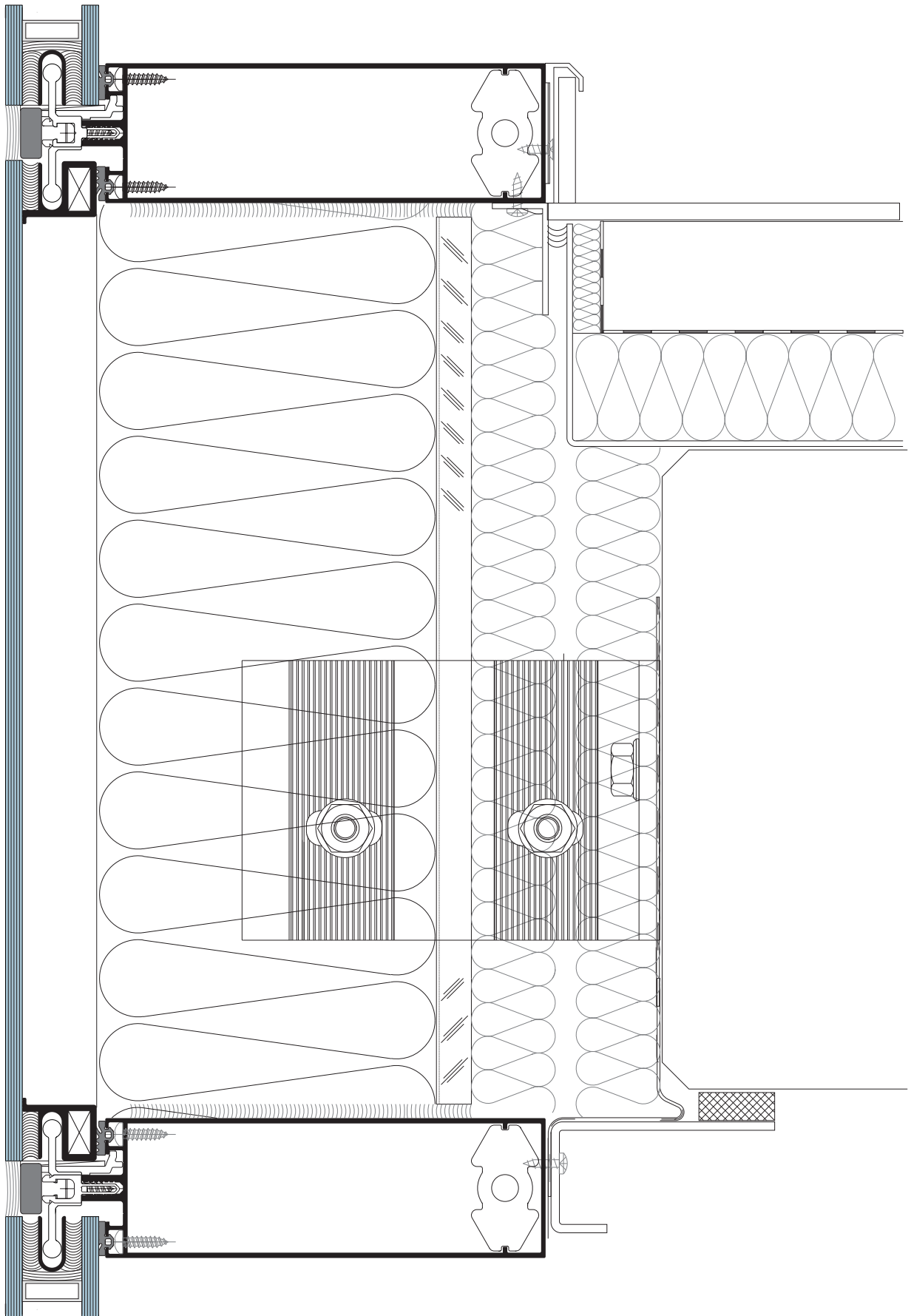


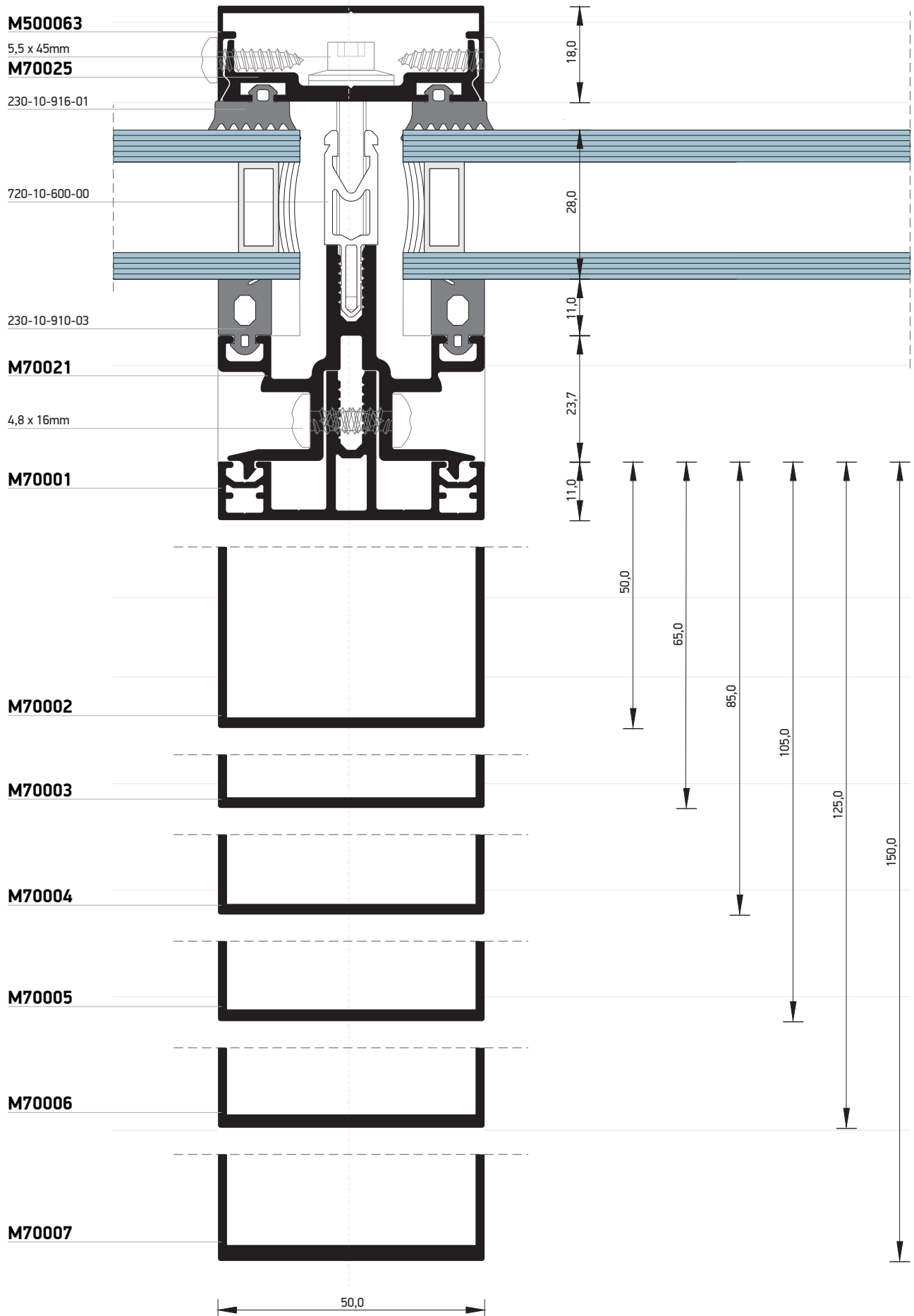












Τομές 1:1 | Section 1:1

150°

M9010

5,5 x 45mm

M109401

230-10-929-01

720-10-600-00

230-10-910-03

M70021

4,8 x 16mm

M70001

M70002

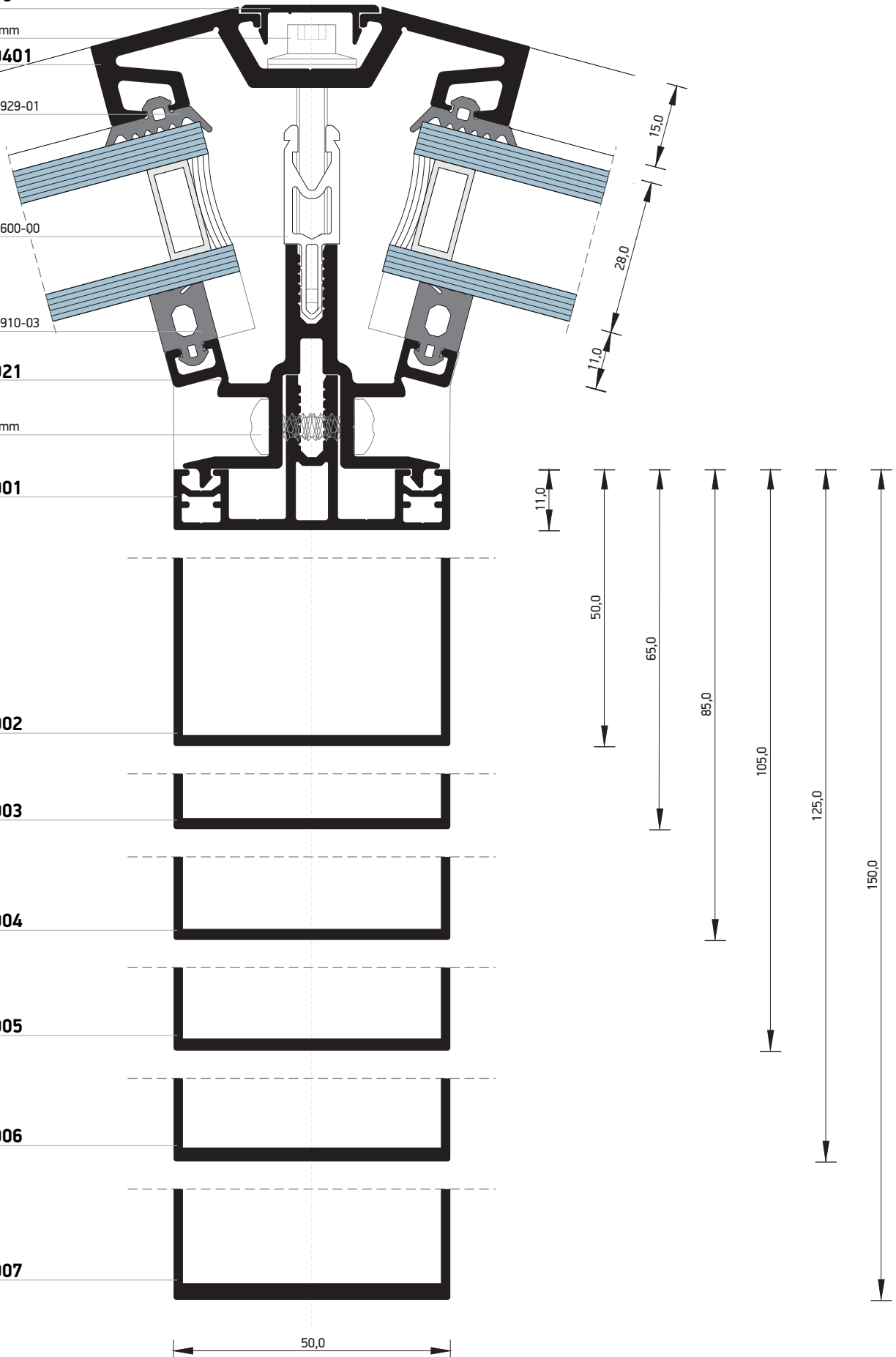
M70003

M70004

M70005

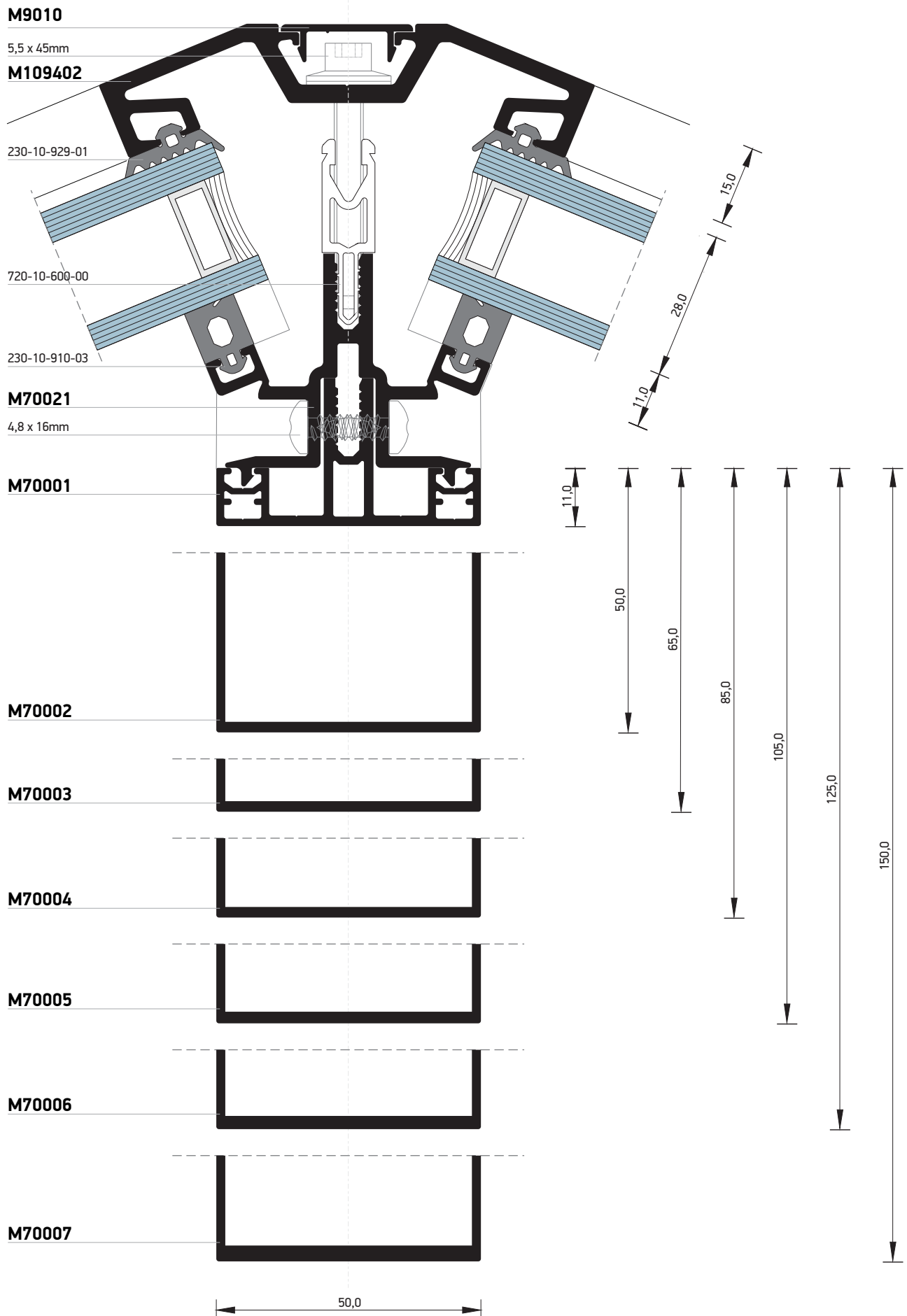
M70006

M70007



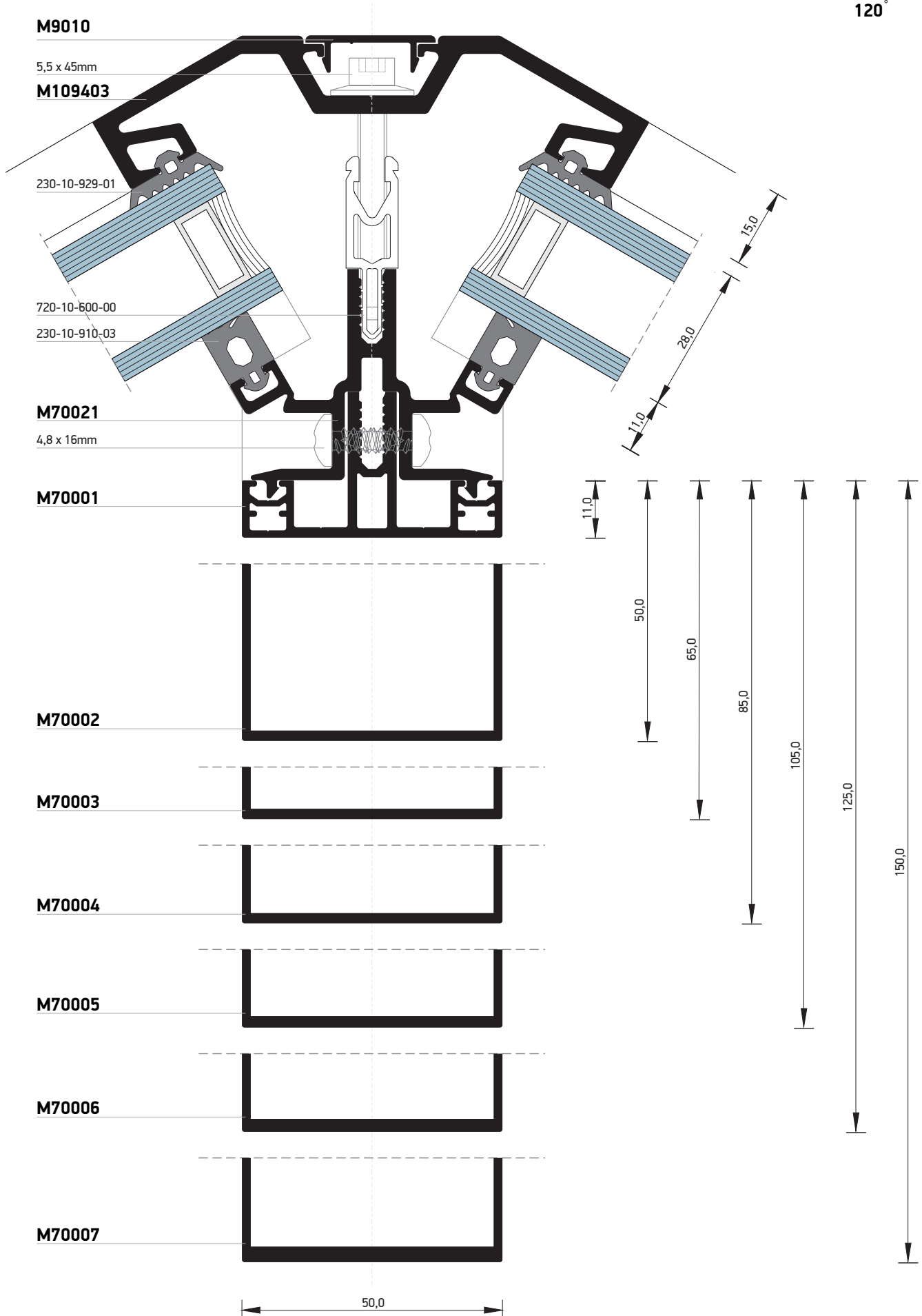
Τομές 1:1 | Section 1:1

135°



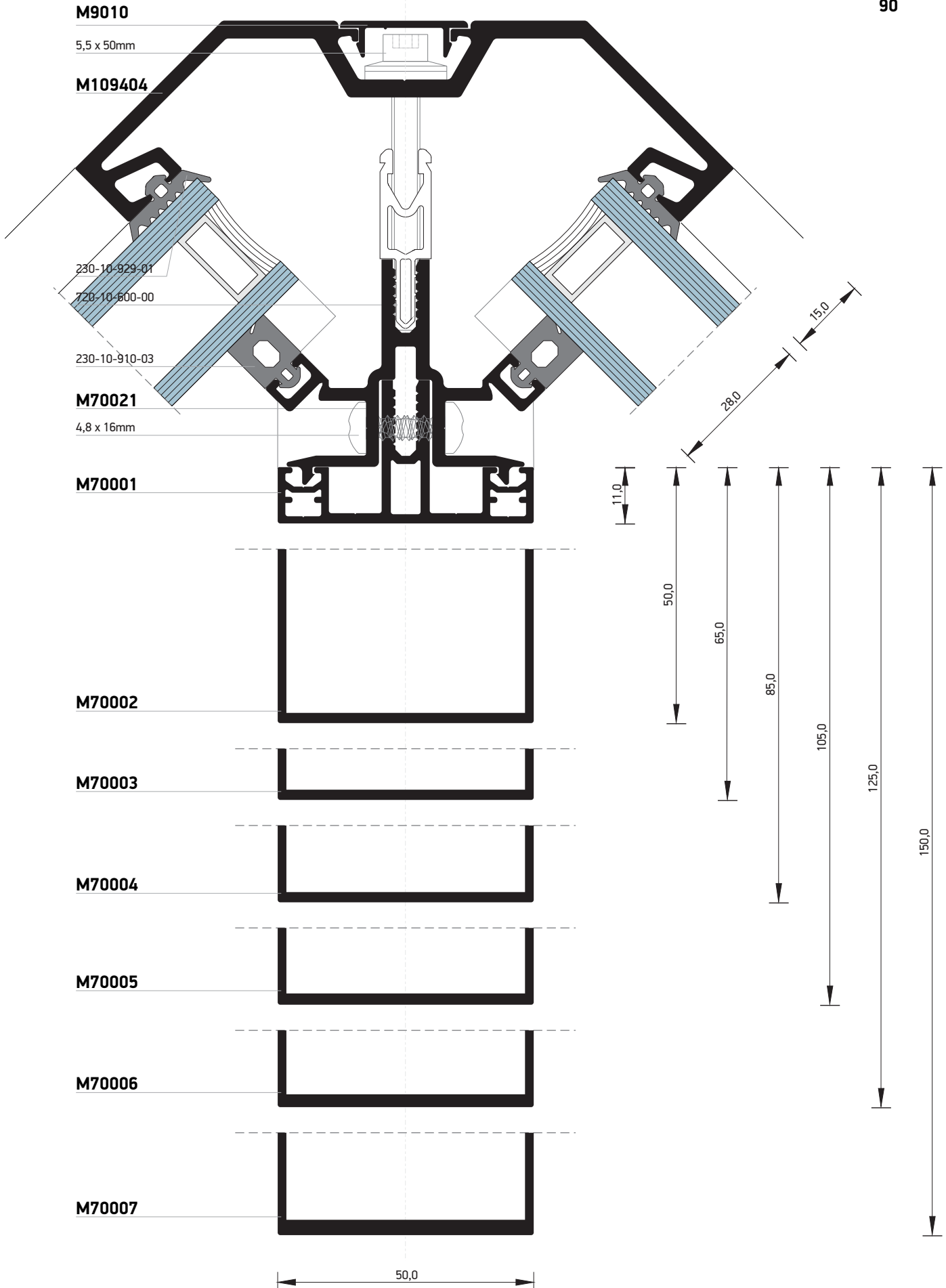
Τομές 1:1 | Section 1:1

120°

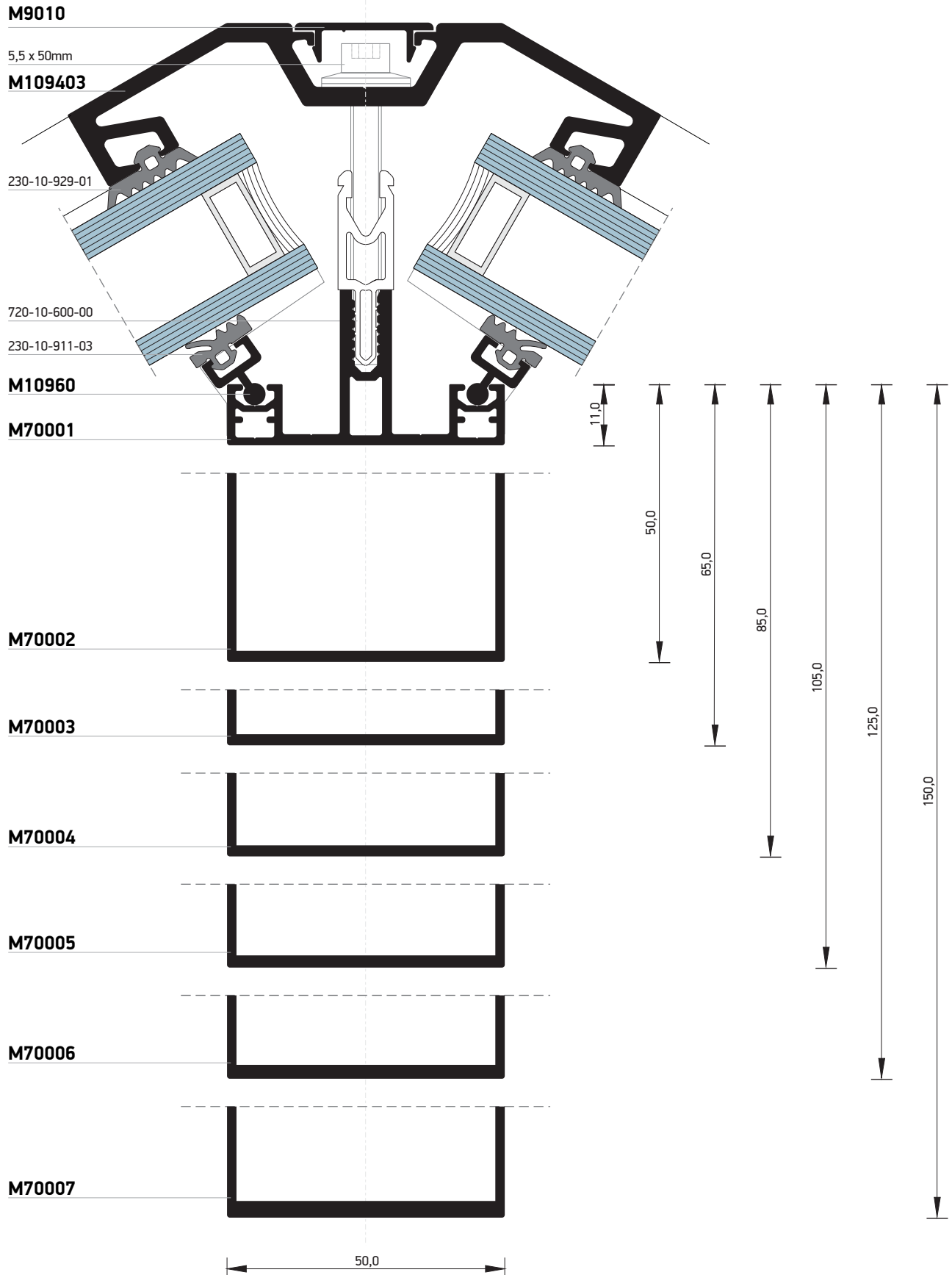


Τομές 1:1 | Section 1:1

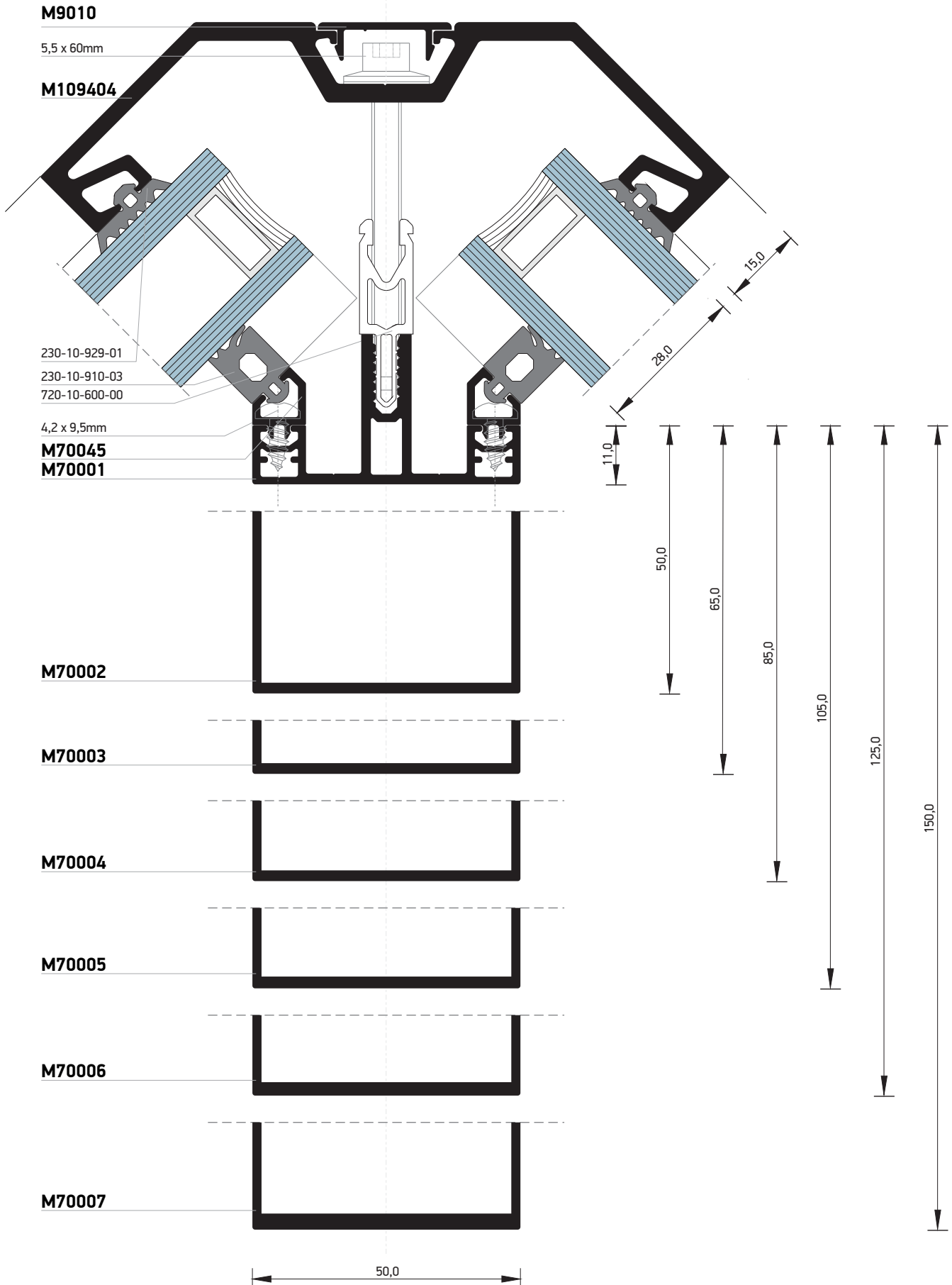
90°



Τομές 1:1 | Section 1:1

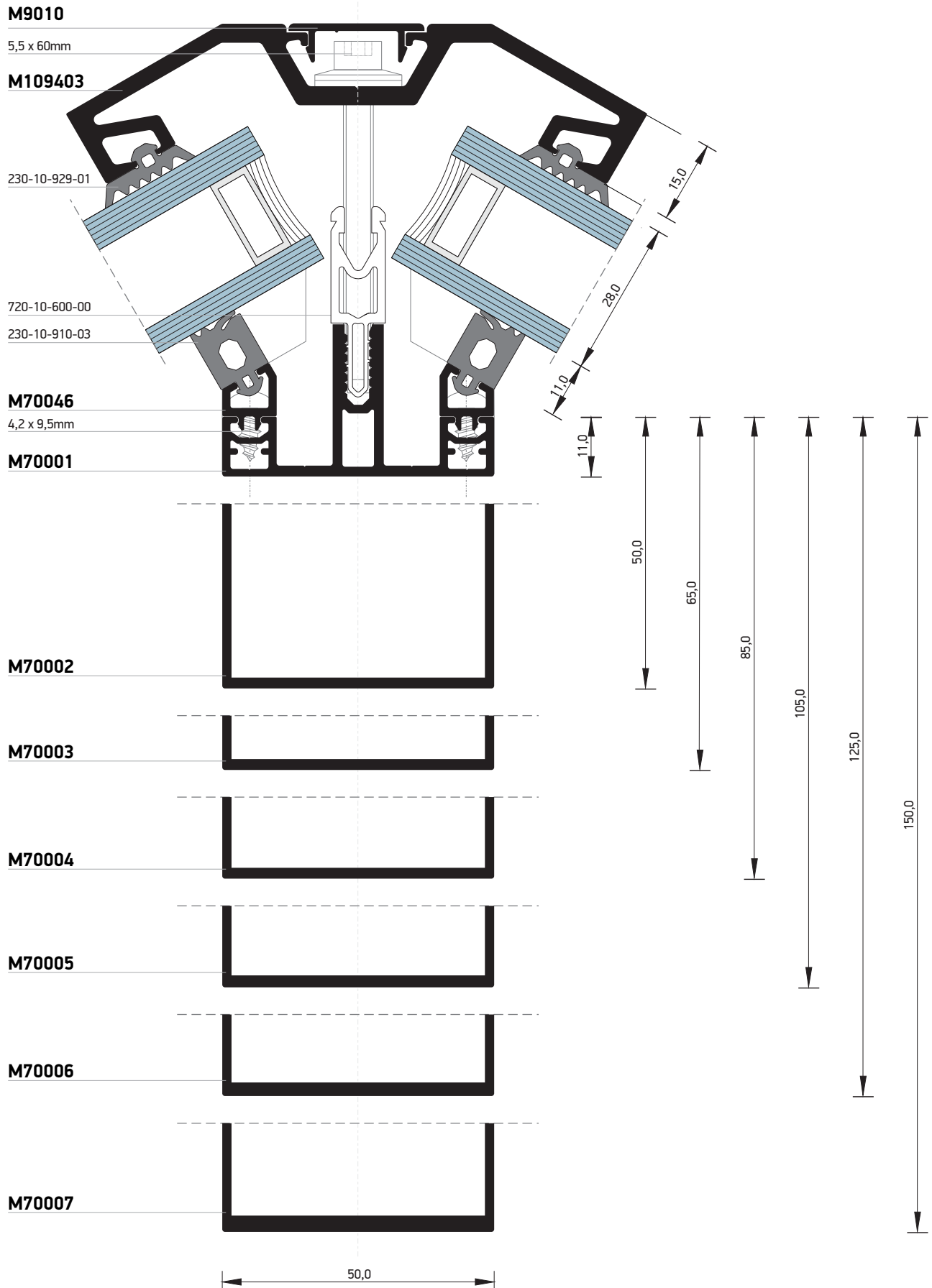


90°

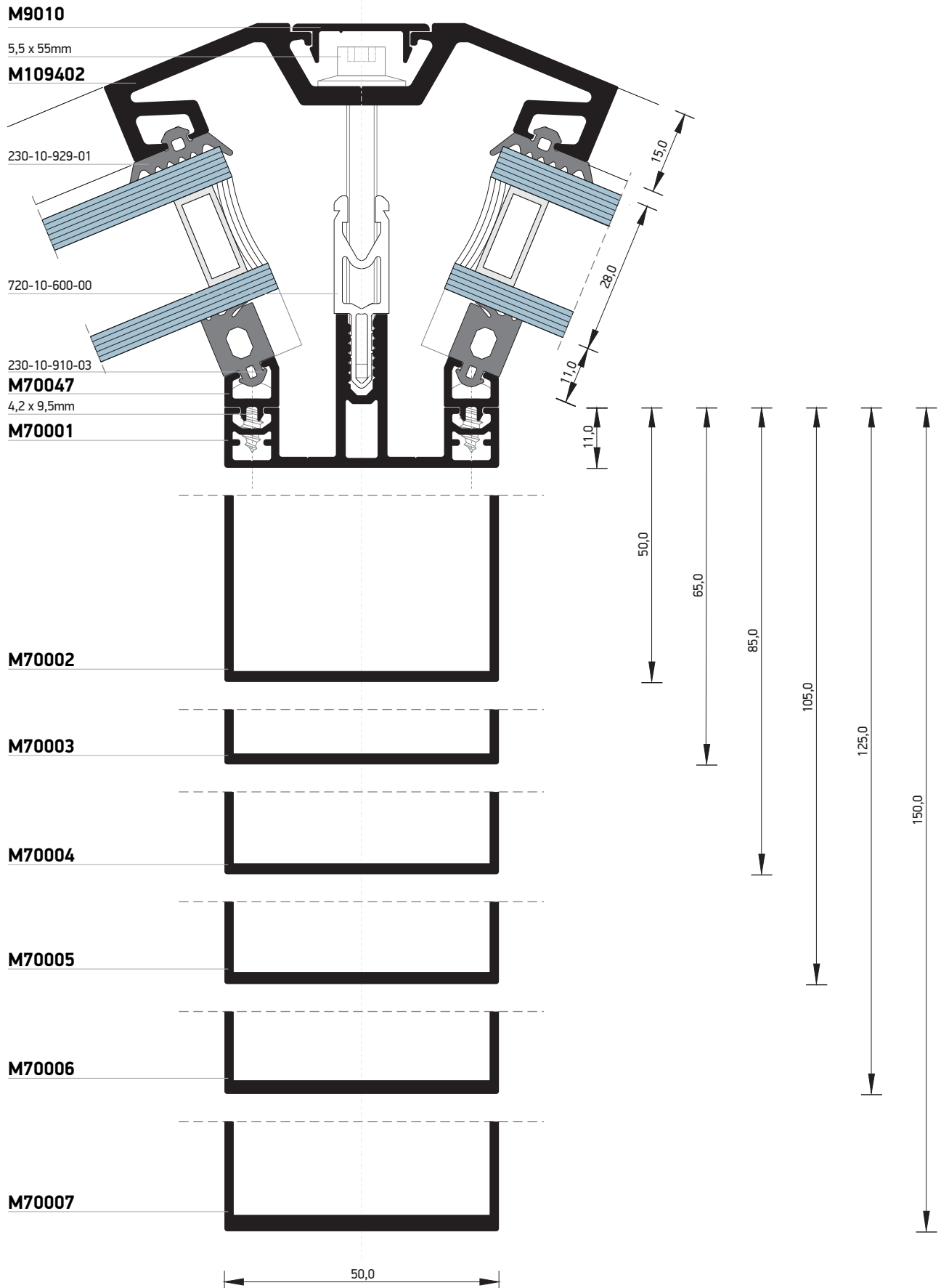


Τομές 1:1 | Section 1:1

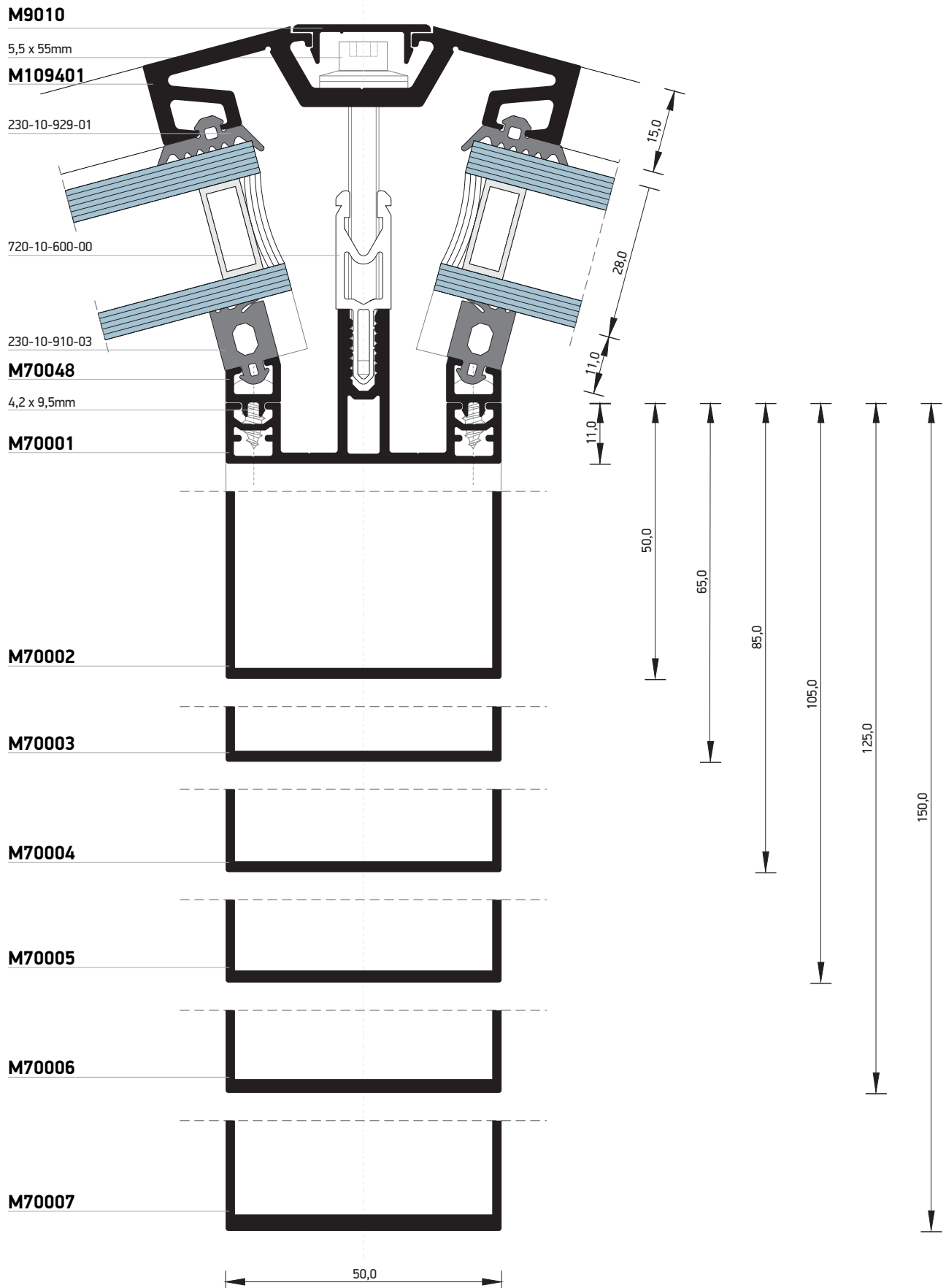
120°



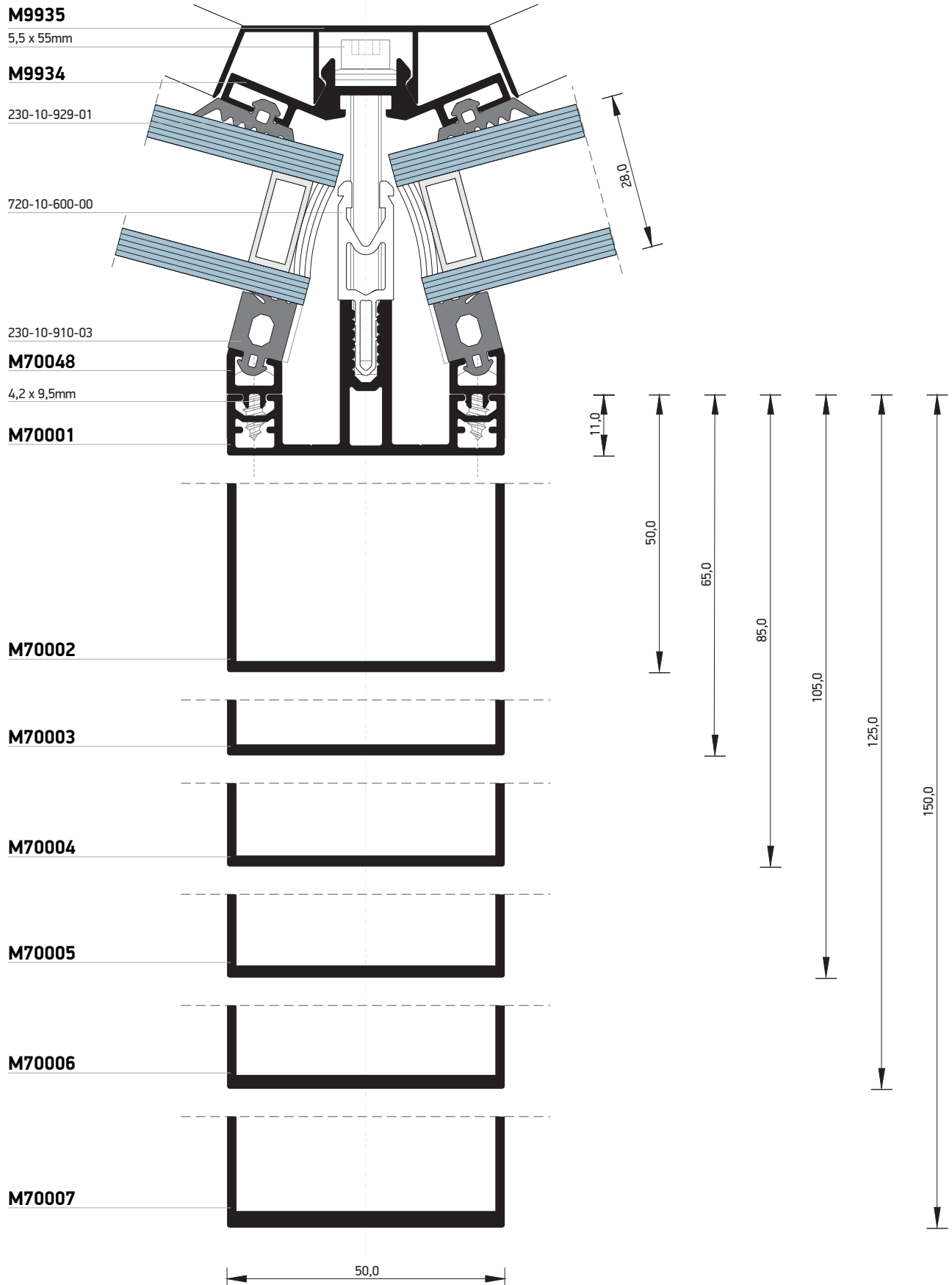
Τομές 1:1 | Section 1:1



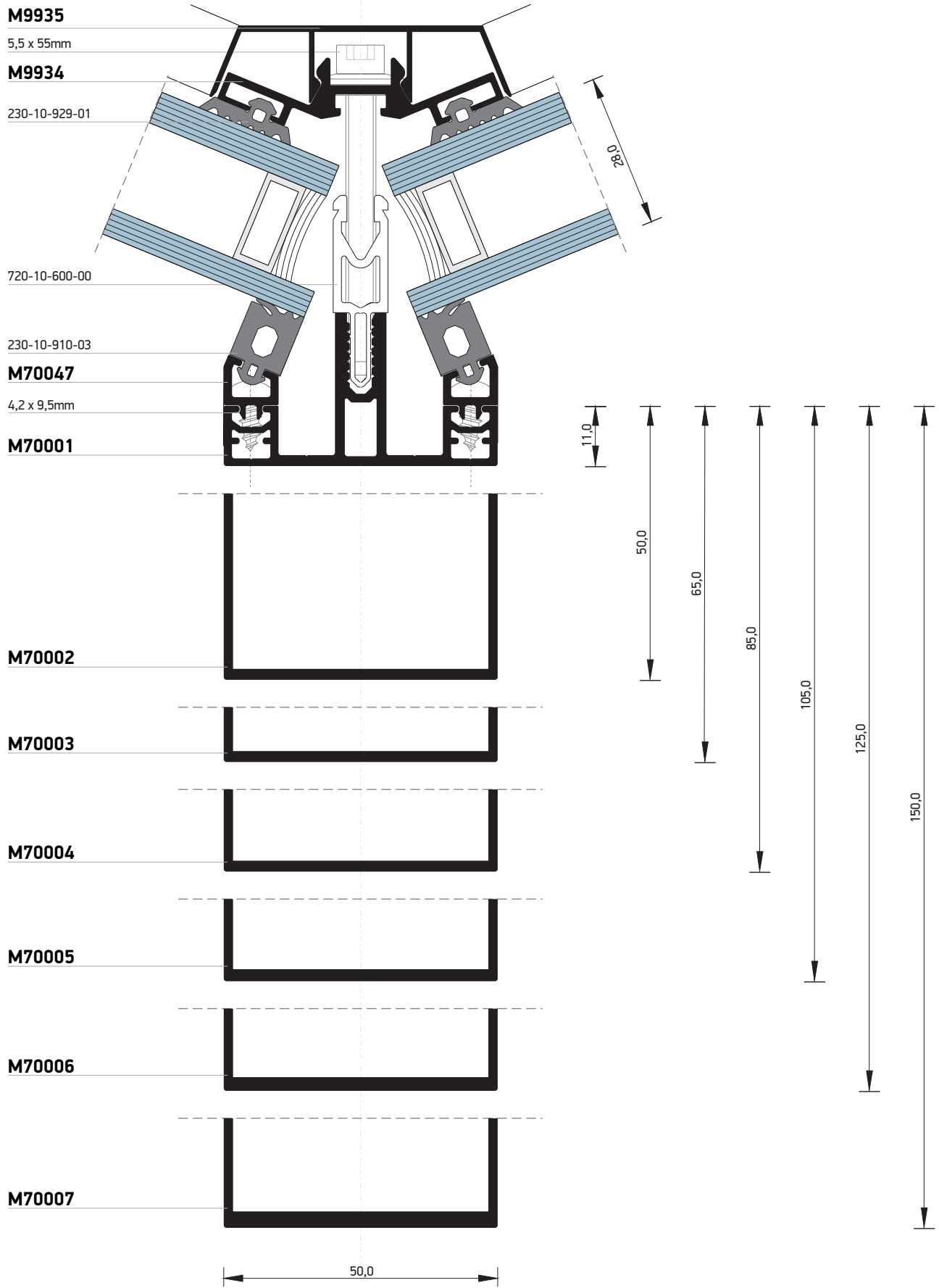
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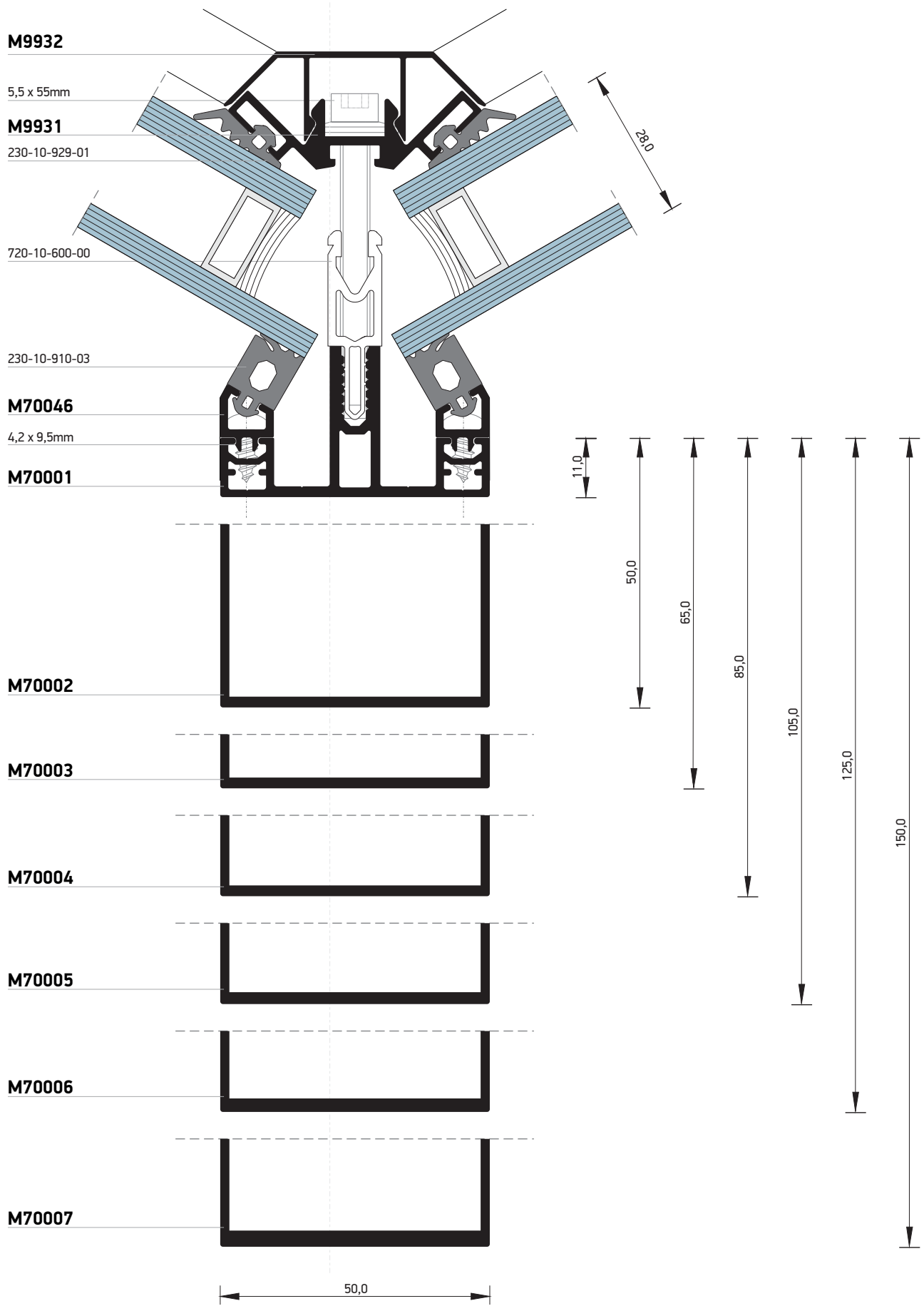


Τομές 1:1 | Section 1:1

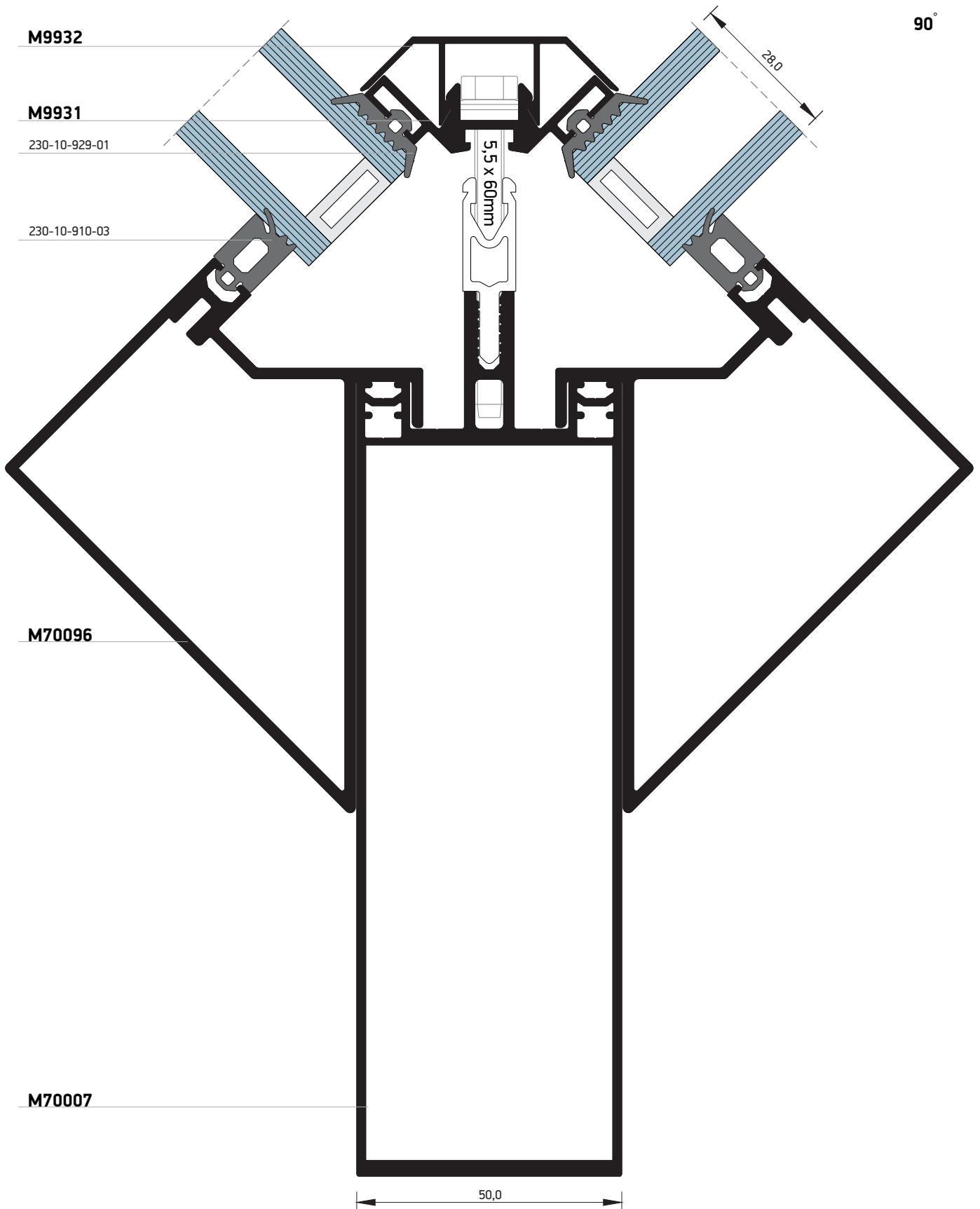


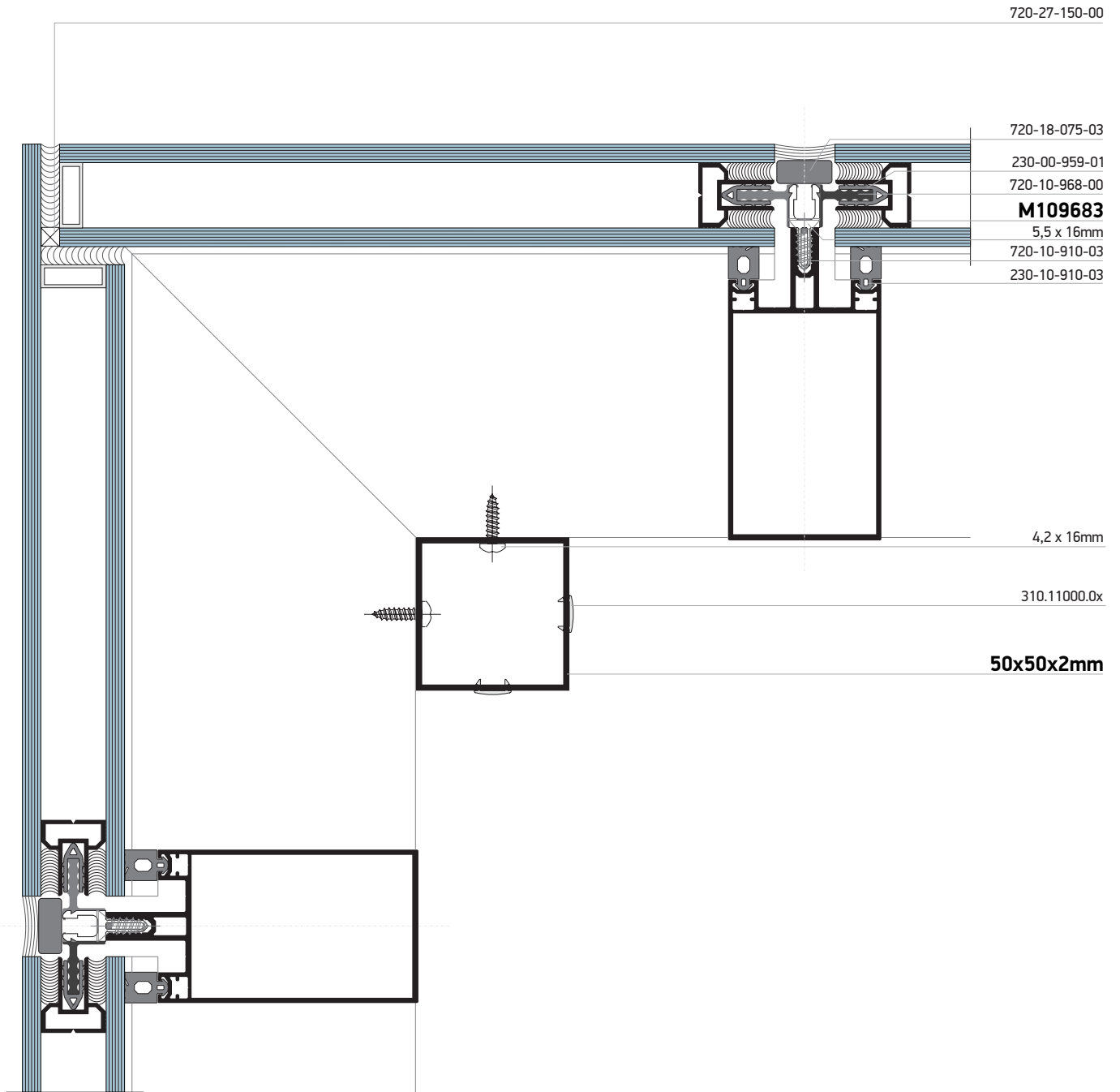
Τομές 1:1 | Section 1:1

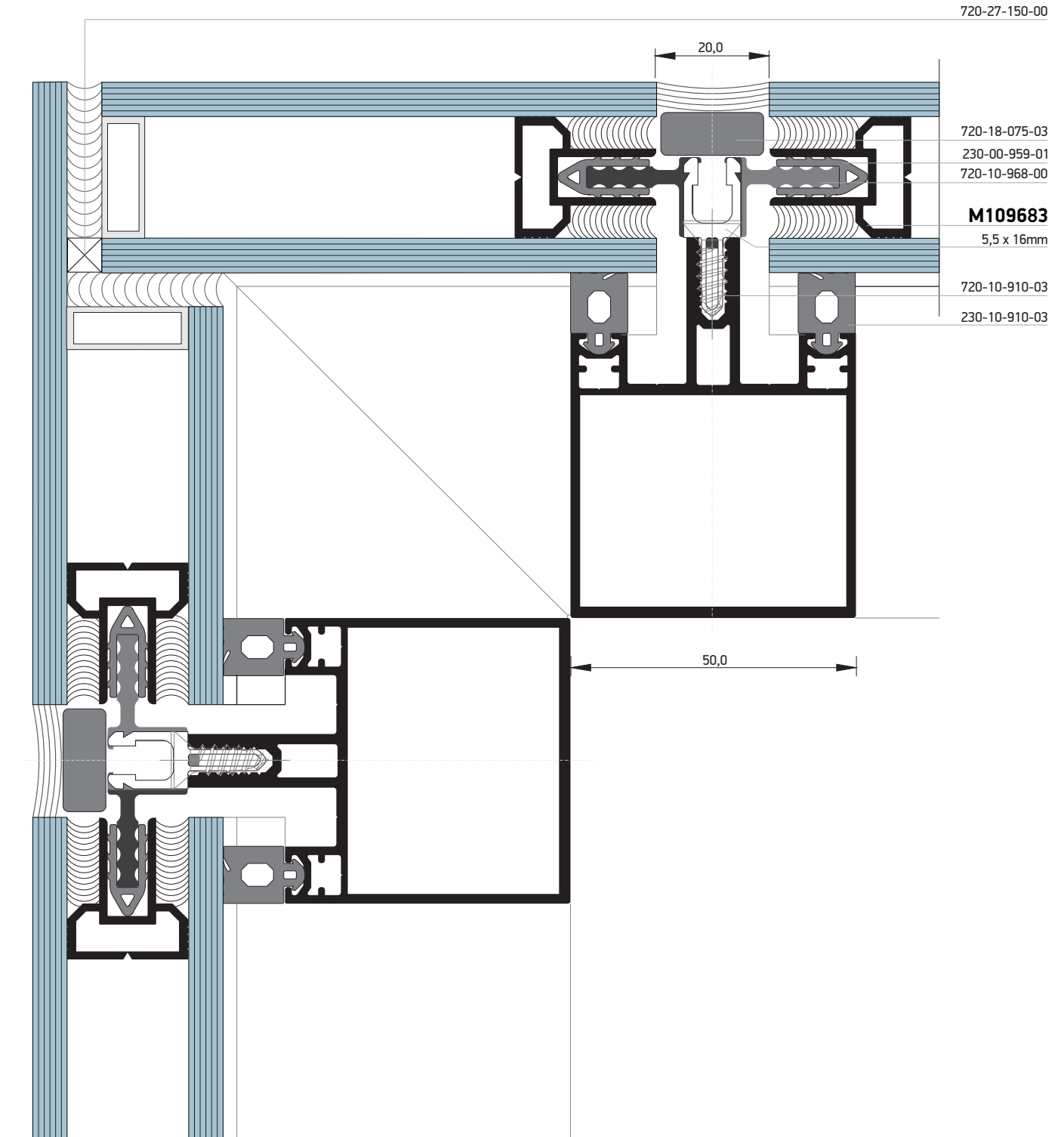


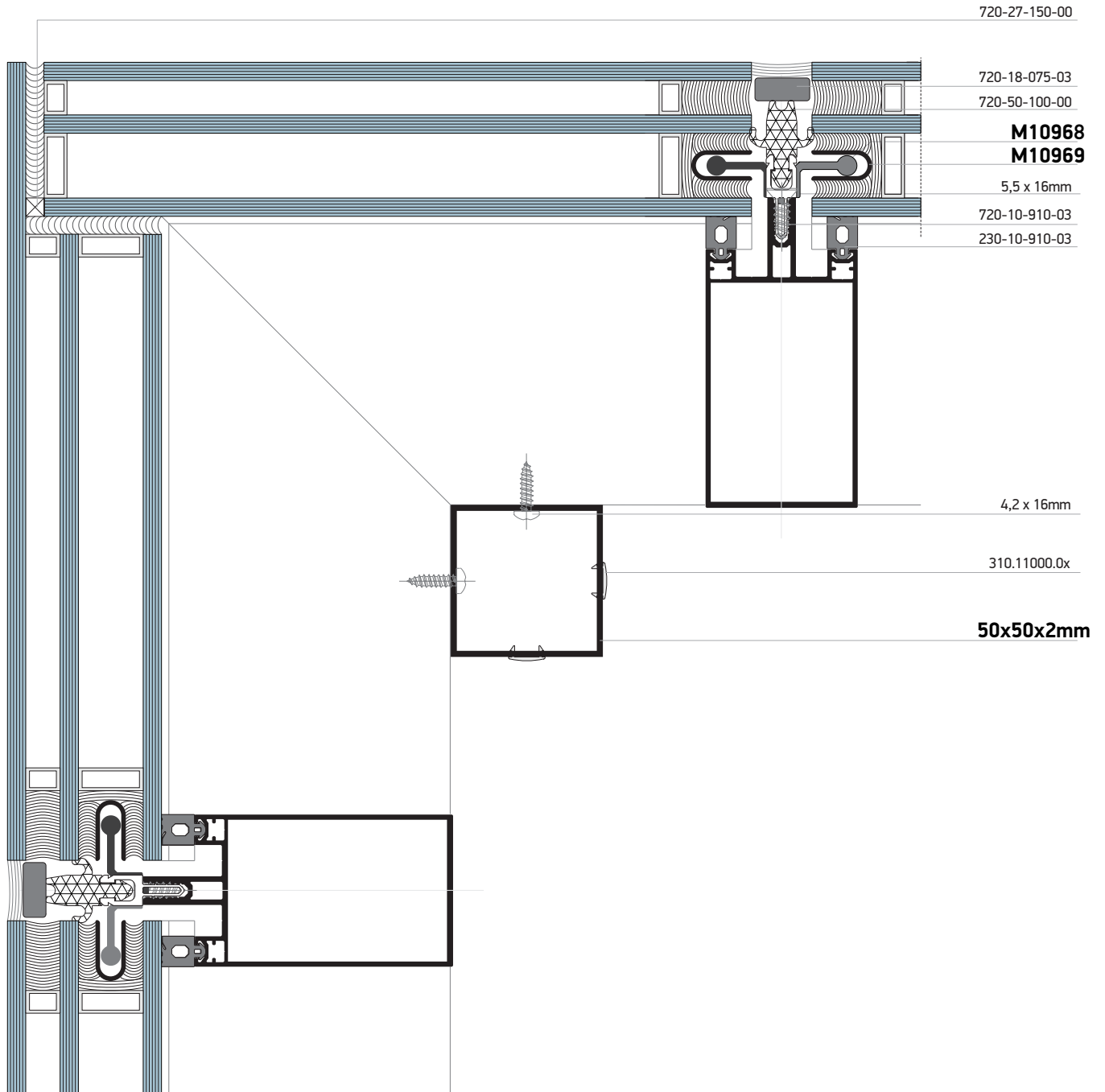


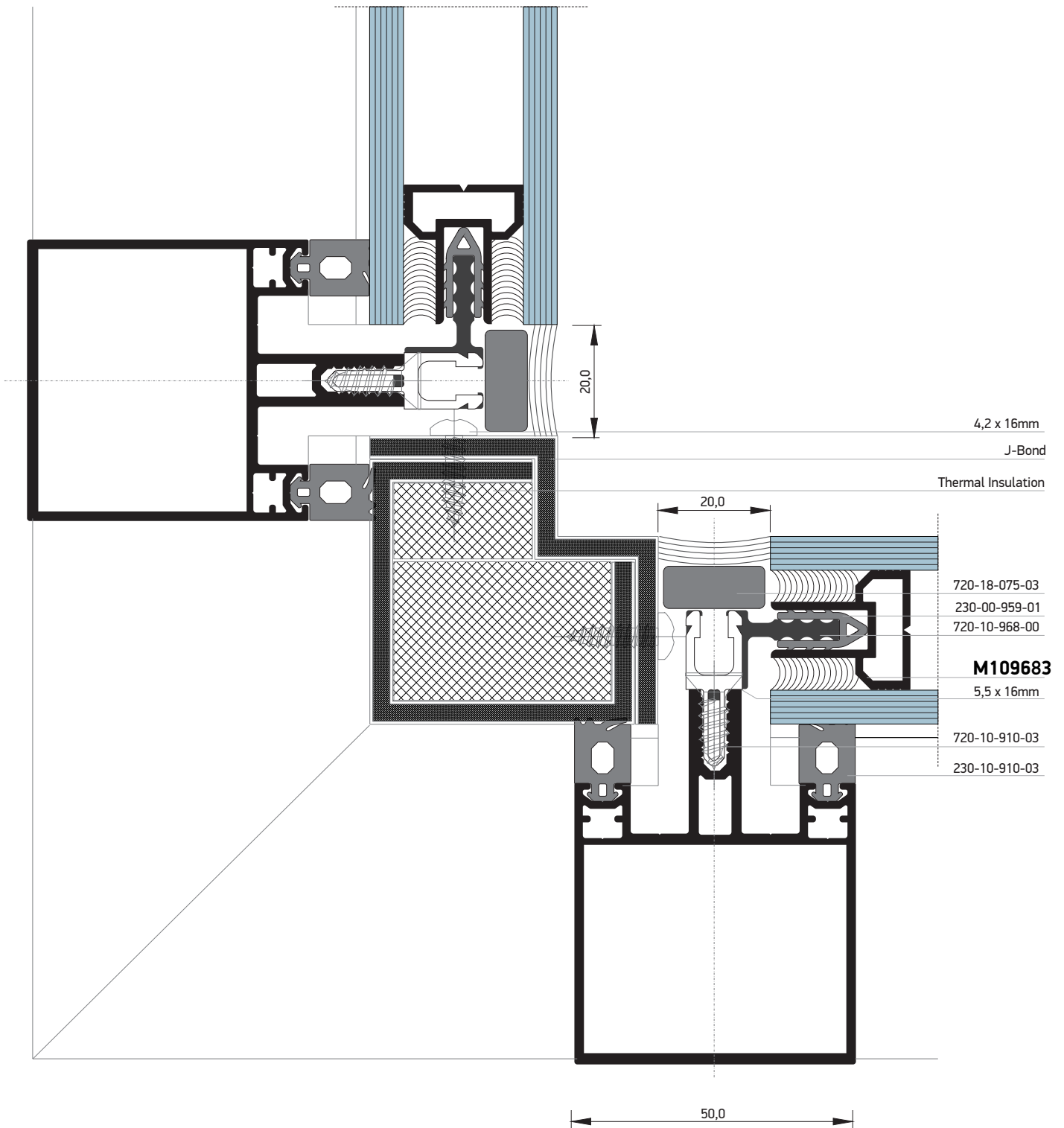
Τομές 1:1 | Section 1:1



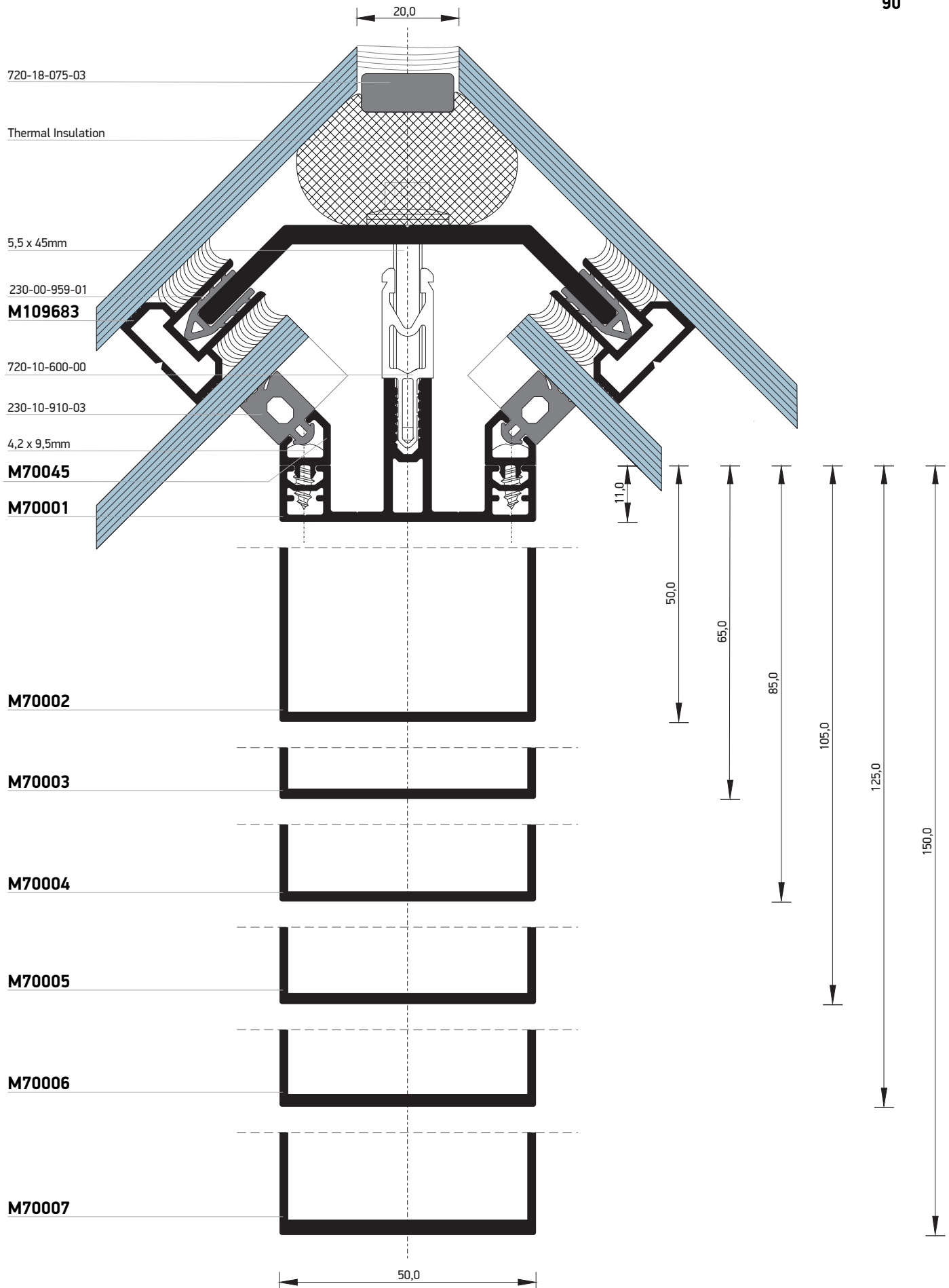




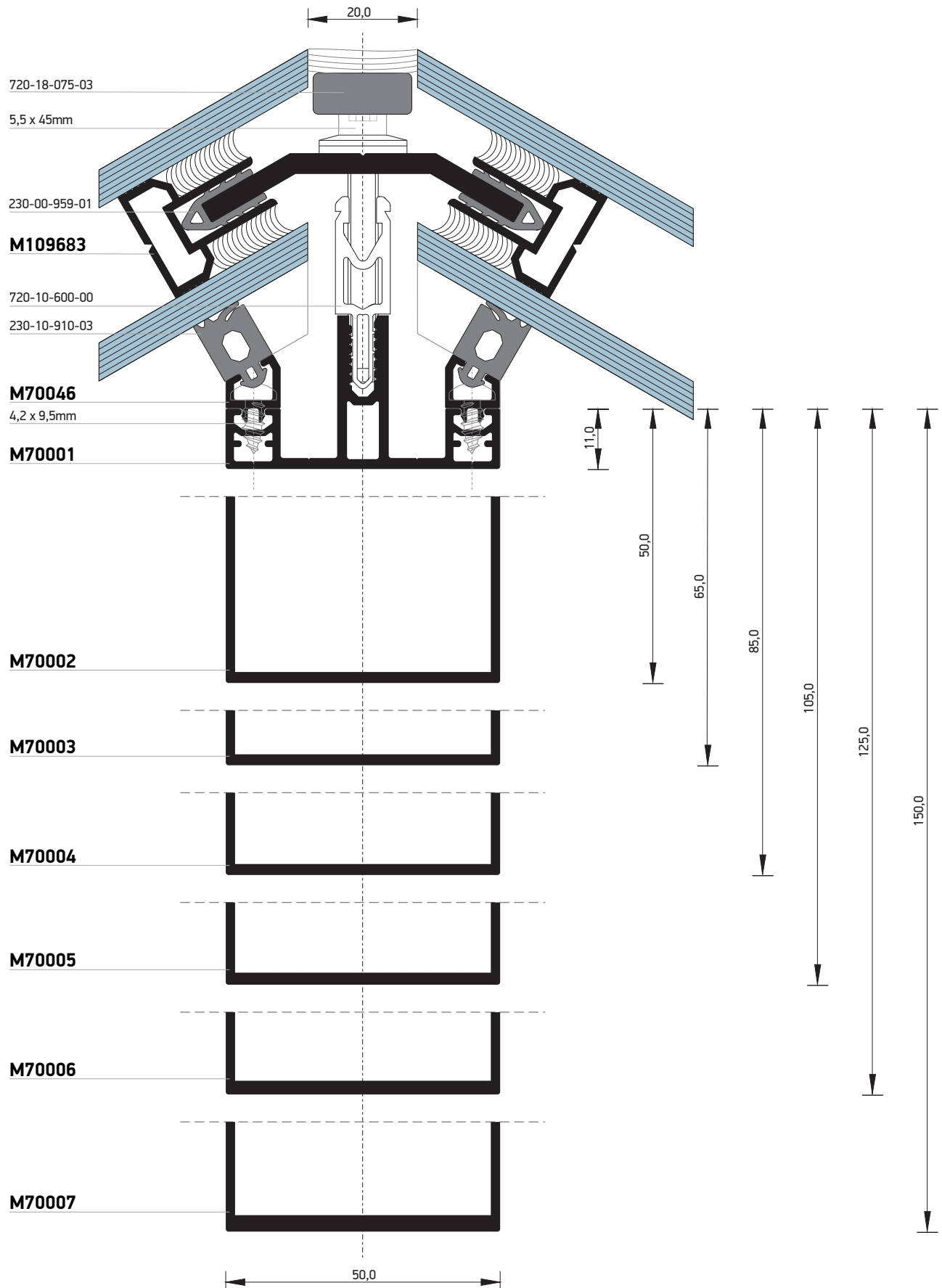


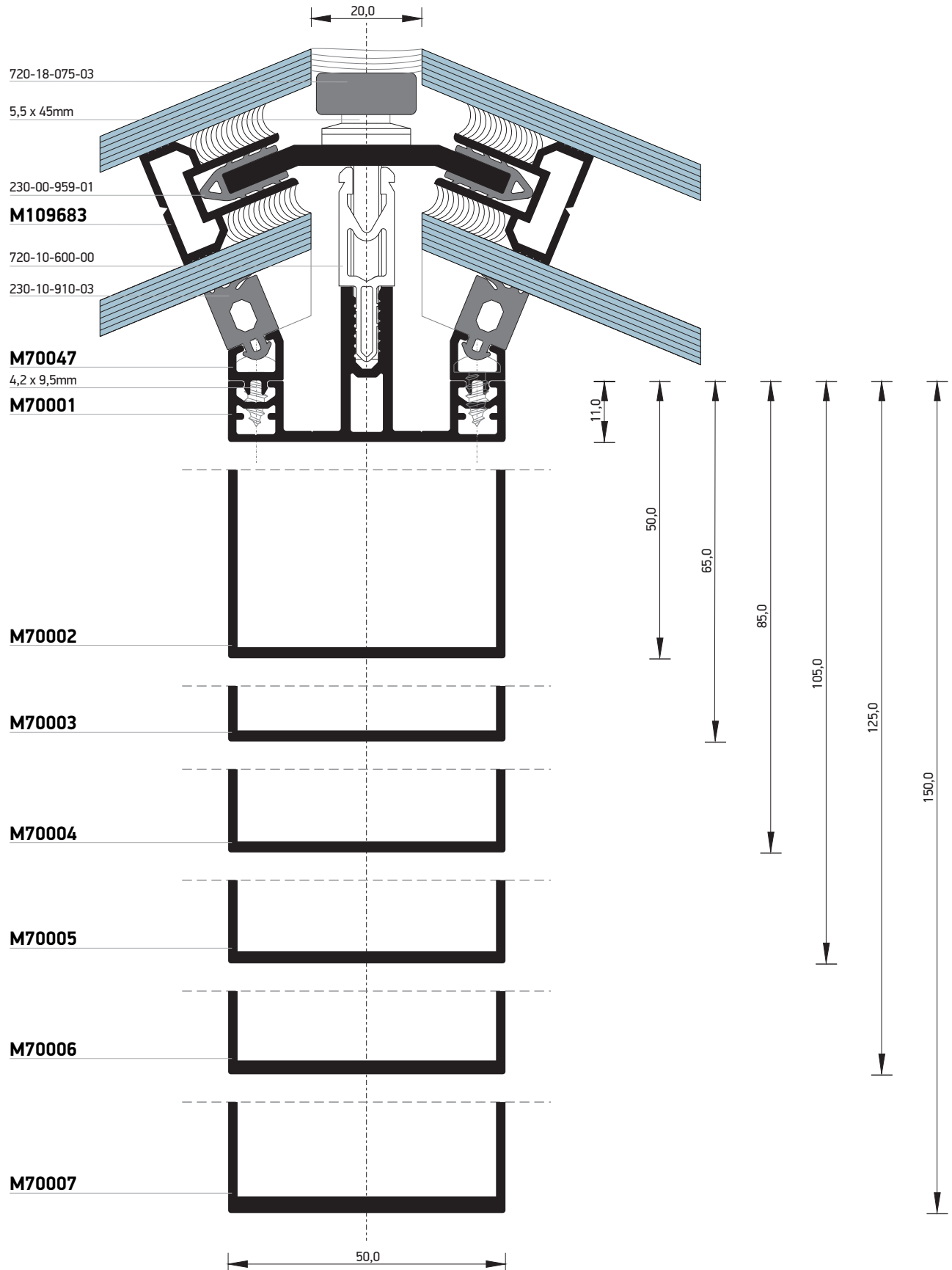


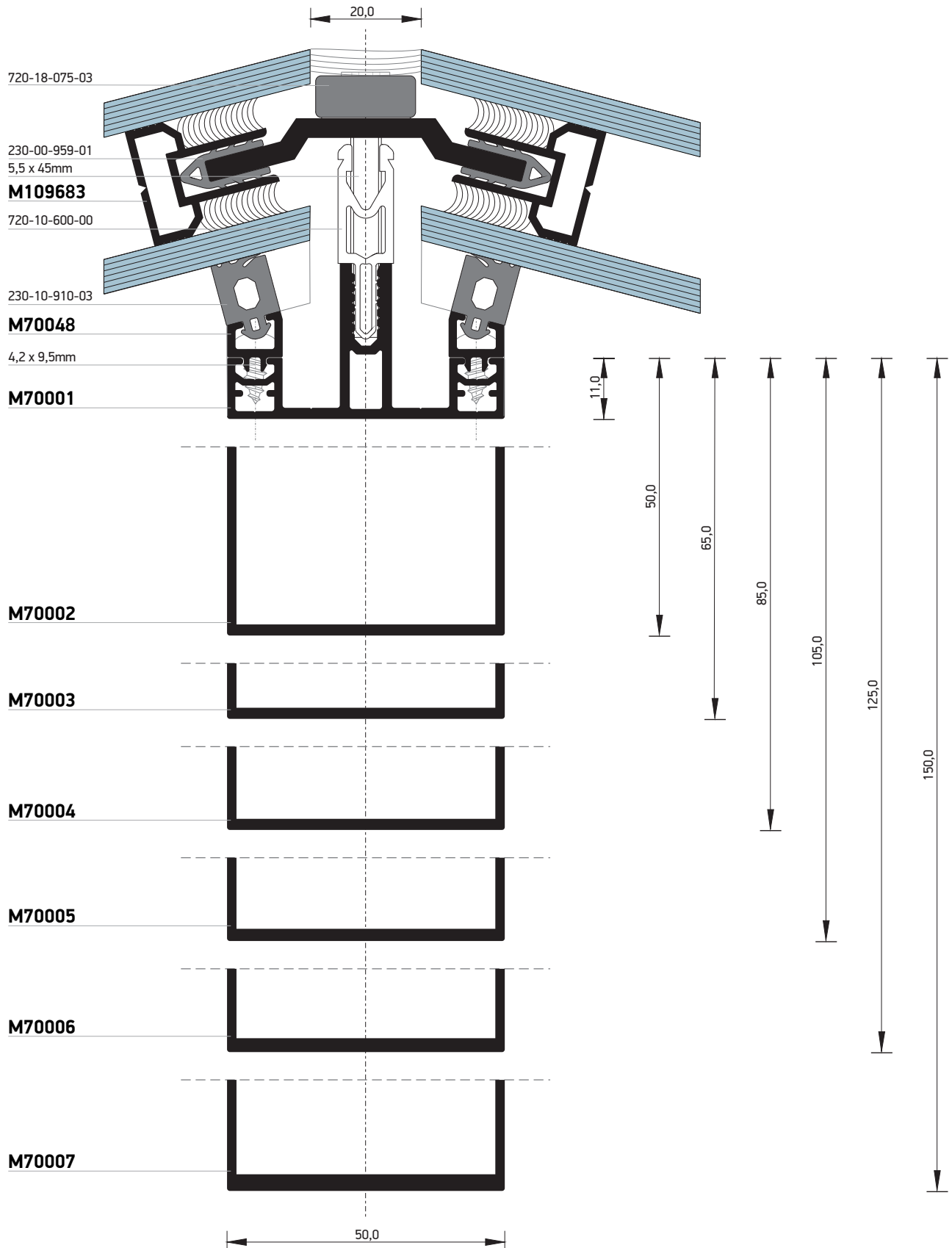
90°



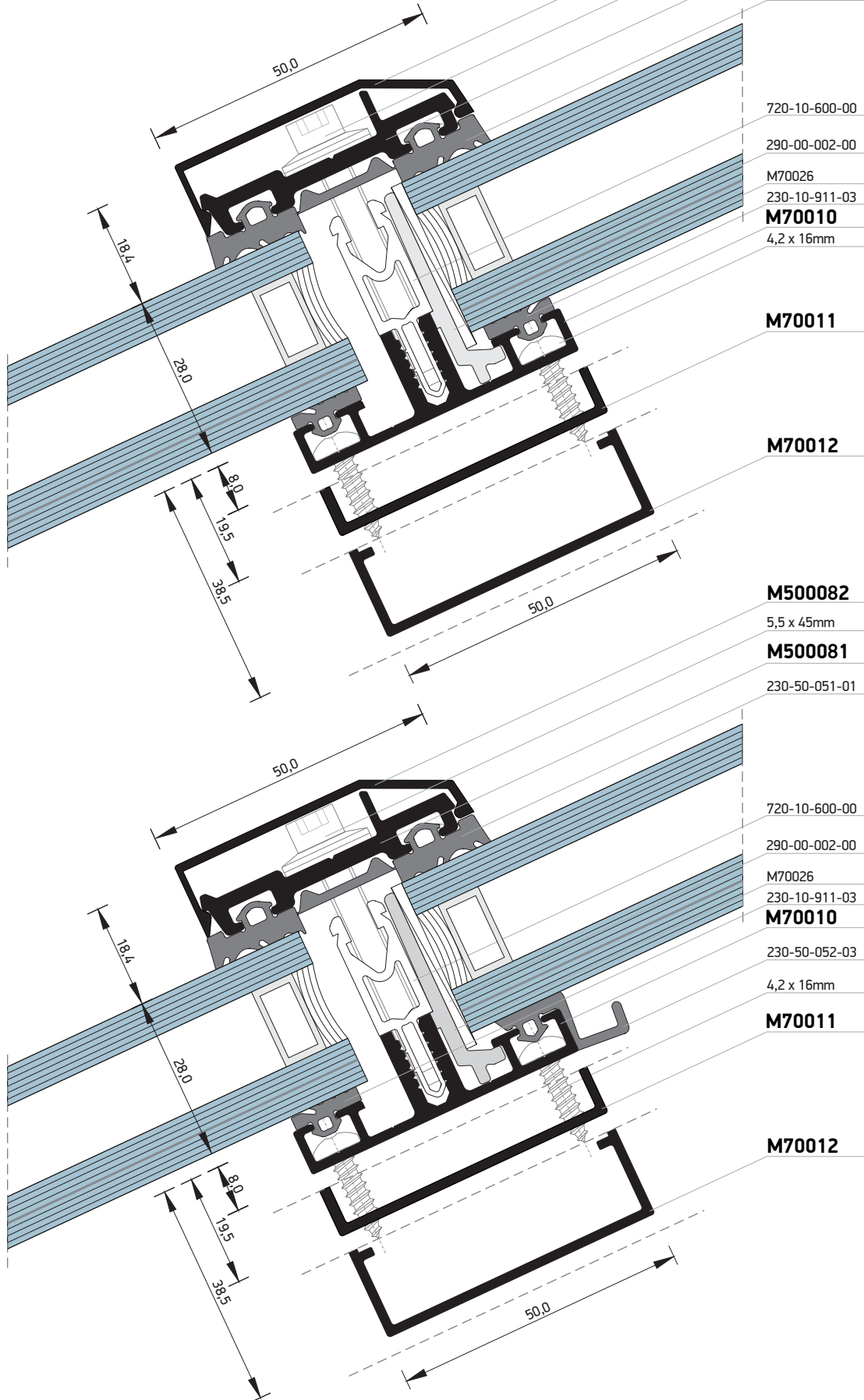
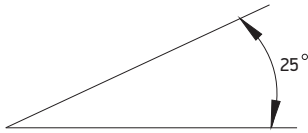
Τομές 1:1 | Section 1:1







Standard



M500082

5,5 x 45mm

M500081

230-50-051-01

720-10-600-00

290-00-002-00

M70026

230-10-911-03

M70010

4,2 x 16mm

M70011

M70012

M500082

5,5 x 45mm

M500081

230-50-051-01

720-10-600-00

290-00-002-00

M70026

230-10-911-03

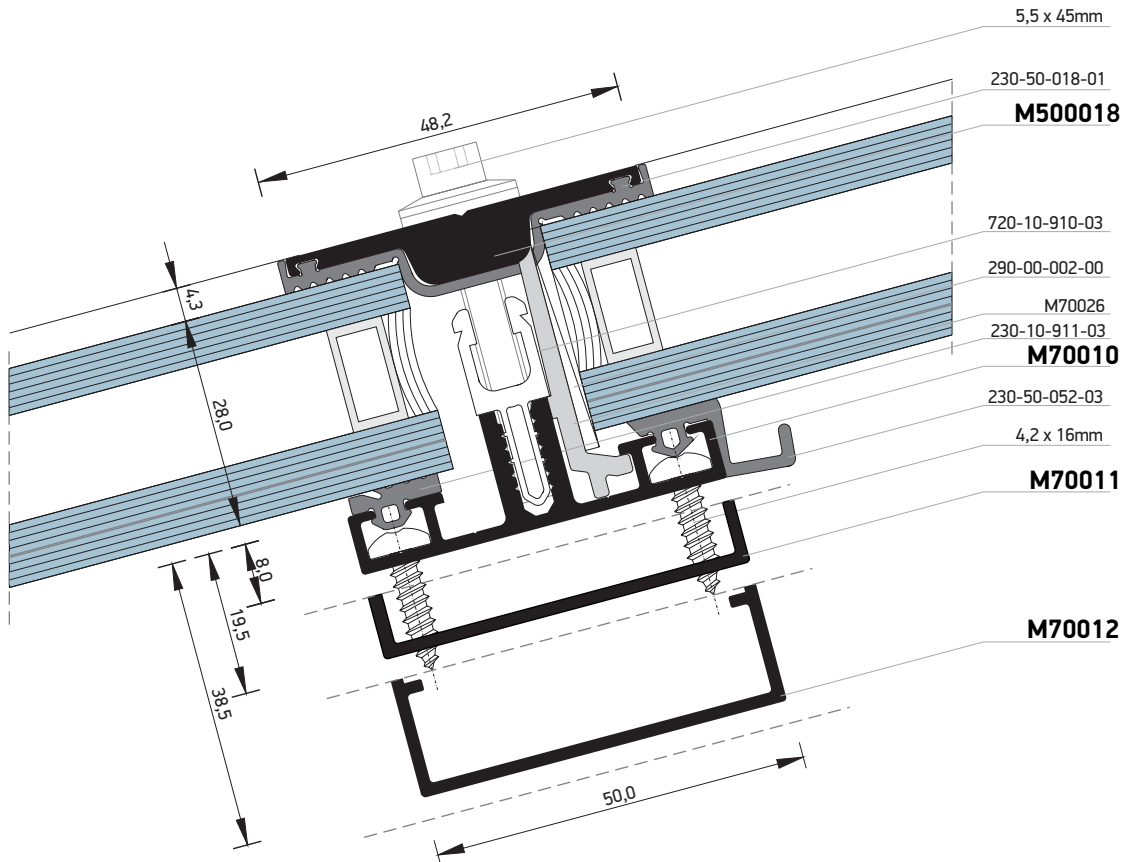
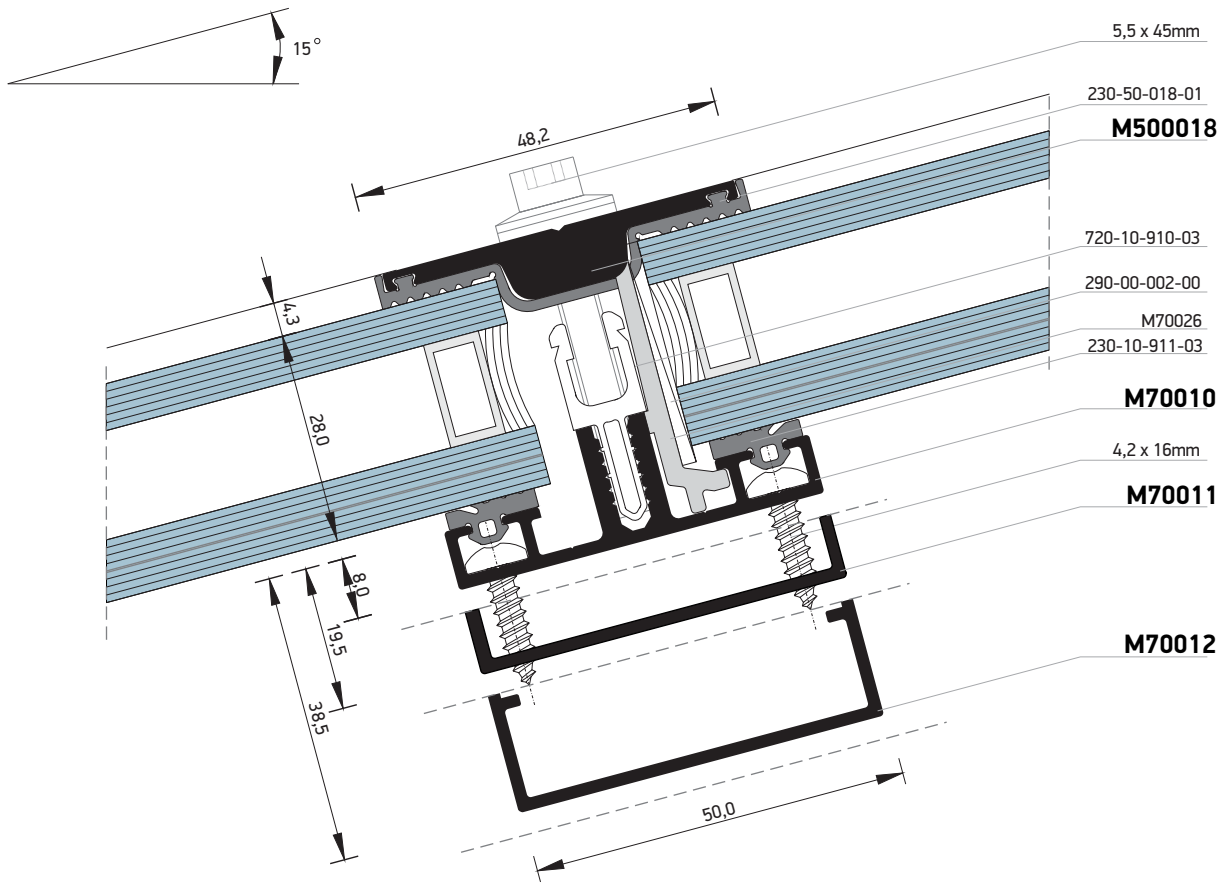
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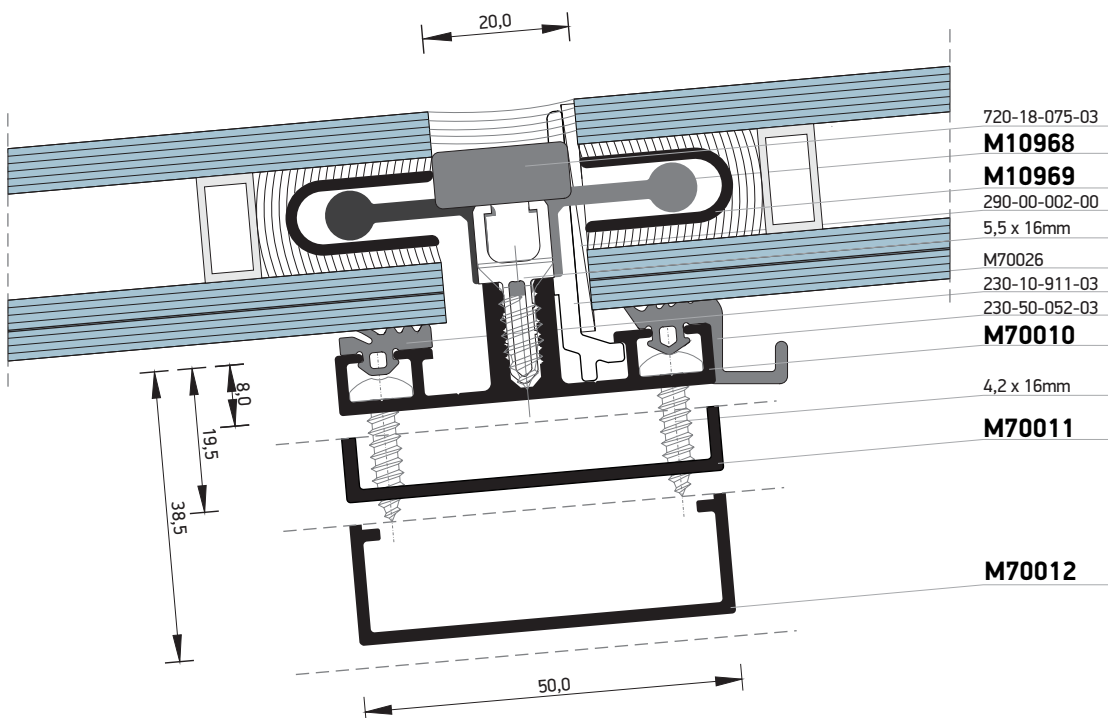
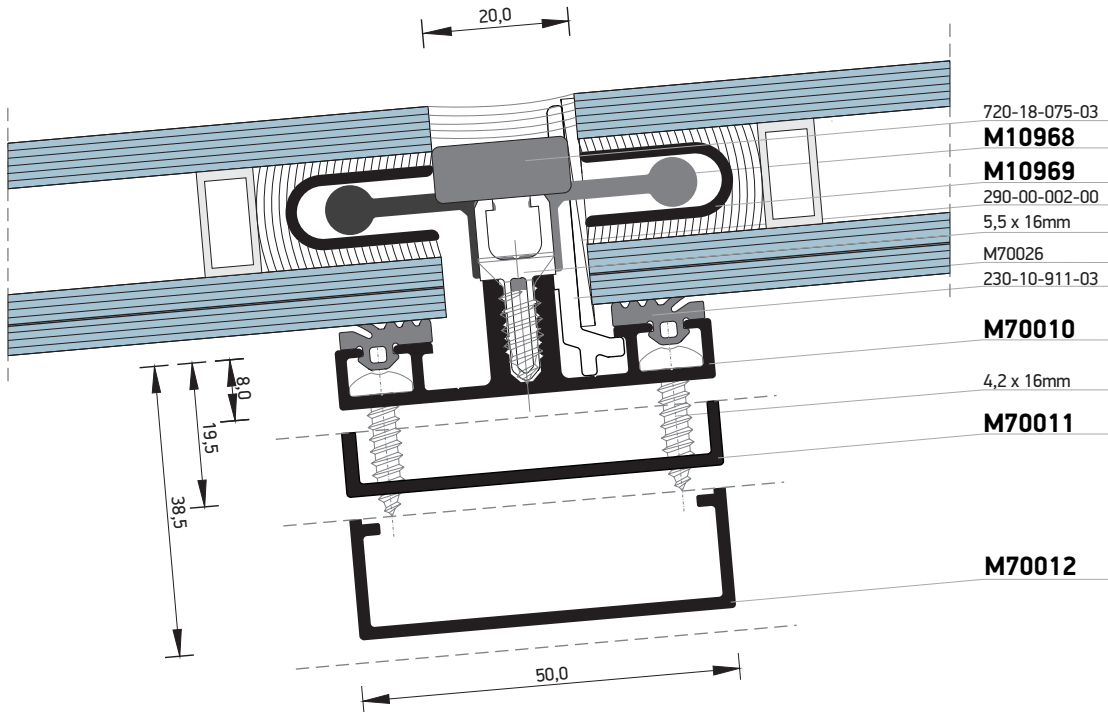
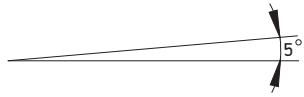
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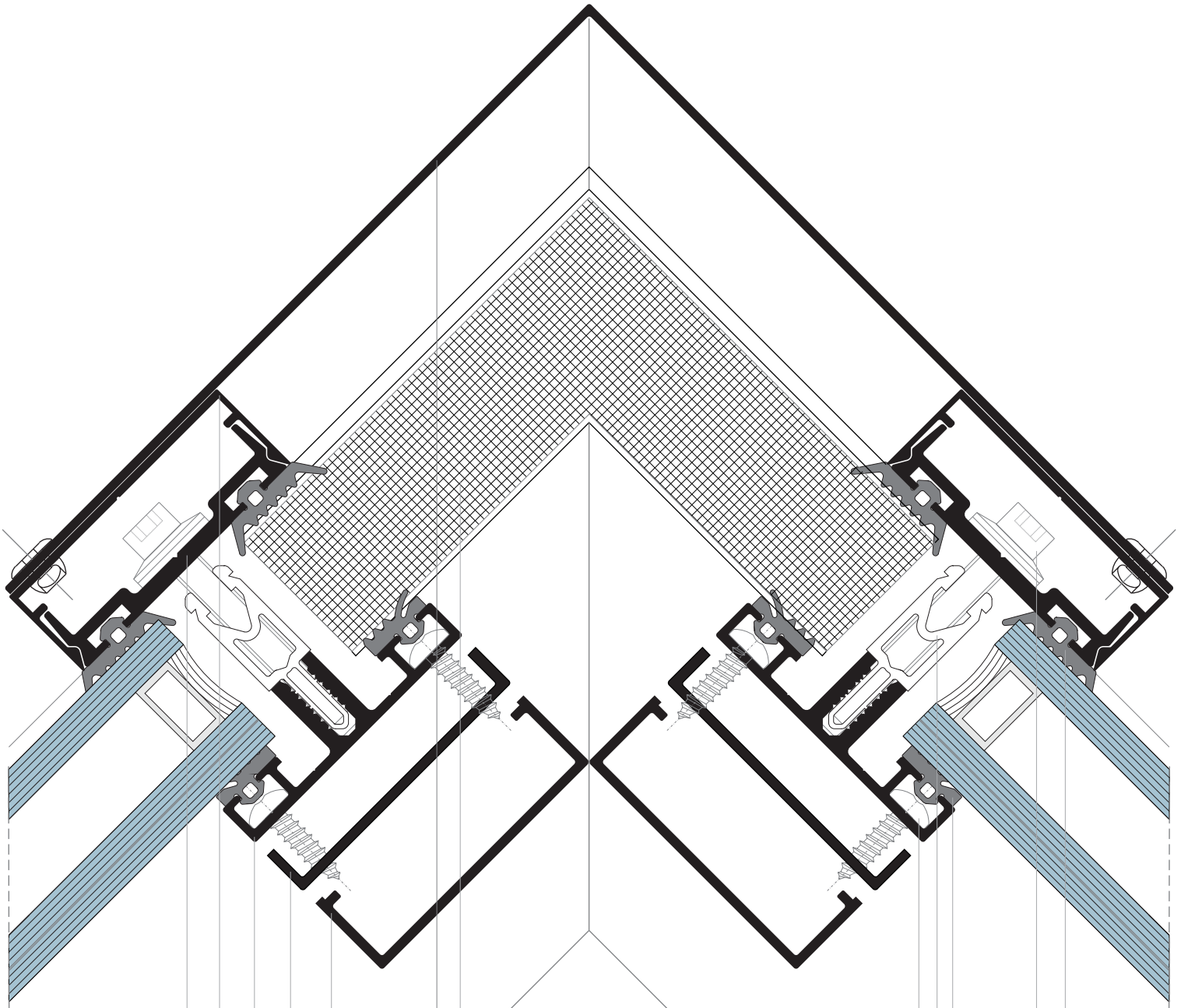
4,2 x 16mm

M70011

M70012







Thermal Insulation

Aluminium Sheet

M70012

M70011

M70010

M500063

M70025

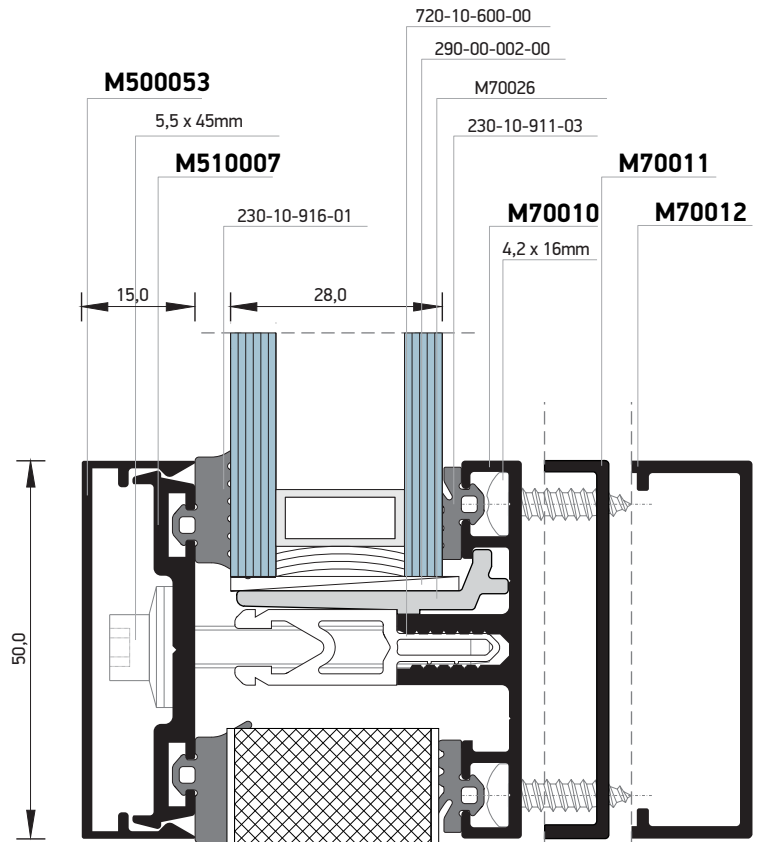
4,2 x 16mm

720-10-600-00

230-10-911-03

5,5 x 45mm

230-10-929-01



Thermal Insulation

M500082

5,5 x 45mm

M500081

230-50-051-01

290-00-002-00

720-10-600-00

M70026

230-50-052-03

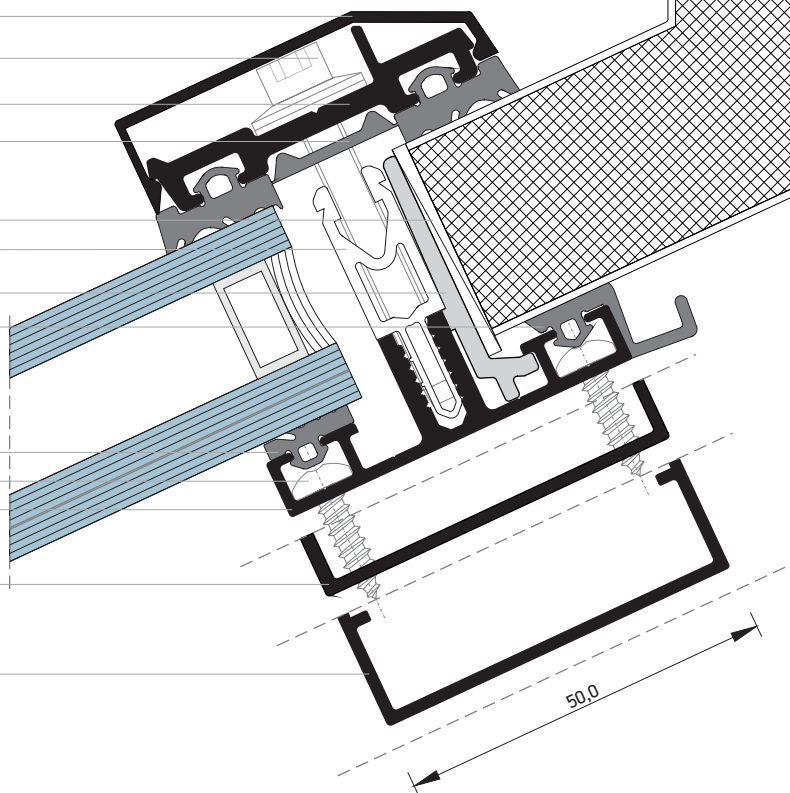
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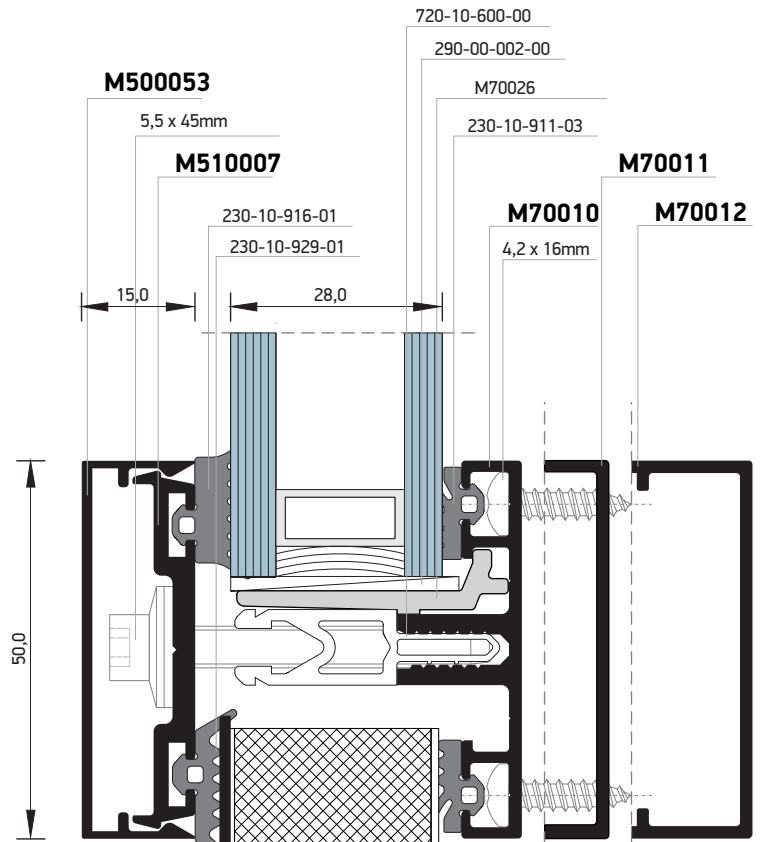
4,2 x 16mm

M70010

M70011

M70012





Aluminium Sheet

Thermal Insulation

M500063

5,5 x 45mm

M500025

290-00-002-00

230-10-929-01

720-10-600-00

M70026

230-50-052-03

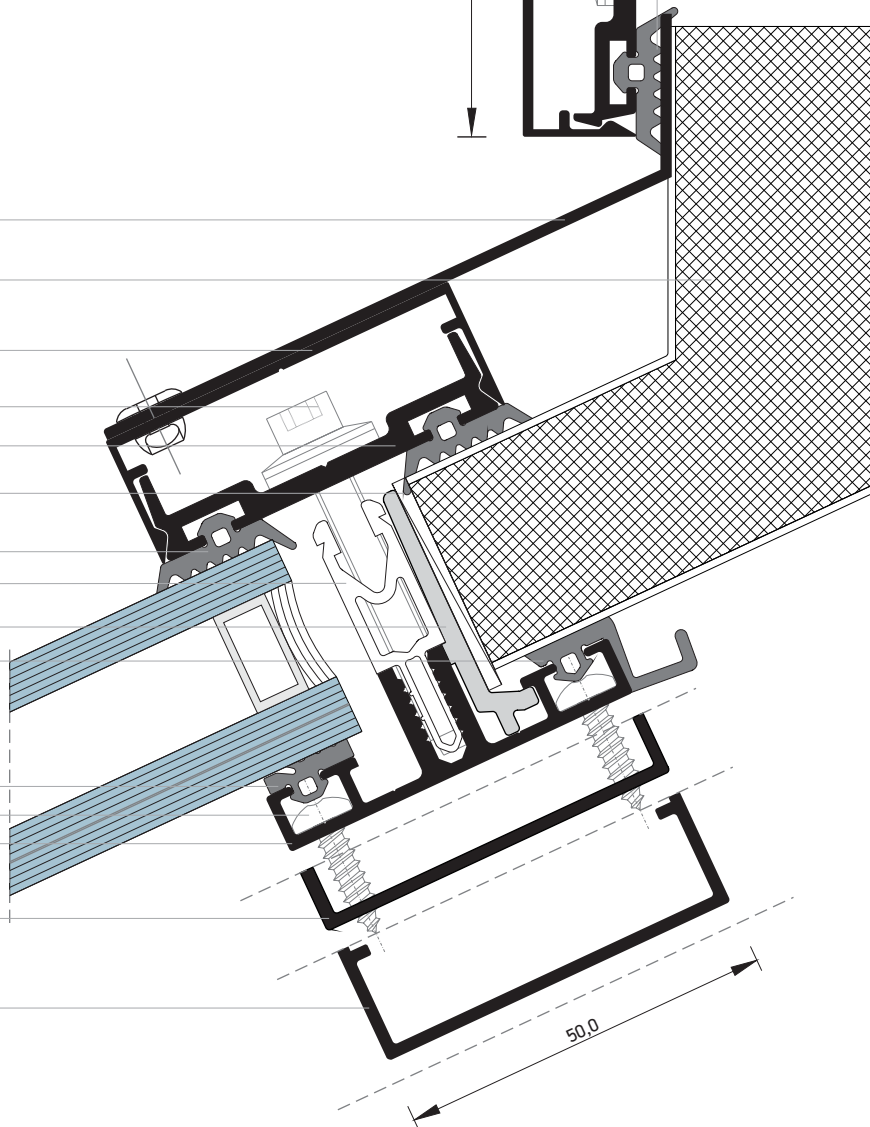
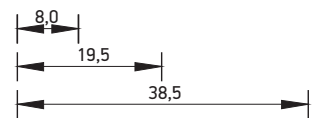
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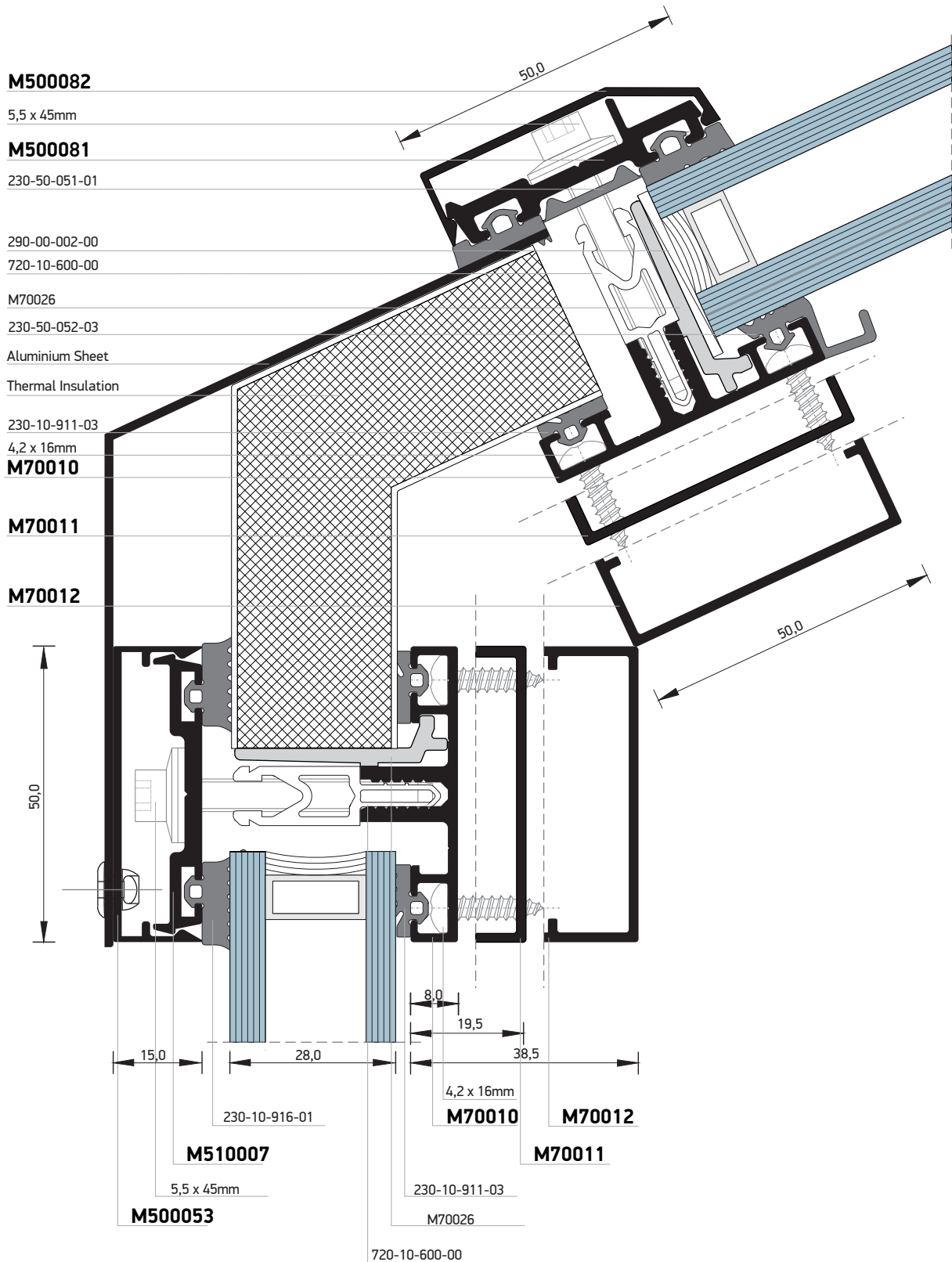
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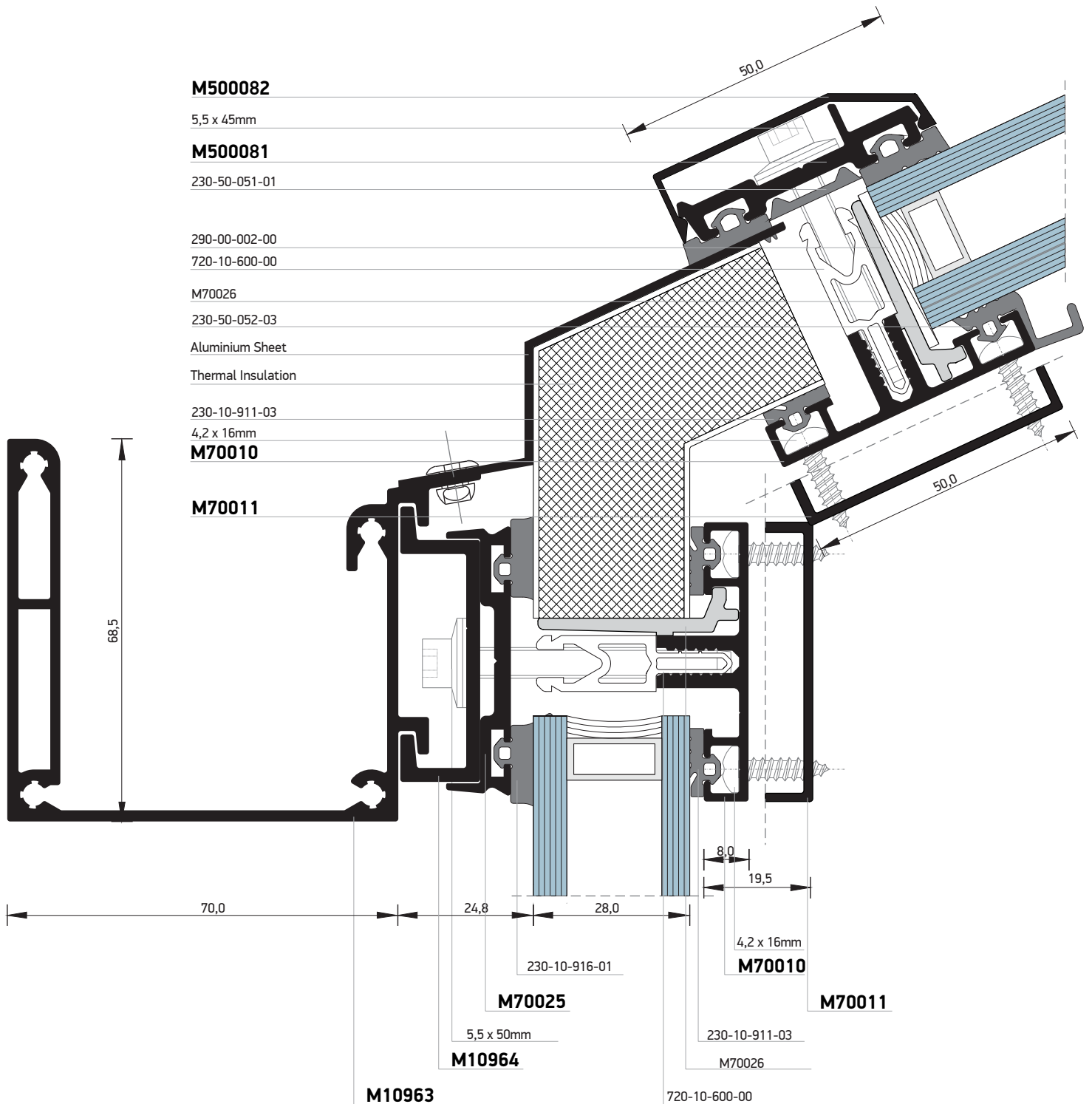
M70010

M70011

M70012







5,5 x 45mm

290-00-002-00

720-10-600-00

M10841

230-10-929-01

230-10-911-03

113-33-156-00

220-00-930-01

113-11-196-00

140-11-190-00

220-00-930-01

M10840

113-23-270-00

140-23-270-00

113-33-196-00

210-11-000-01

M10837

M500082

5,5 x 45mm

M500081

230-50-051-01

180-25-010-00

290-00-002-00

720-10-600-00

113-33-121-00

230-50-052-03

M70026

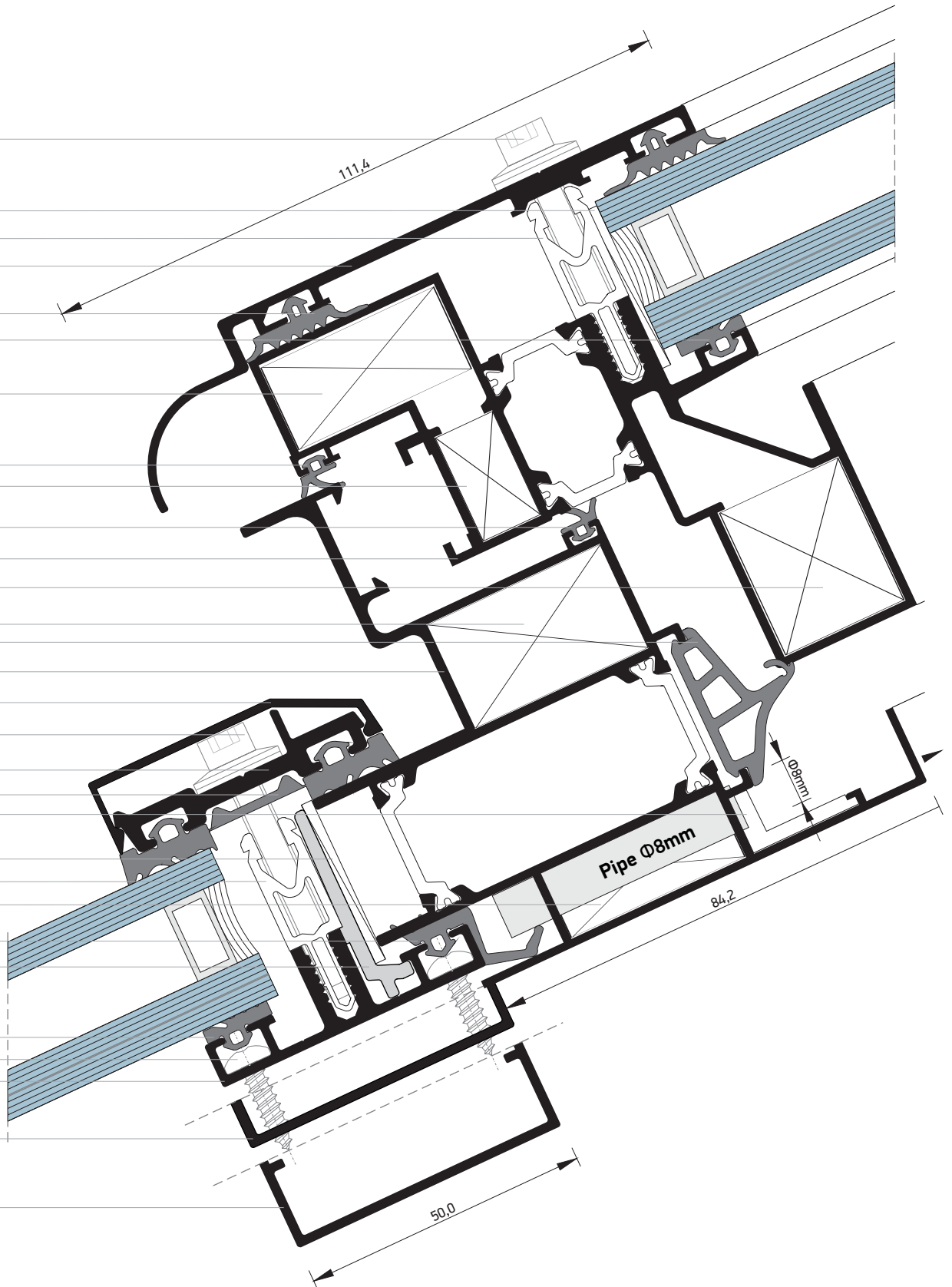
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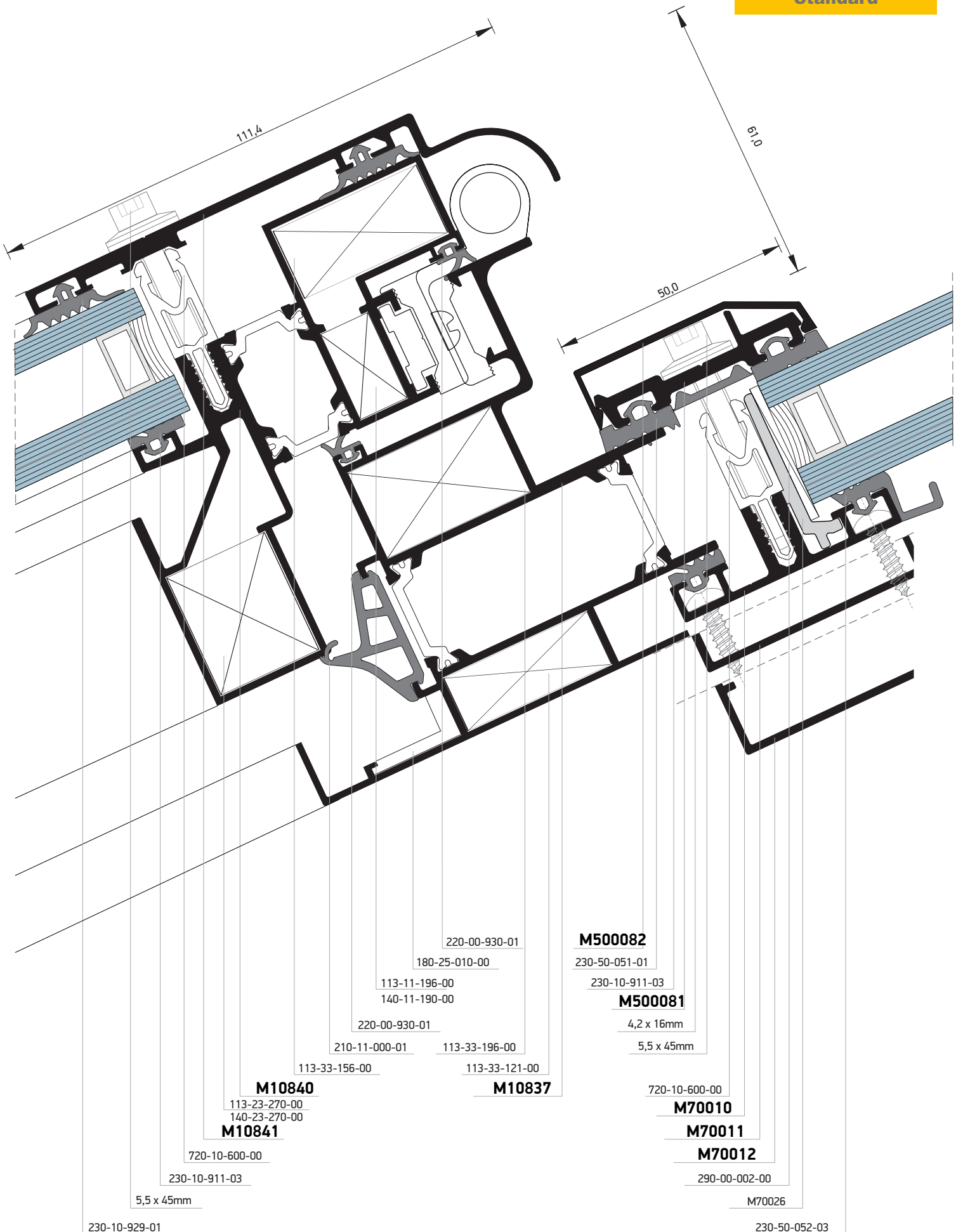
4,2 x 16mm

M70010

M70011

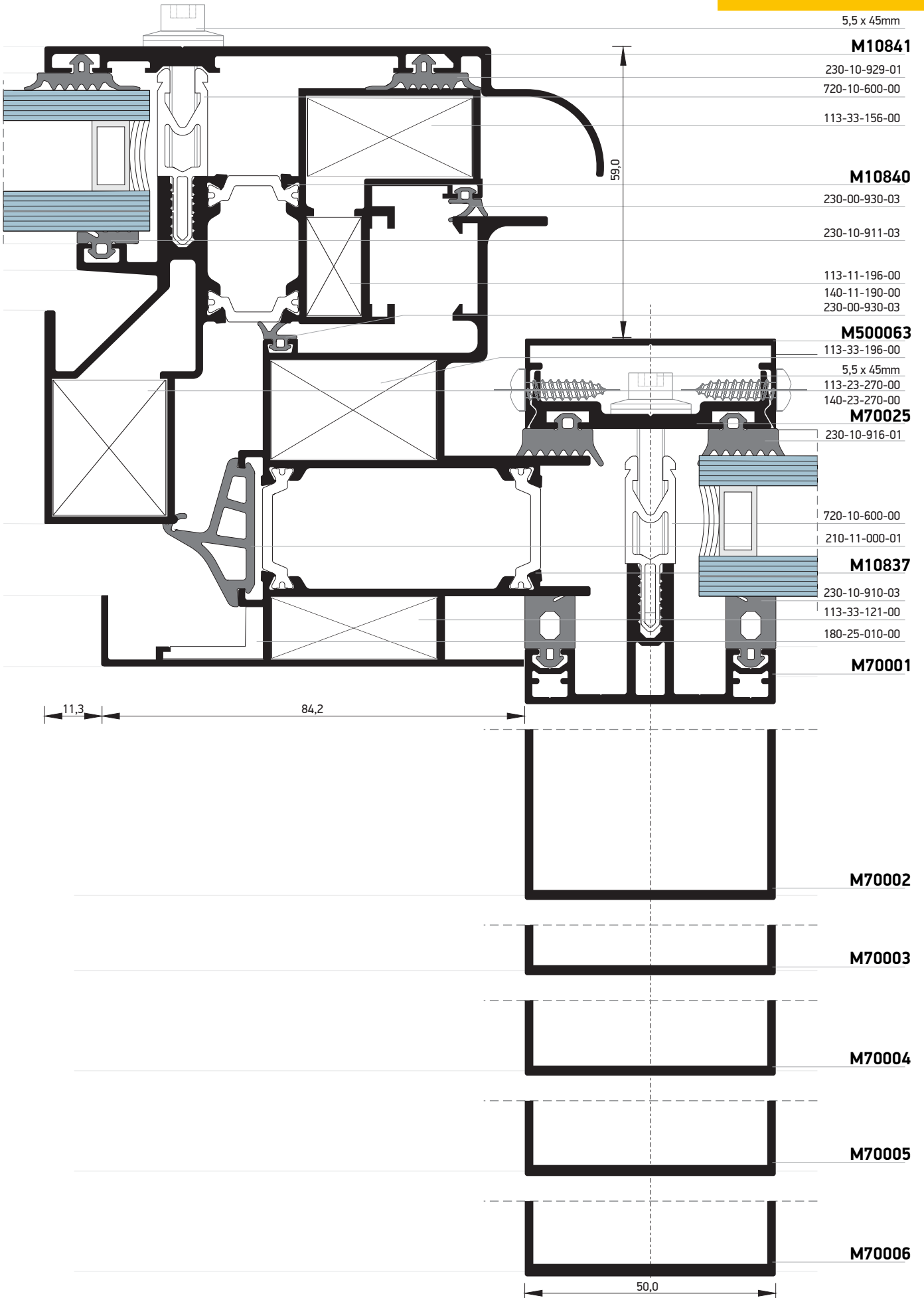
M70012





Standard

5,5 x 45mm



5,5 x 45mm

M10841

230-10-929-01
720-10-600-00

113-33-156-00

M10840

230-00-930-03

230-10-911-03

113-11-196-00

140-11-190-00
230-00-930-03

M500063

113-33-196-00

5,5 x 45mm

113-23-270-00

140-23-270-00

M70025

230-10-916-01

720-10-600-00

210-11-000-01

M10837

230-10-910-03

113-33-121-00

180-25-010-00

M70001

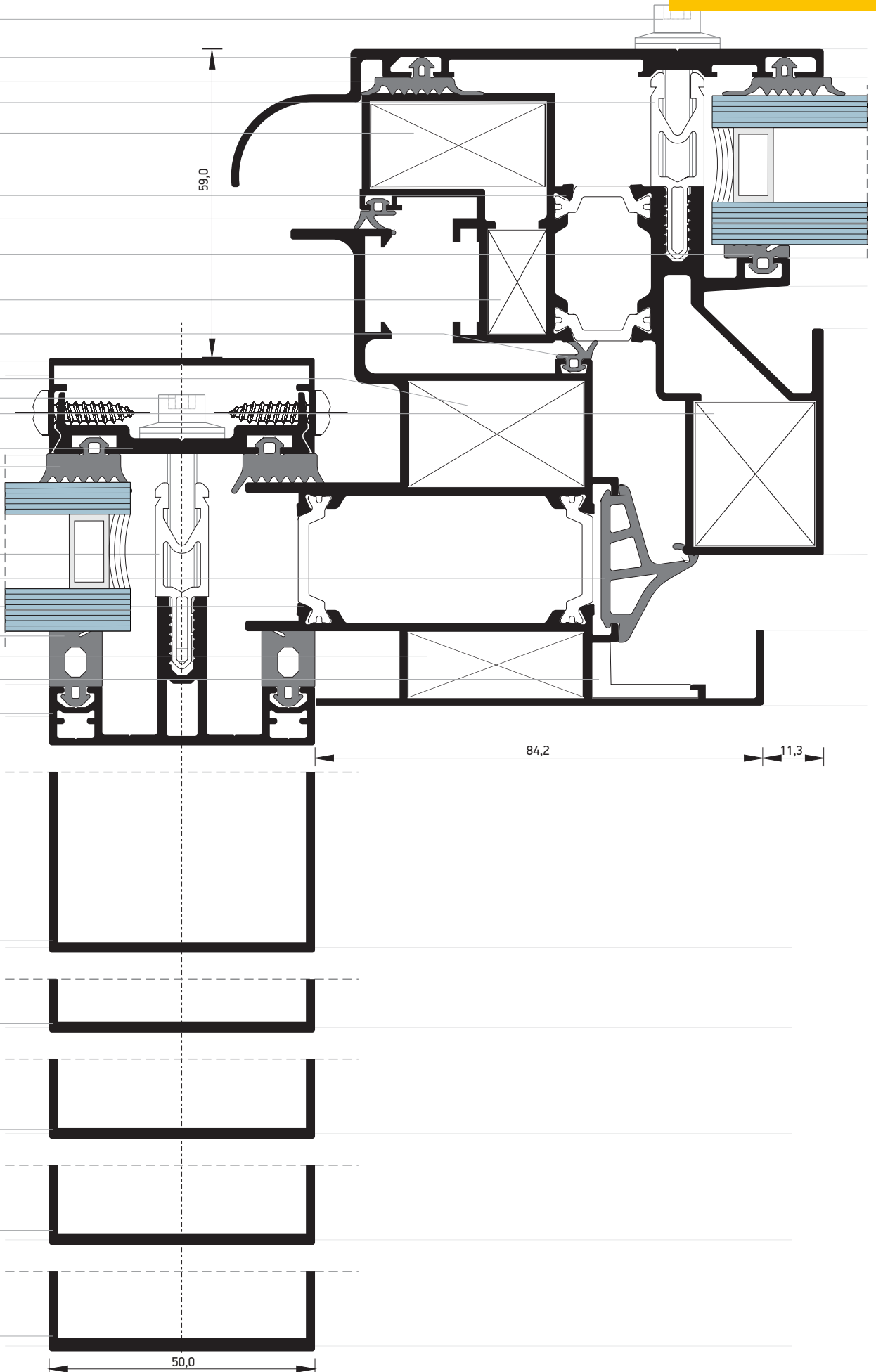
M70002

M70003

M70004

M70005

M70006



M500063

230-10-929-01

230-10-801-01

M9351

M70129

720-10-600-00

113-13-274-00

125-13-274-00

250-65-016-01

220-00-930-01

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M10930

220-15-001-01

M70026

290-00-002-00

M70127

M70124

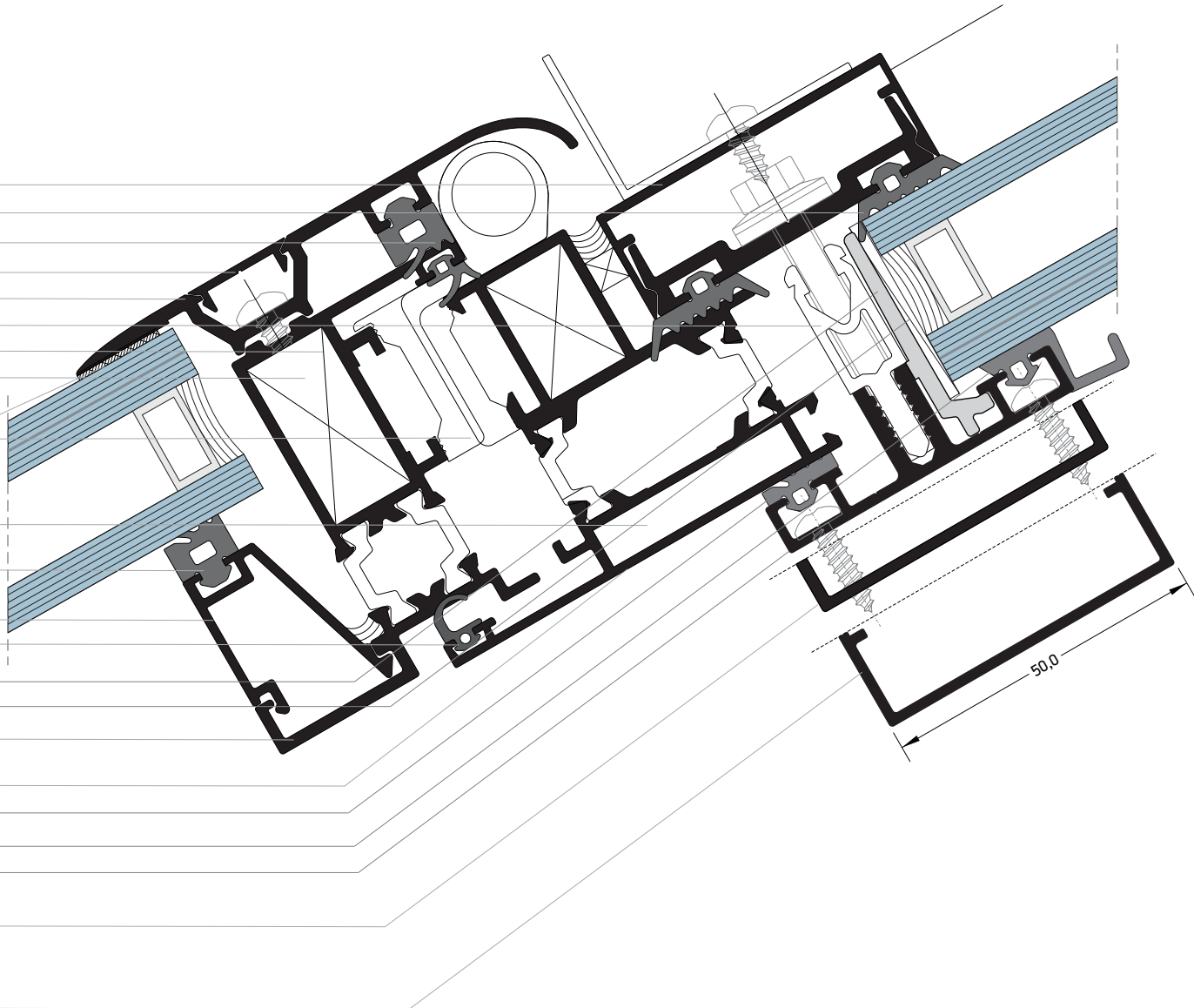
230-10-911-03

230-50-052-03

M70010

M70011

M70012



250-65-016-01

M9351

M70129

230-10-801-01

M10930

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125-13-274-00

M70127

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M500063

M70124

230-10-929-01

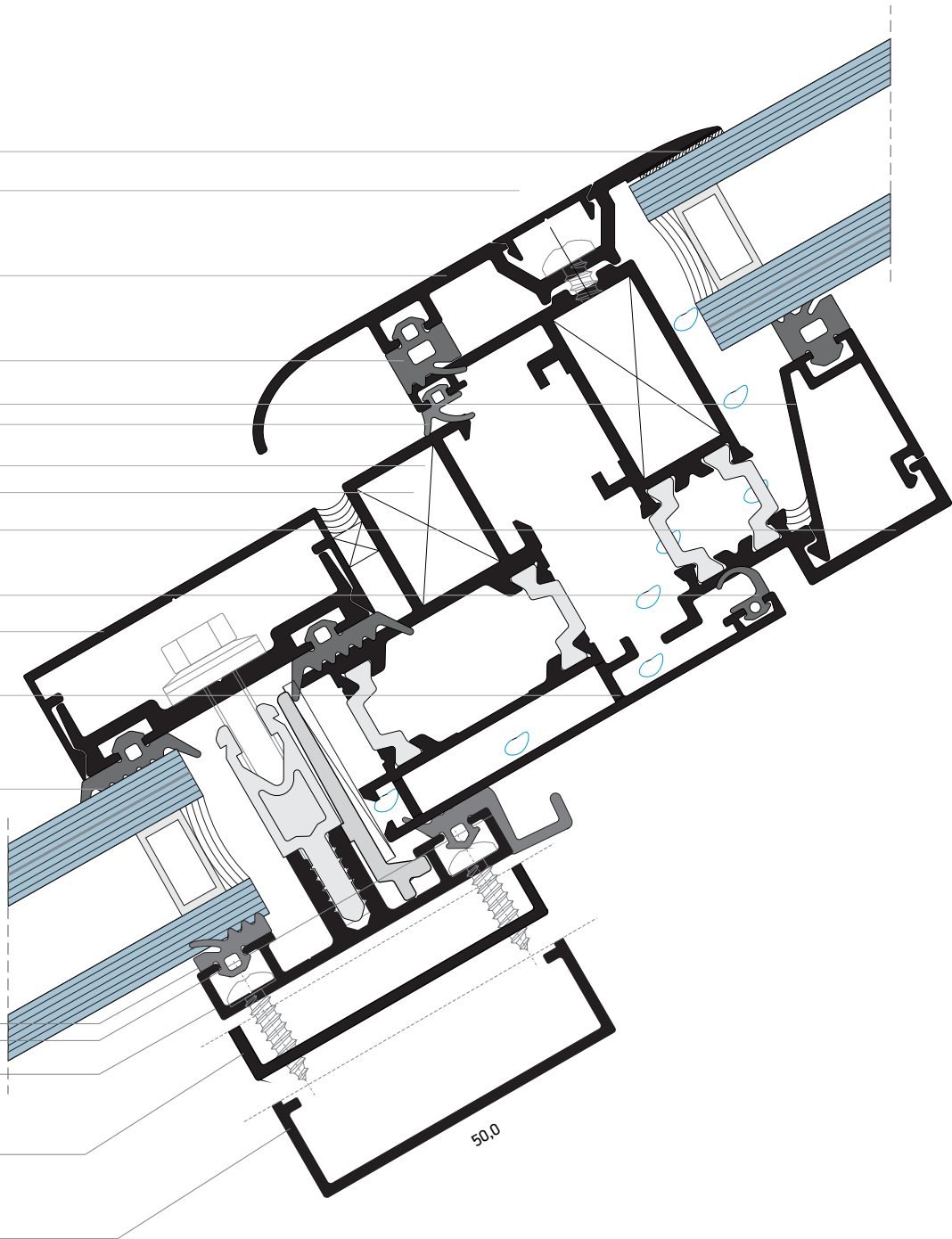
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M70010

M70011

M70012



250-65-016-01

M9351

M70129

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230-10-929-01

230-10-910-01

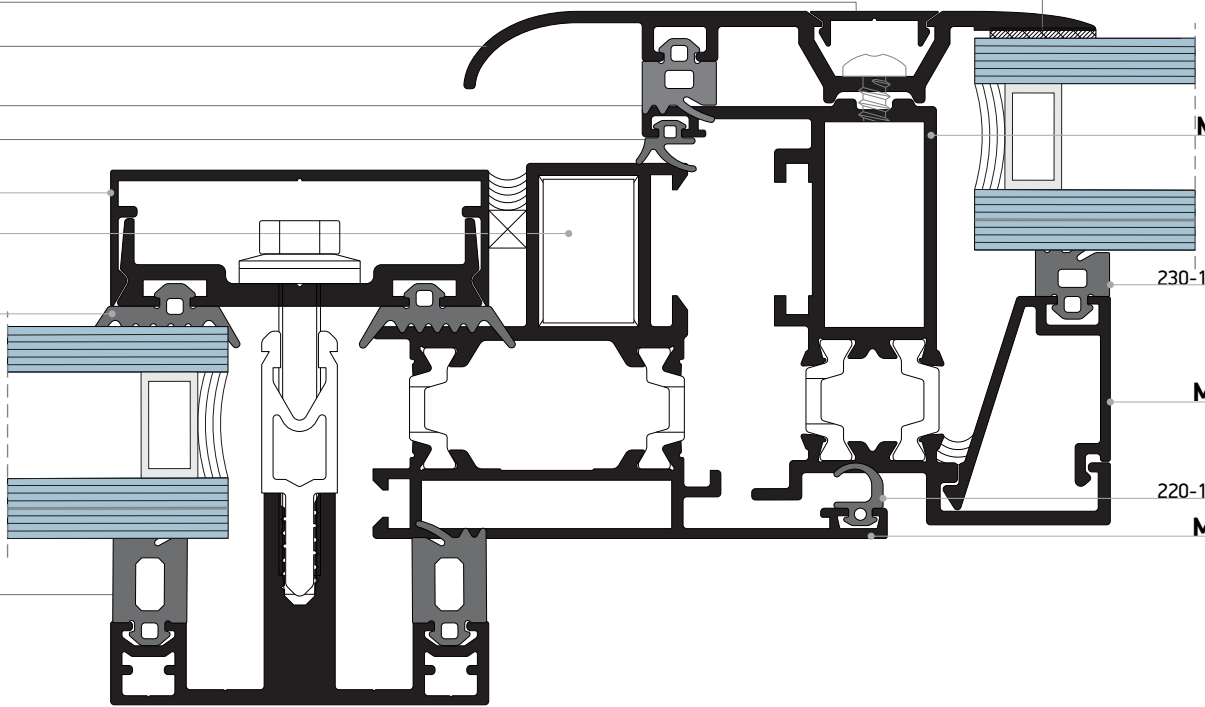
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230-10-801-01

M10930

220-15-001-01

M70124



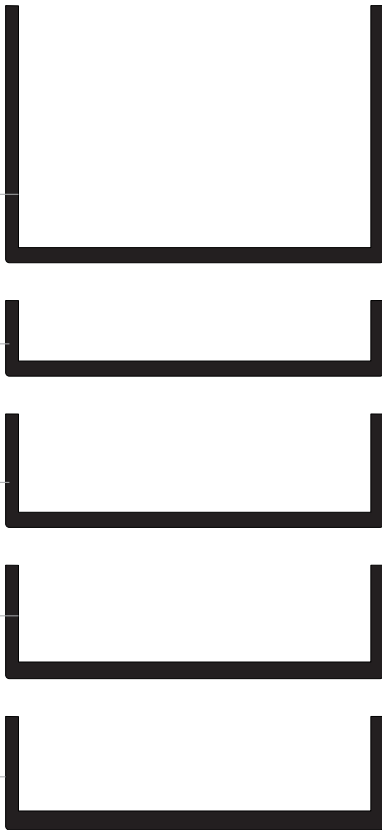
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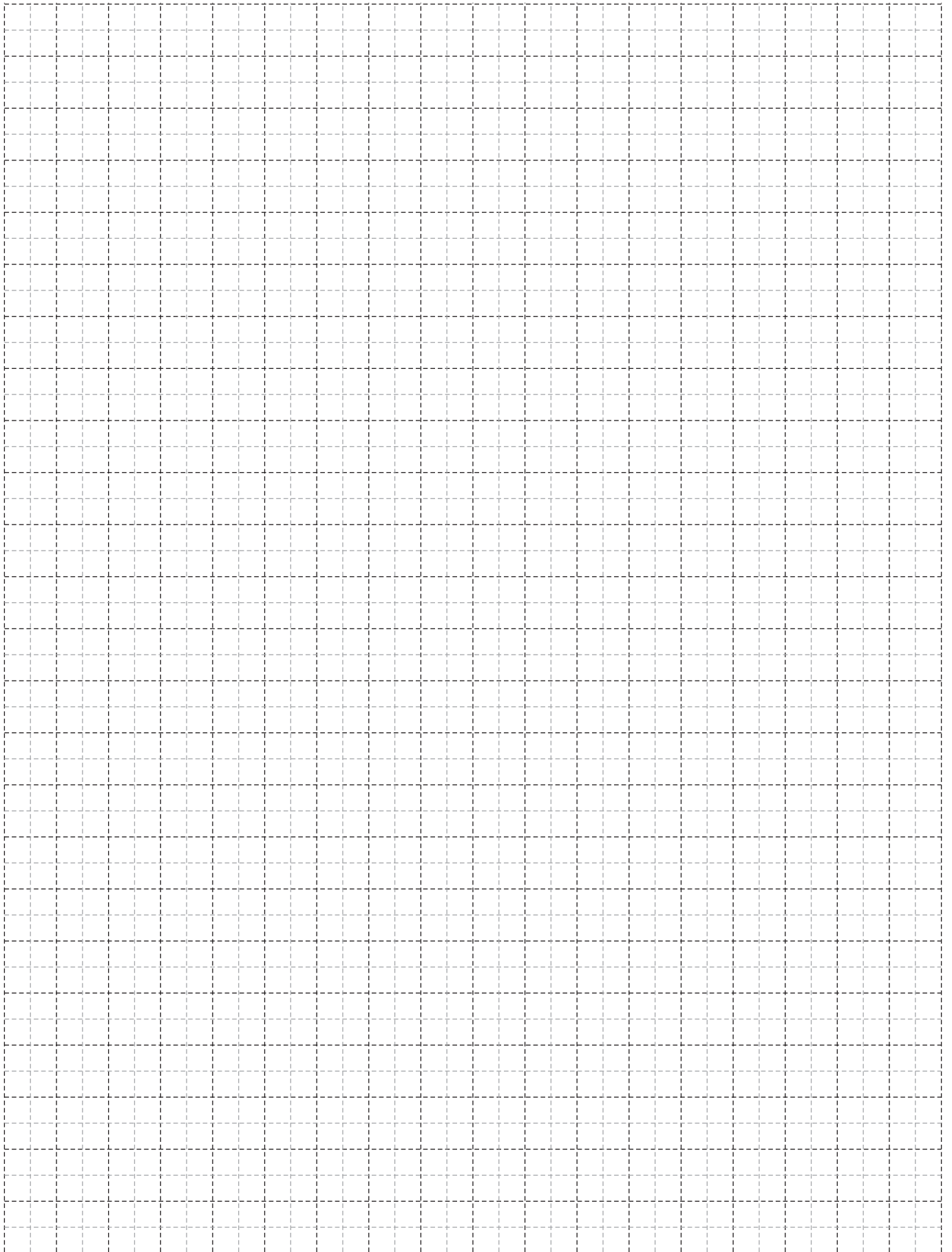
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M70004

M70005

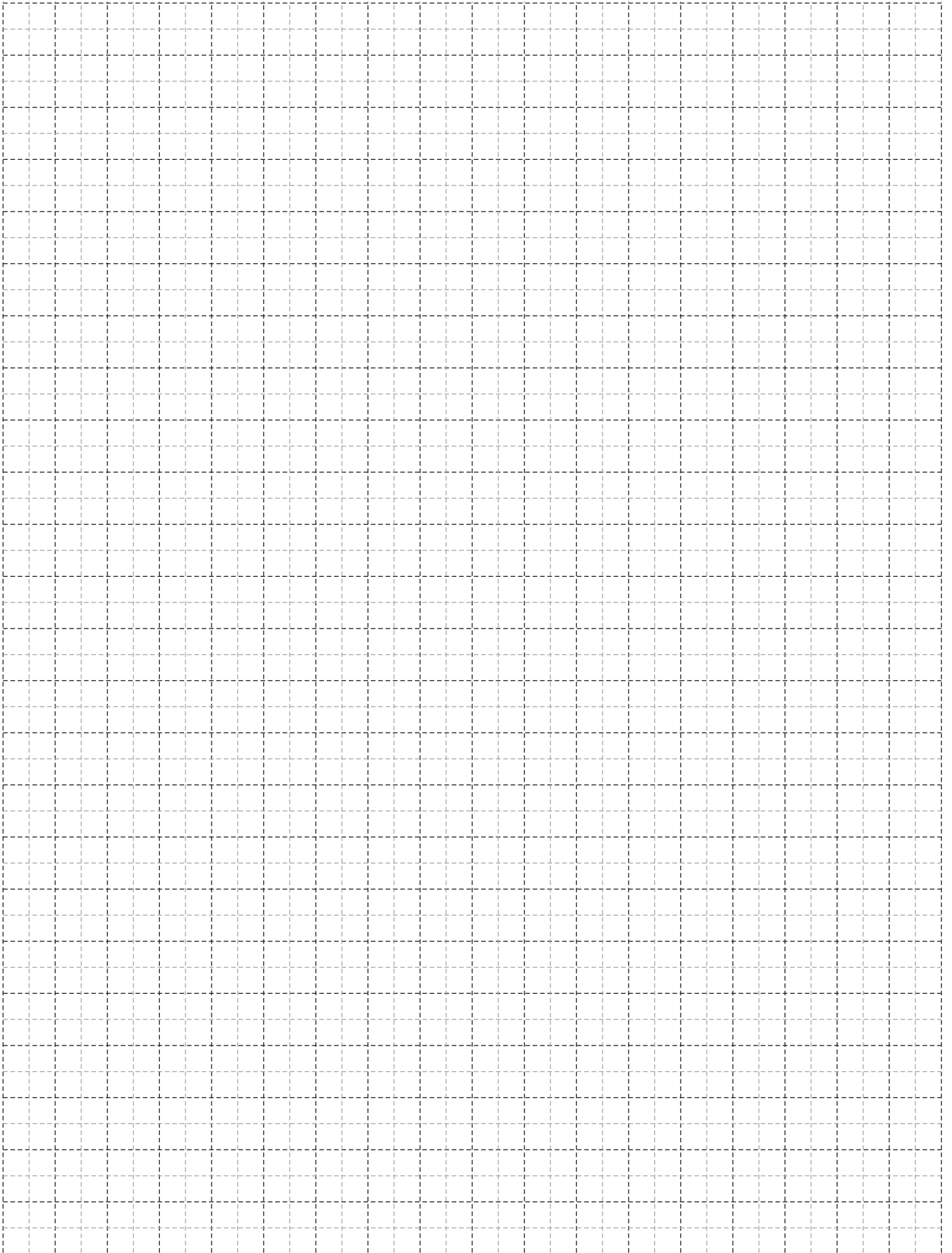
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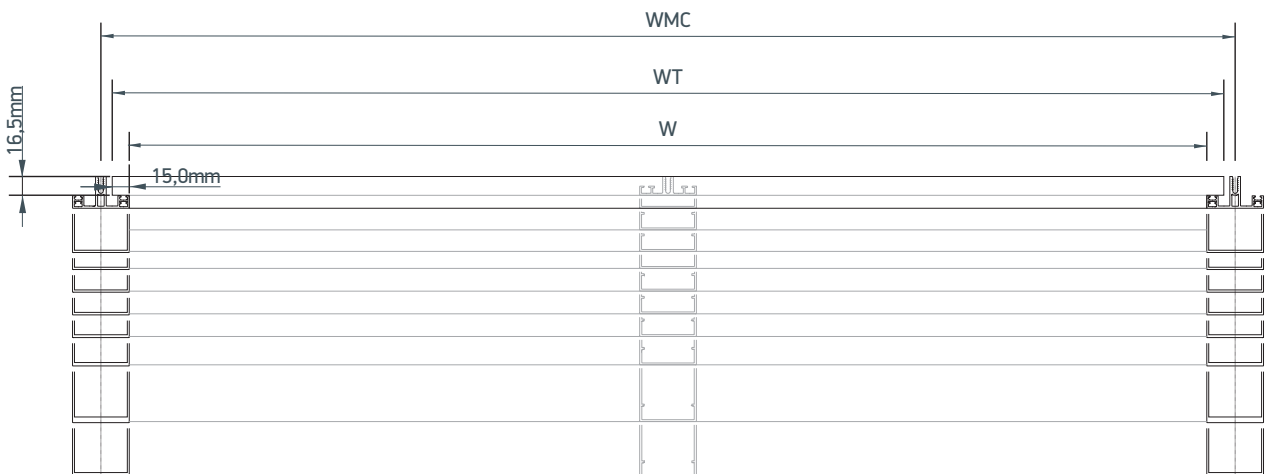
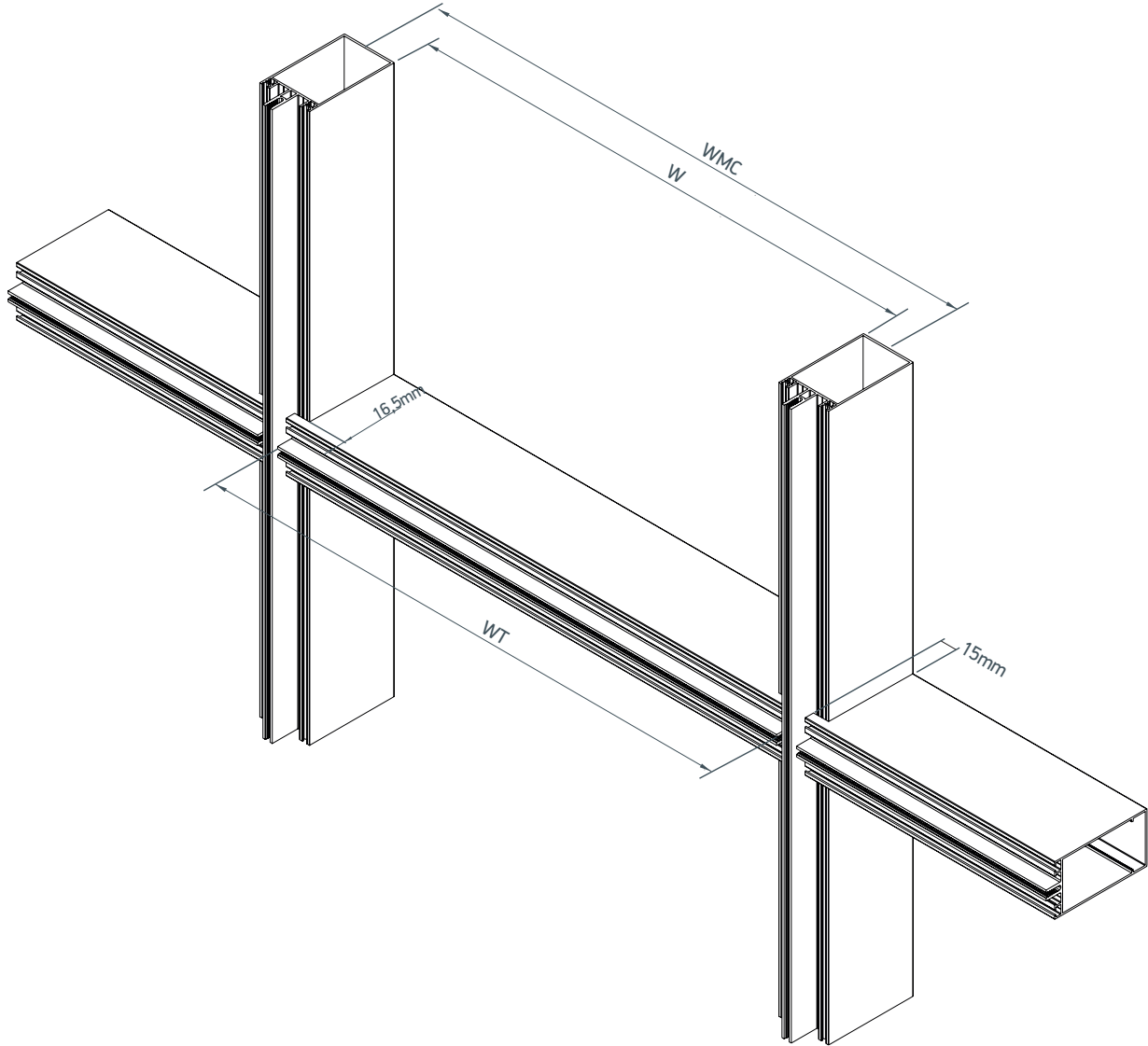




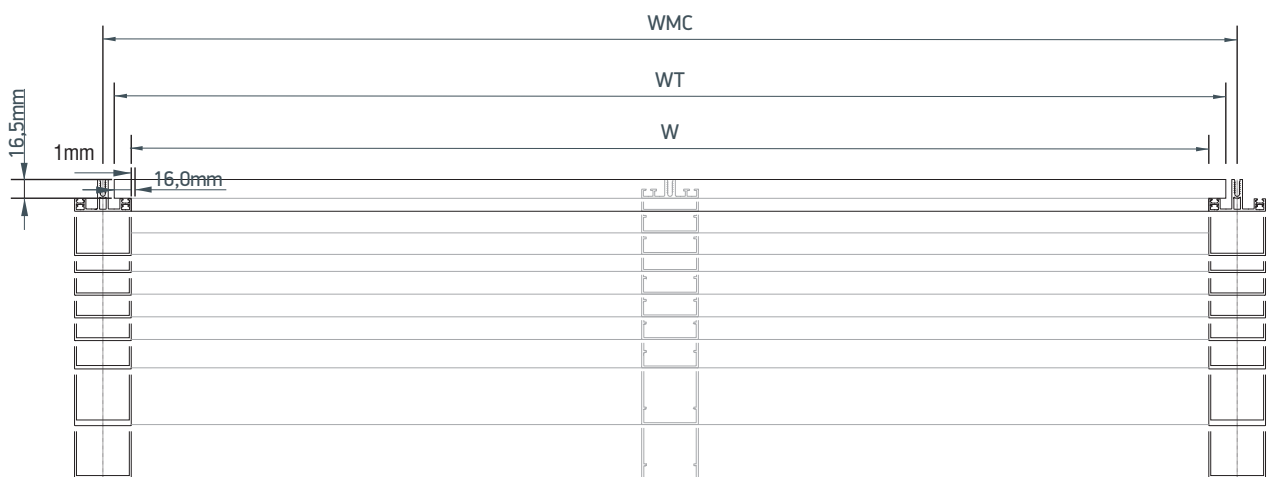
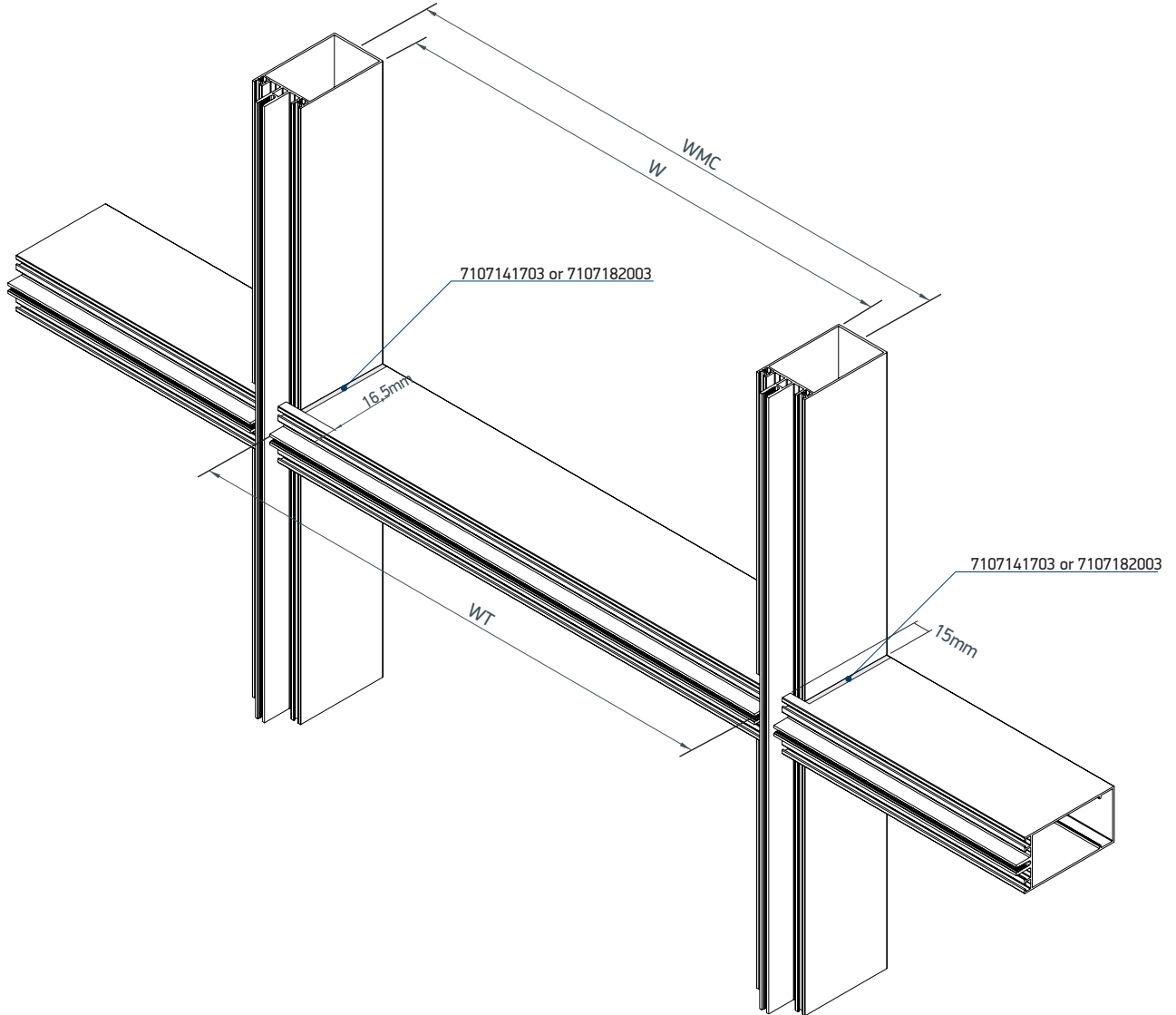
ΚΟΠΕΣ CUTTINGS



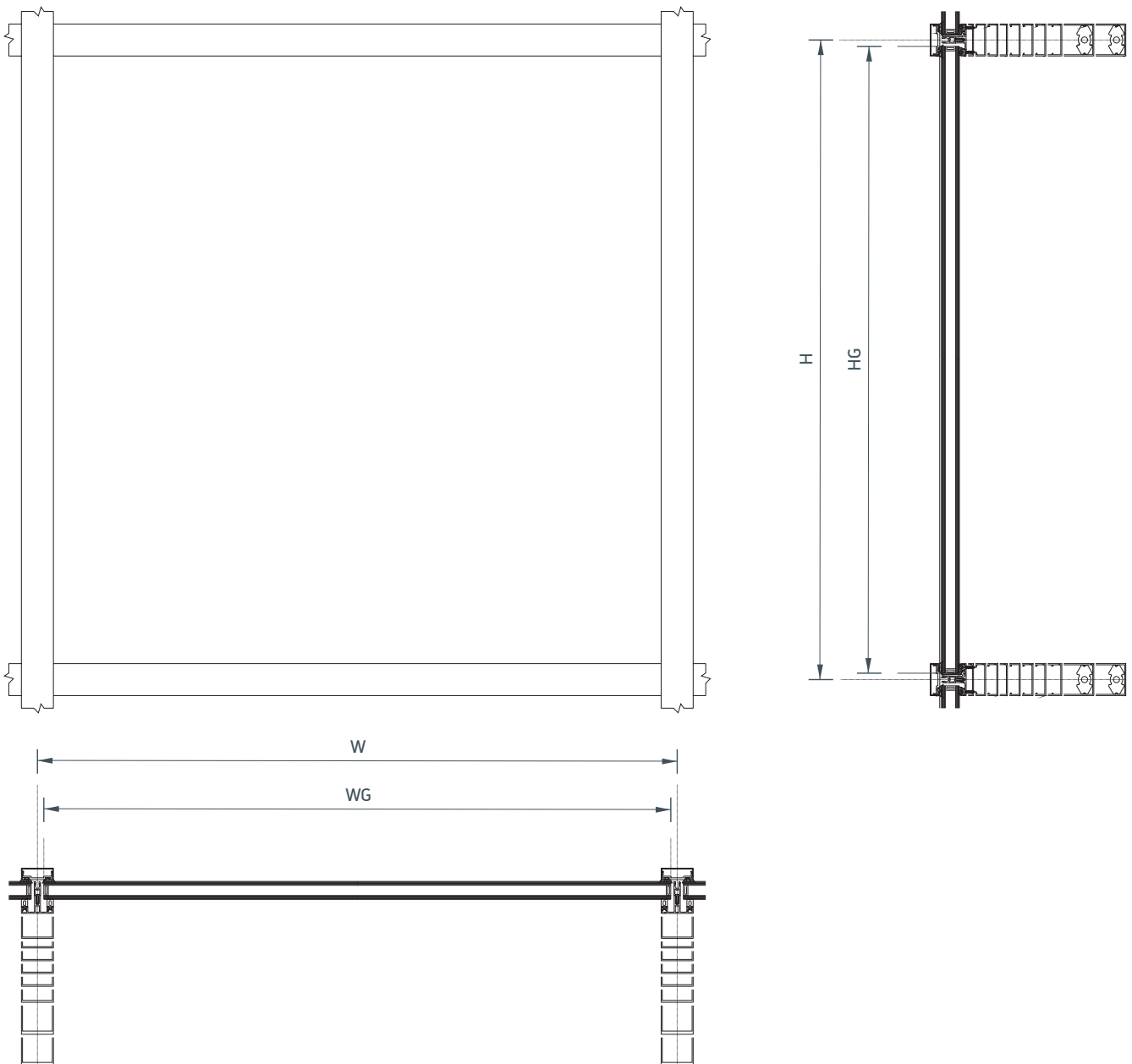
Πλάτος κέντρο κοιλίας - κέντρο κοιλίας Mullion center - mullion center width	WMC
Πλάτος κοιλία - κοιλία , μέσα Mullion - mullion width inside	W
Πλάτος τραβερσας Transom width	$WT=W+30mm$
Πλάτος τραβερσας Transom width	$WT = WMC - 20,0mm$



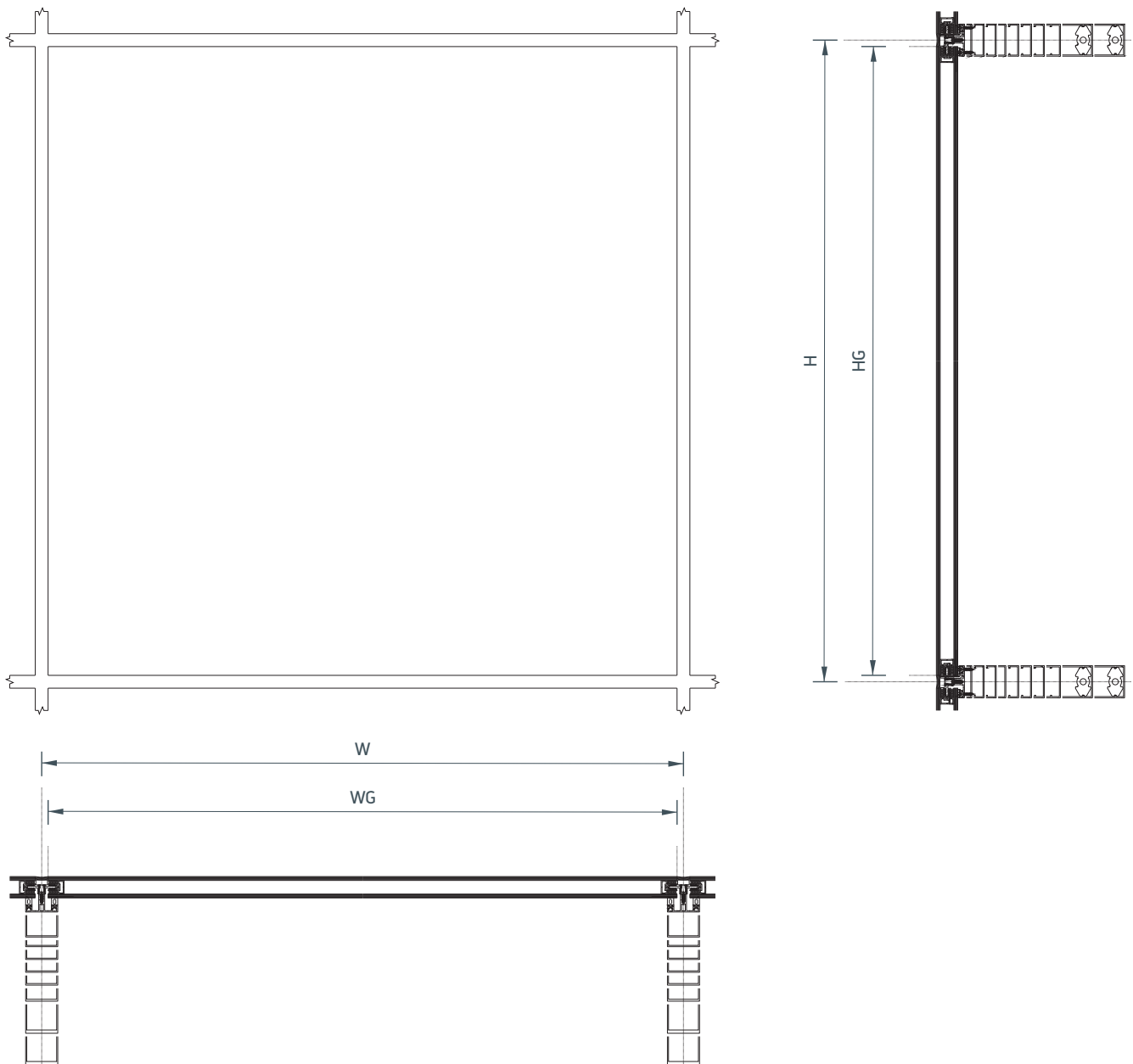
Πλάτος κέντρο κολόνας - κέντρο κολόνας Mullion center - mullion center width	WMC
Πλάτος κολόνα - κολόνα , μέσα Mullion - mullion width inside	W
Πλάτος τραβερσας Transom width	WT=W+30mm
Πλάτος τραβερσας Transom width	WT = WMC - 20,0mm



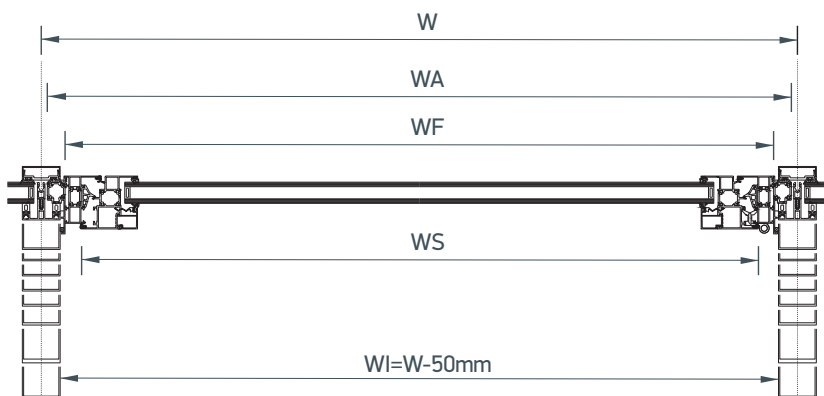
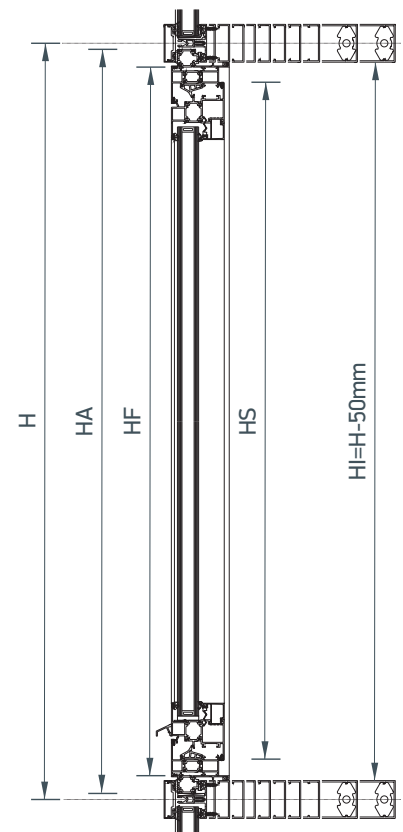
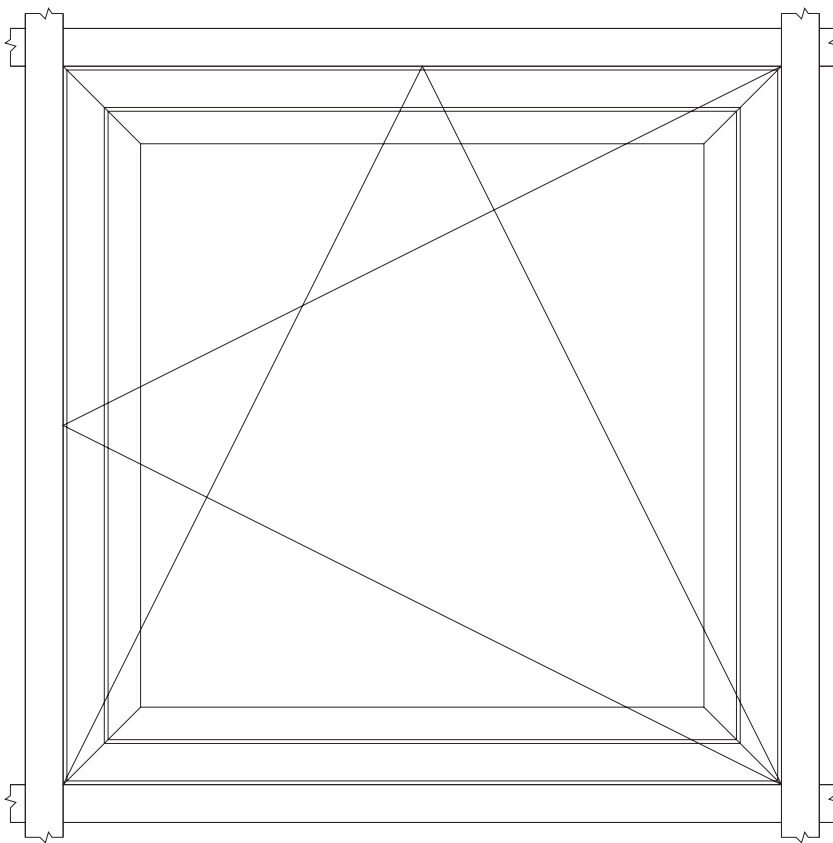
Πλάτος κέντρο κολόνας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος Τζαμιού Glazing width	WG=W-20,0mm
Ύψος Τζαμιού Glazing height	HG=H-20,0mm



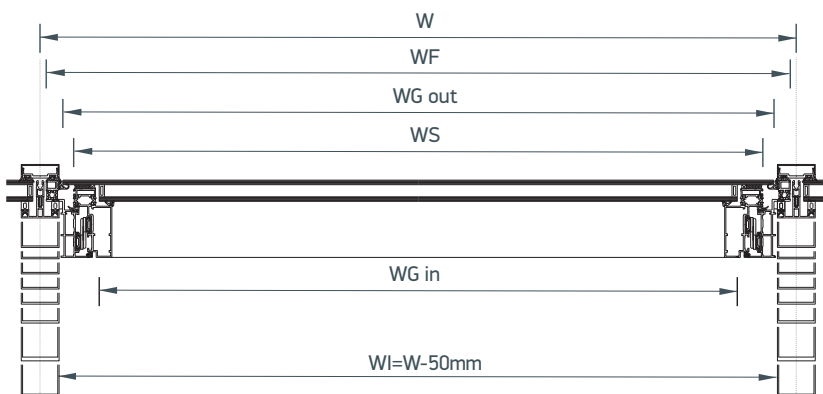
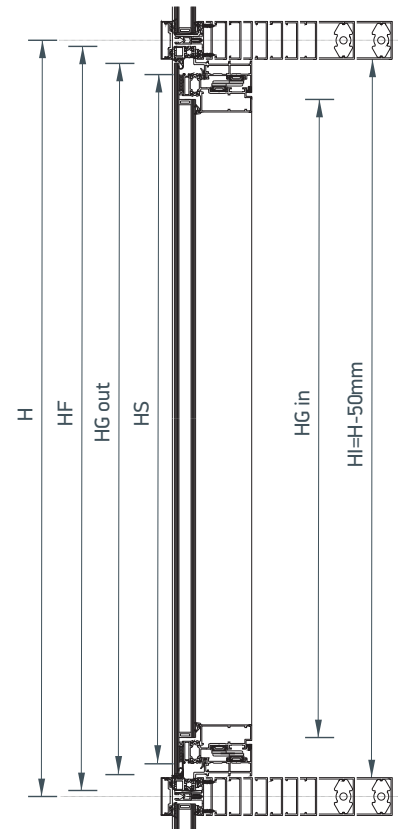
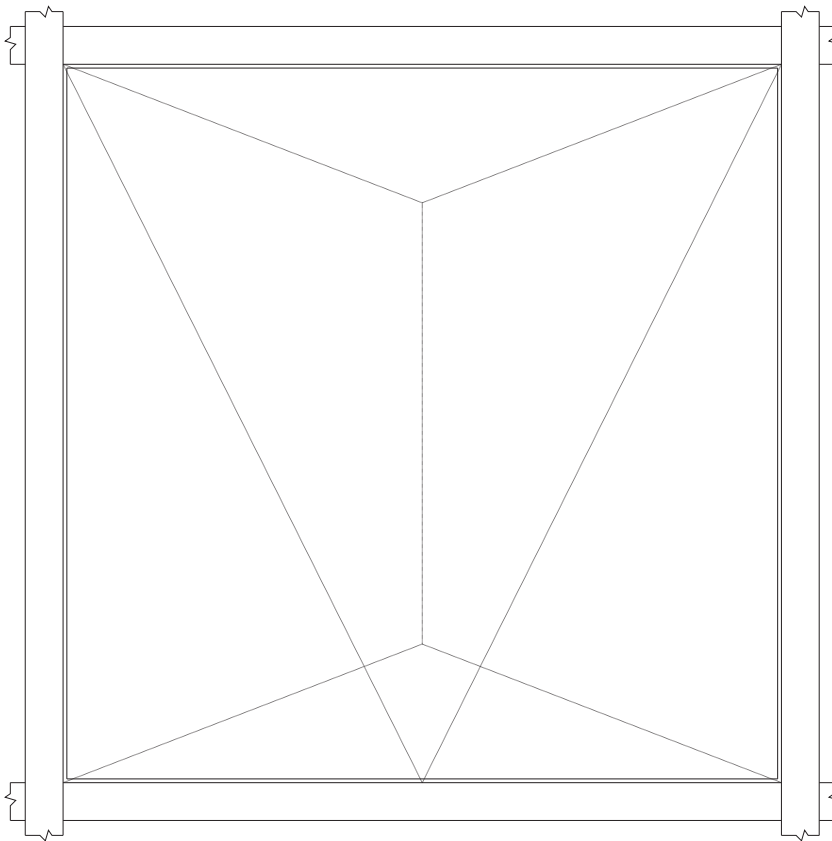
Πλάτος κέντρο κολόνας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος Τζαμιού Glazing width	WG=W-20,0mm
Ύψος Τζαμιού Glazing height	HG=H-20,0mm



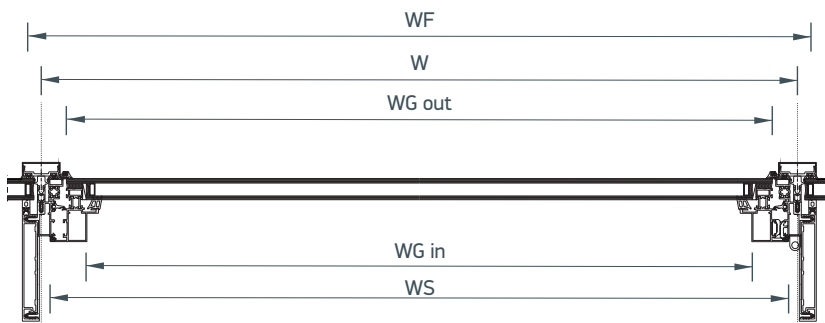
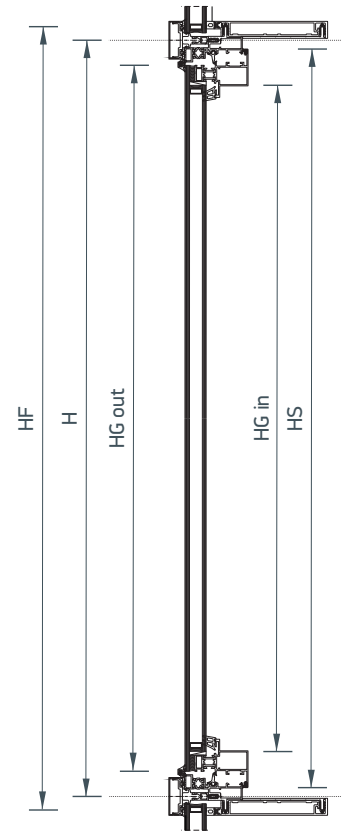
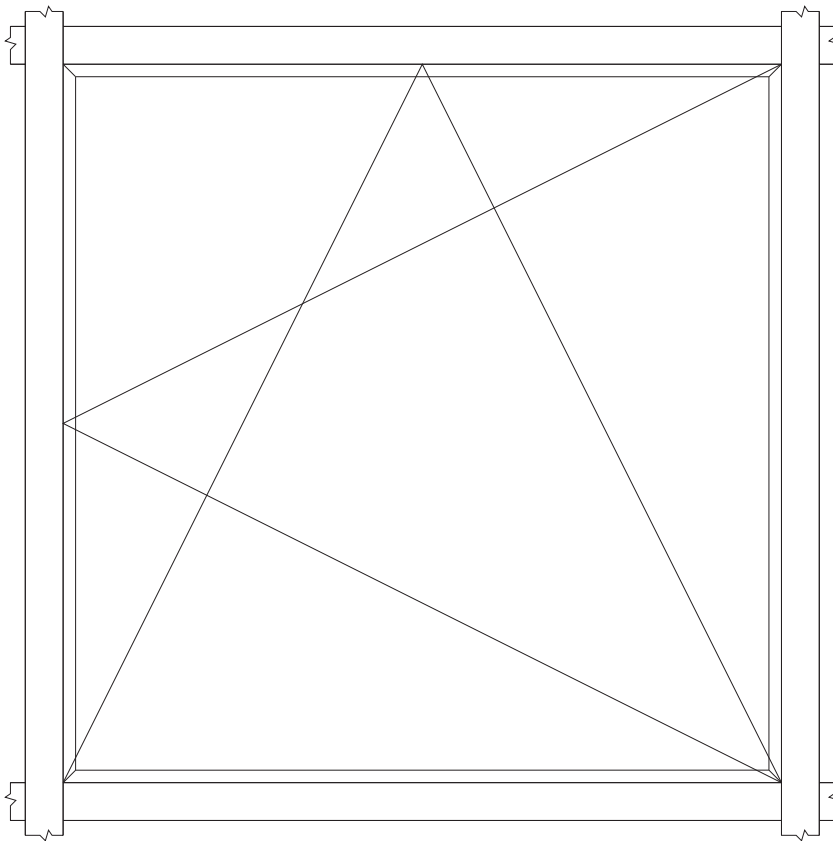
Πλάτος κέντρο κολόνας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος Πρόσθετου Additional profile width	WA=W-16,0mm
Ύψος Πρόσθετου Additional profile height	HA=H-16,0mm
Πλάτος Κάσας Frame width	WF=W-63,0mm
Ύψος Κάσας Frame height	HF=H-63,0mm
Πλάτος Φύλλου Sash width	WS=W-103,0mm
Ύψος Φύλλου Sash height	HS=H-103,0mm



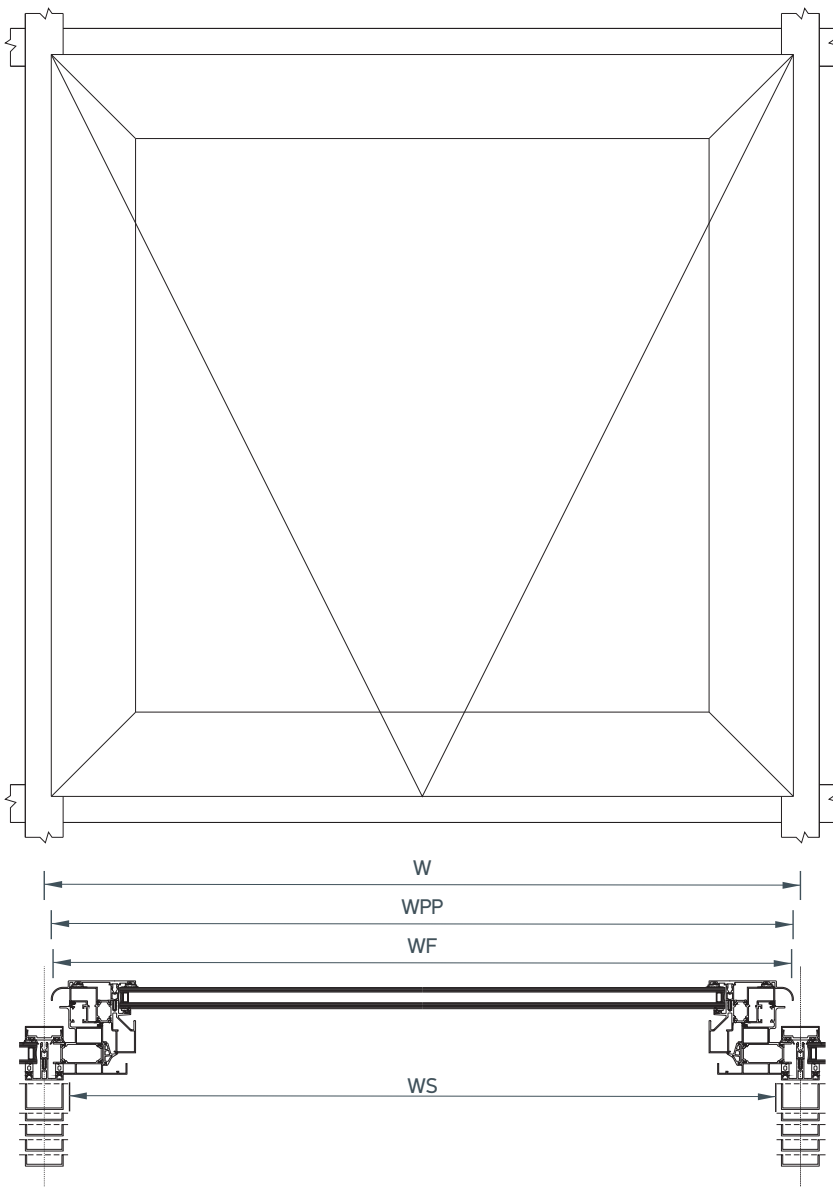
Πλάτος κέντρο κοιλόντας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος Κάσας Frame width	WF=W-16,0mm
Ύψος Κάσας Frame height	HF=H-16,0mm
Πλάτος Φύλλου Sash width	WS=W-88,6mm
Ύψος Φύλλου Sash height	HS=H-88,6mm
Πλάτος Τζαμιού (έξω) Glazing width (out)	WG out = W-60,0mm
Ύψος Τζαμιού (έξω) Glazing height (out)	HG out=H-60,0mm
Πλάτος Τζαμιού (μέσα) Glazing width (in)	WG in = W-156,2mm
Ύψος Τζαμιού (μέσα) Glazing height (in)	HG in=H-156,2mm



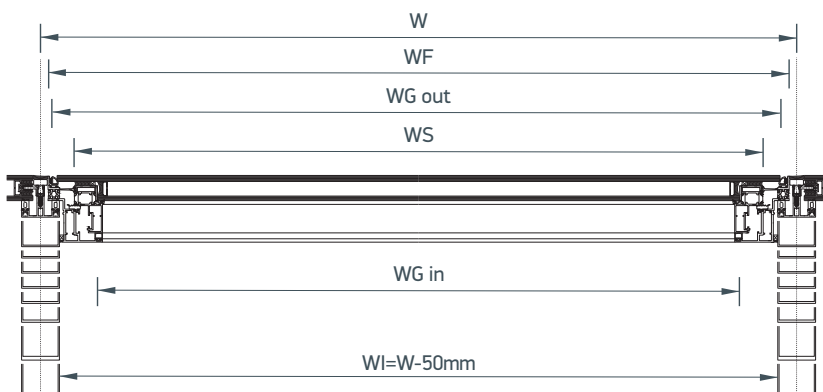
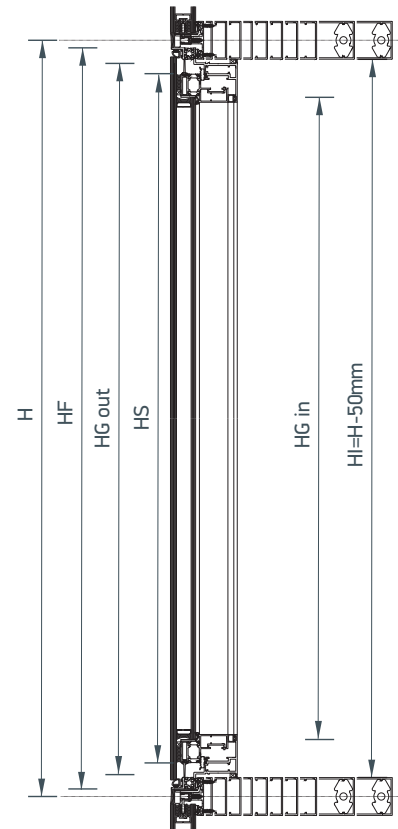
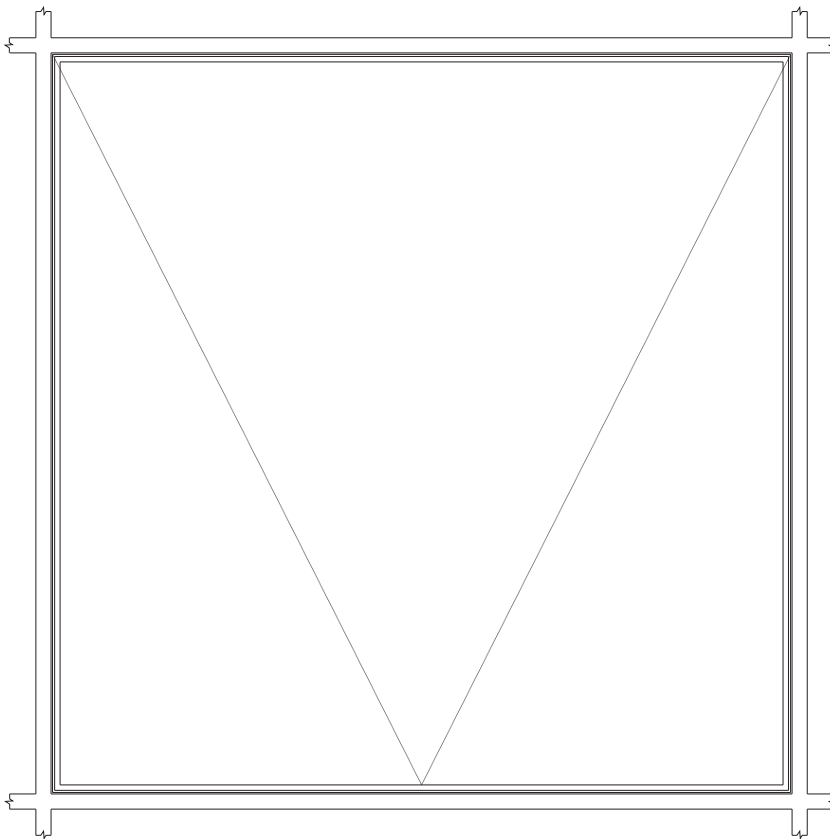
Πλάτος κέντρο κοιλόννας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος Κάσας Frame width	$WF=W+35,6\text{mm}$
Ύψος Κάσας Frame height	$HF=H+35,6,0\text{mm}$
Πλάτος Φύλλου Sash width	$WS=WF-59,2\text{mm}=W-23,6\text{mm}$
Ύψος Φύλλου Sash height	$HS=HF-59,2\text{mm}=H-23,6\text{mm}$
Πλάτος Τζαμιού (έξω) Glazing width (out)	$WG\text{ out} = WS-47,0\text{mm}$
Ύψος Τζαμιού (έξω) Glazing height (out)	$HG\text{ out}=HS-47,0\text{mm}$
Πλάτος Τζαμιού (μέσα) Glazing width (in)	$WG\text{ in}= WG\text{ out}-49,0\text{mm}=WS-96,0\text{mm}$
Ύψος Τζαμιού (μέσα) Glazing height (in)	$HG\text{ in}=HG\text{ out}-49,0\text{mm}=HS-96,0\text{mm}$



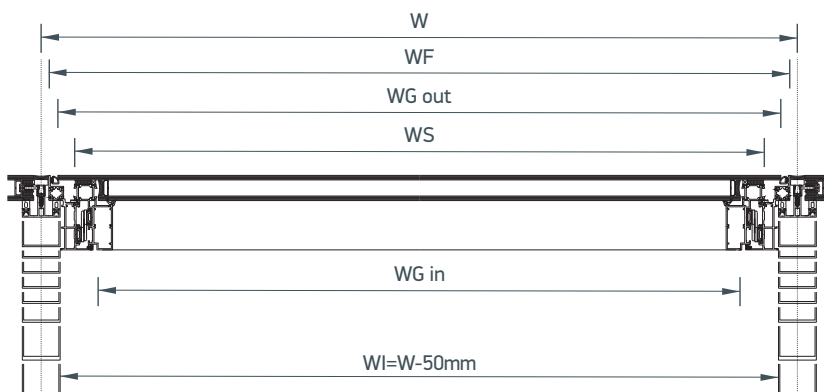
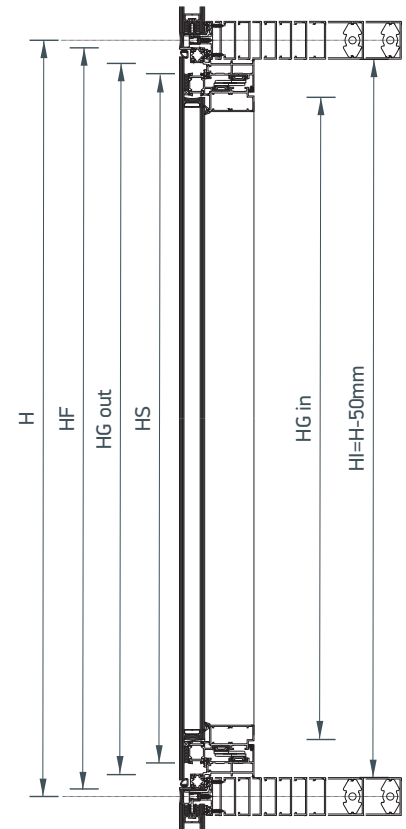
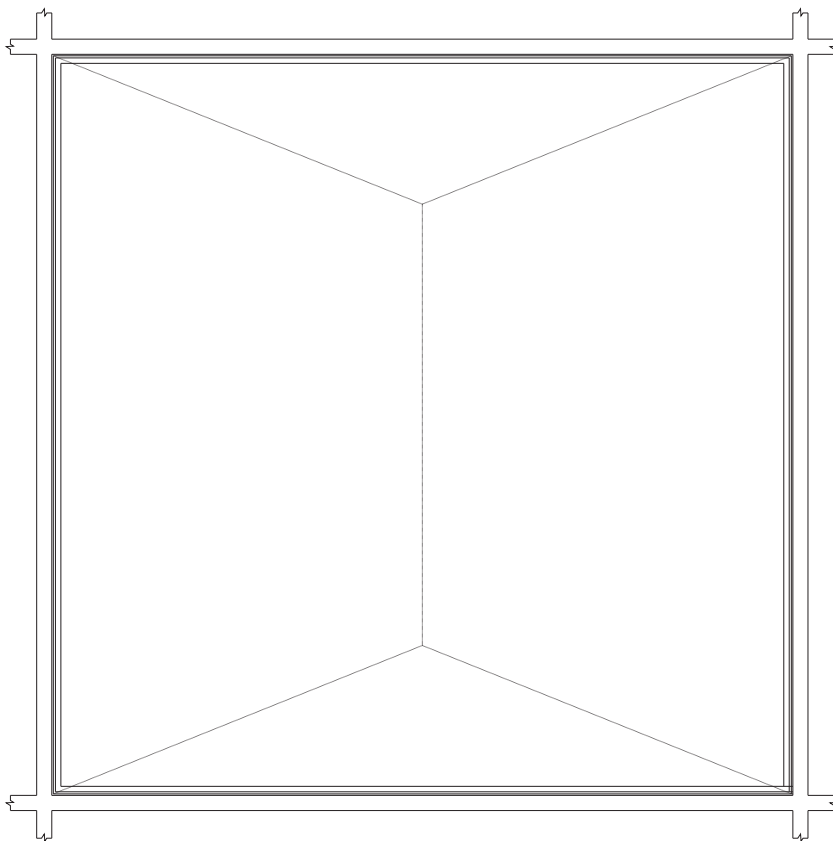
Πλάτος κέντρο κοιλότητας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος πλάκας πίεσης Pressure plate width	WPP=W-18,4mm
Ύψος πλάκας πίεσης Pressure plate height	HPP=H-18,4mm
Πλάτος Κάσας Frame width	WF=W-23,8mm
Ύψος Κάσας Frame height	HF=H-23,8mm
Πλάτος Φύλλου Sash width	WS=WF-43,0mm
Ύψος Φύλλου Sash height	HS=HF-43,0mm



Πλάτος κέντρο κοιλότητας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος Κάσας Frame width	WF=W-20,0mm
Ύψος Κάσας Frame height	HF=H-20,0mm
Πλάτος Φύλλου Sash width	WS=W-88,8mm
Ύψος Φύλλου Sash height	HS=H-88,8mm
Πλάτος Τζαμιού (έξω) Glazing width (out)	WG out = W-44,0mm
Ύψος Τζαμιού (έξω) Glazing height (out)	HG out=H-44,0mm
Πλάτος Τζαμιού (μέσα) Glazing width (in)	WG in = W-150,8mm
Ύψος Τζαμιού (μέσα) Glazing height (in)	HG in=H-150,8mm

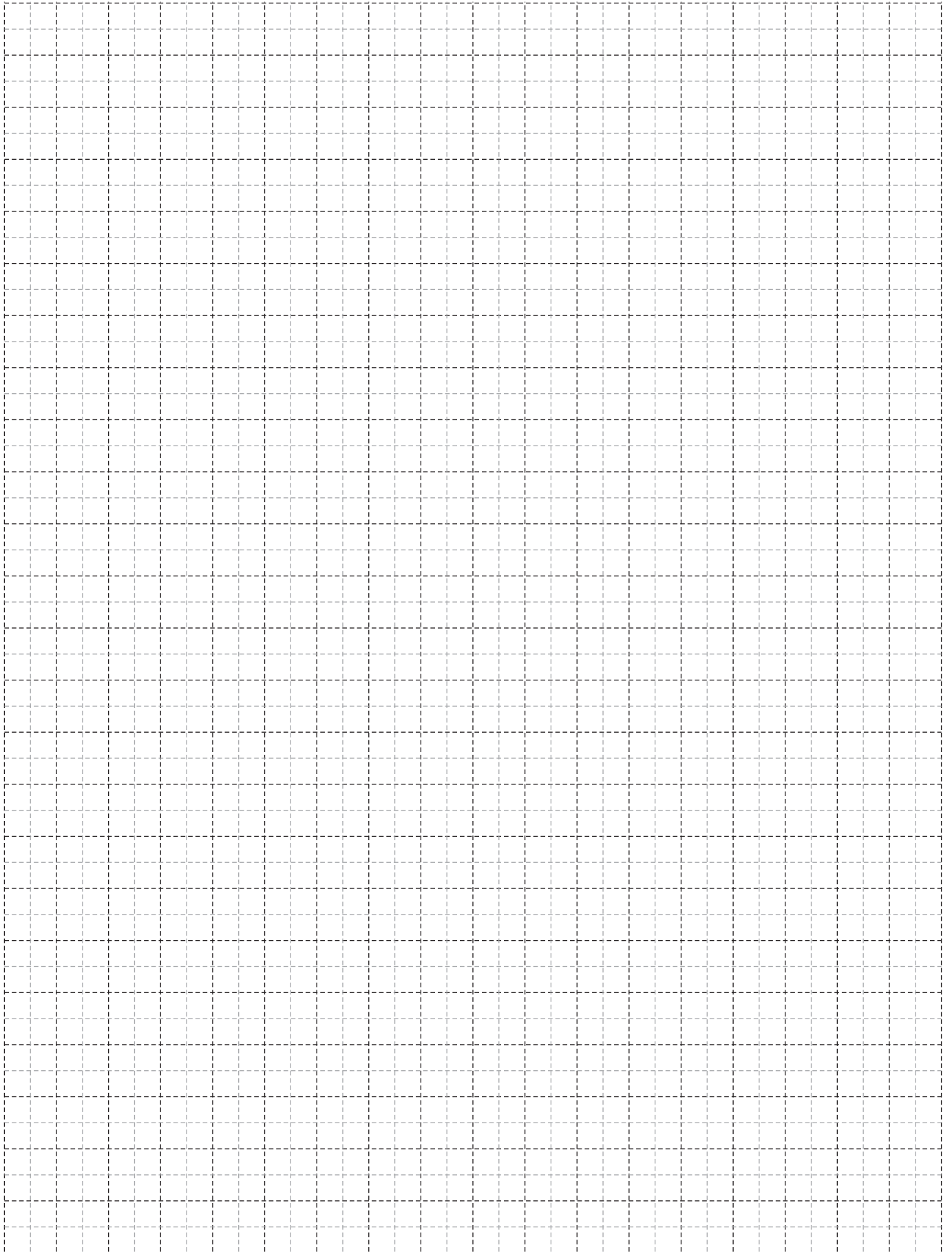


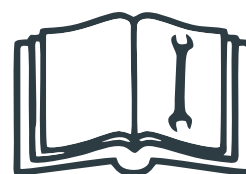
Πλάτος κέντρο κοιλότητας Mullion center width	W
Ύψος κέντρο τραβερσας Transom center height	H
Πλάτος Κάσας Frame width	WF=W-20,0mm
Ύψος Κάσας Frame height	HF=H-20,0mm
Πλάτος Φύλλου Sash width	WS=W-87,6mm
Ύψος Φύλλου Sash height	HS=H-87,6mm
Πλάτος Τζαμιού (έξω) Glazing width (out)	WG out = W-44,0mm
Ύψος Τζαμιού (έξω) Glazing height (out)	HG out=H-44,0mm
Πλάτος Τζαμιού (μέσα) Glazing width (in)	WG in = W-151,2mm
Ύψος Τζαμιού (μέσα) Glazing height (in)	HG in=H-151,2mm



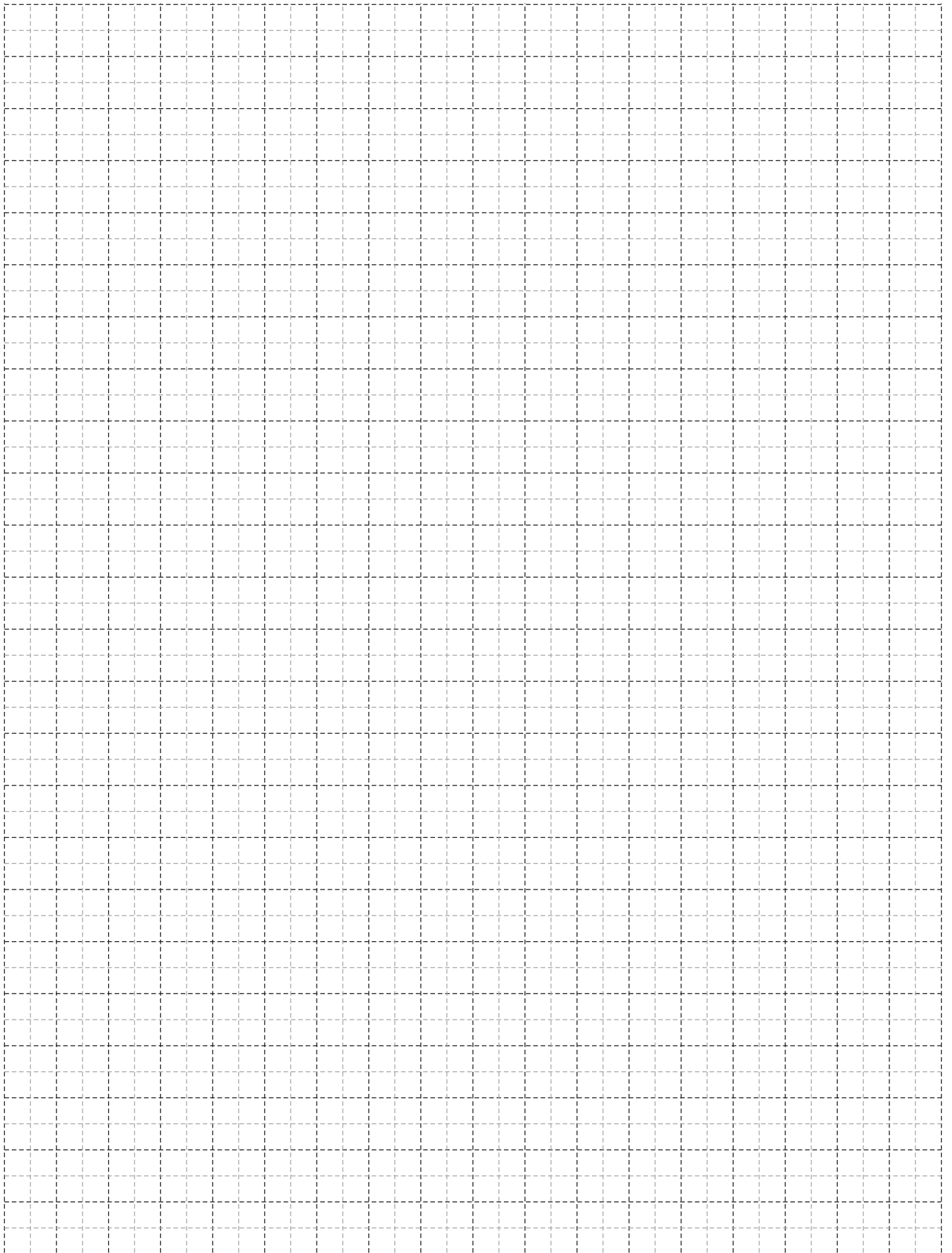
A large, abstract graphic on the left side of the page, consisting of several overlapping diagonal bands in shades of yellow and orange, creating a dynamic, geometric pattern.

ΚΑΤΕΡΓΑΣΙΕΣ MILLING-TOOLING OPERATIONS



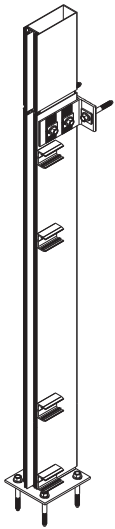


Οδηγίες εγκατάστασης
Installation instructions

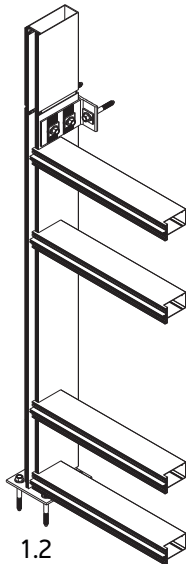


1. ASSEMBLY MULLION-TRANSOMS

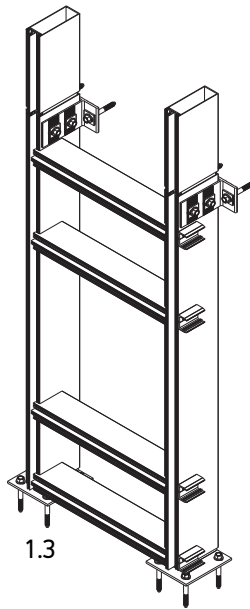
Align and anchor support brackets to building structure.



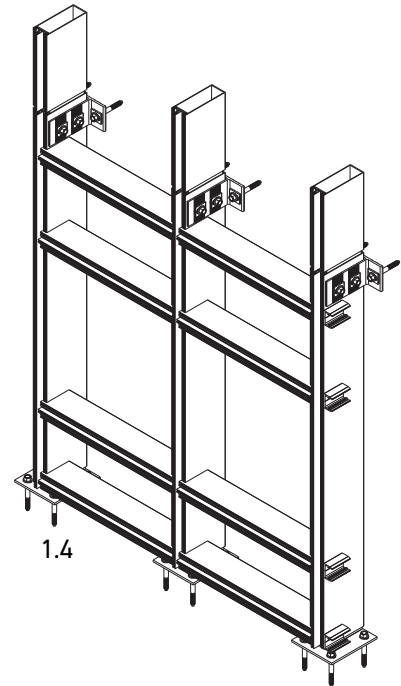
1.1



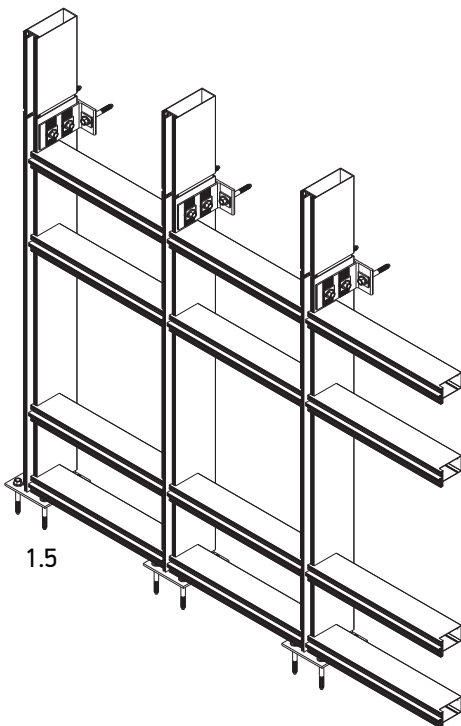
1.2



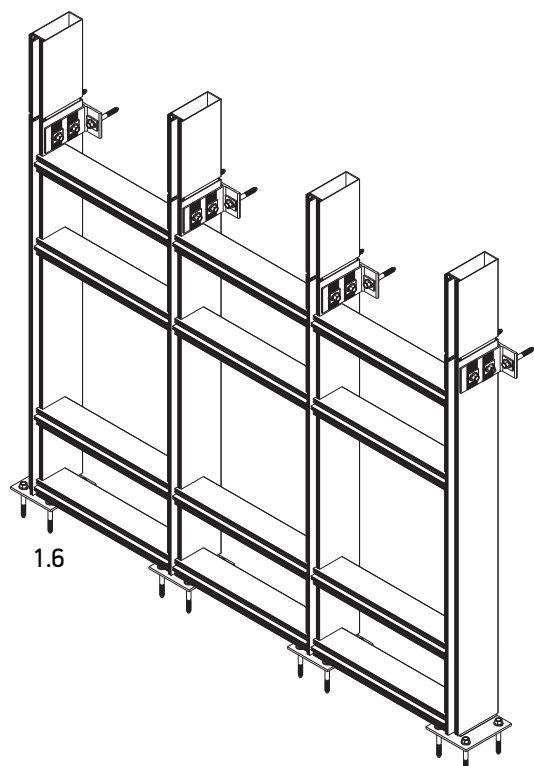
1.3



1.4

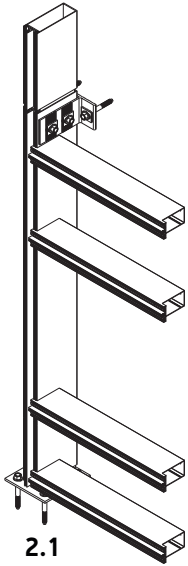


1.5

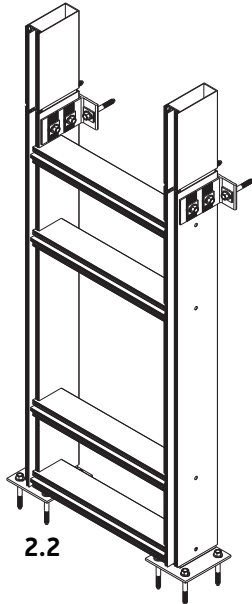


1.6

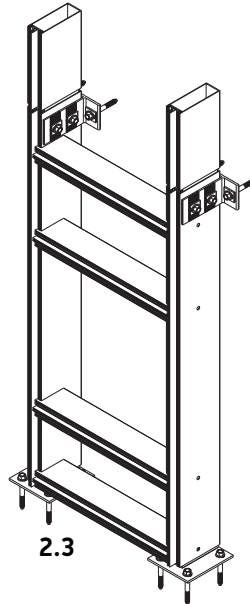
2. ASSEMBLY LADDER ELEMENTS



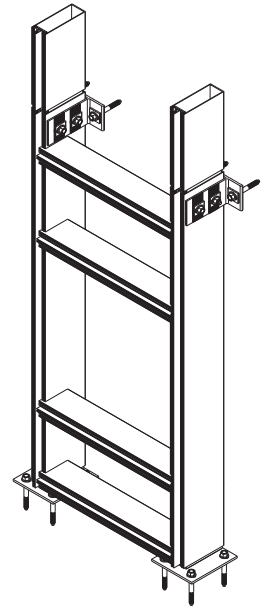
2.1



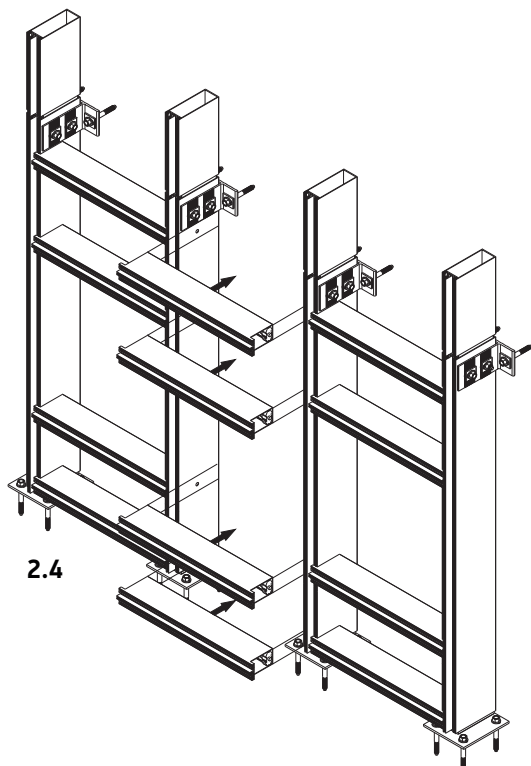
2.2



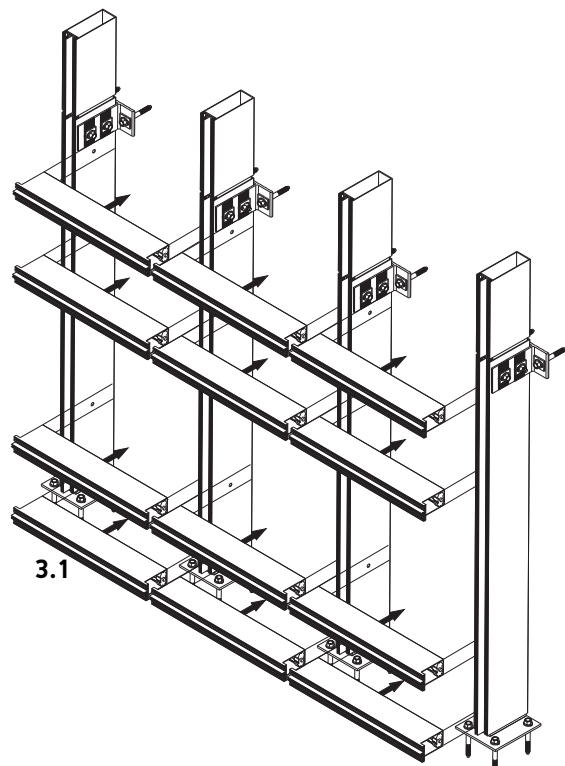
2.3



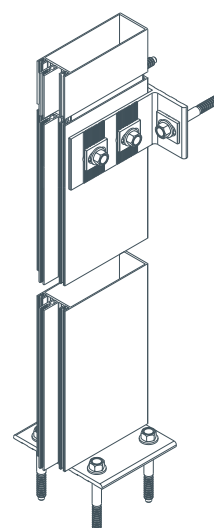
3. ASSEMBLY MULLIONS-TRANSOMS



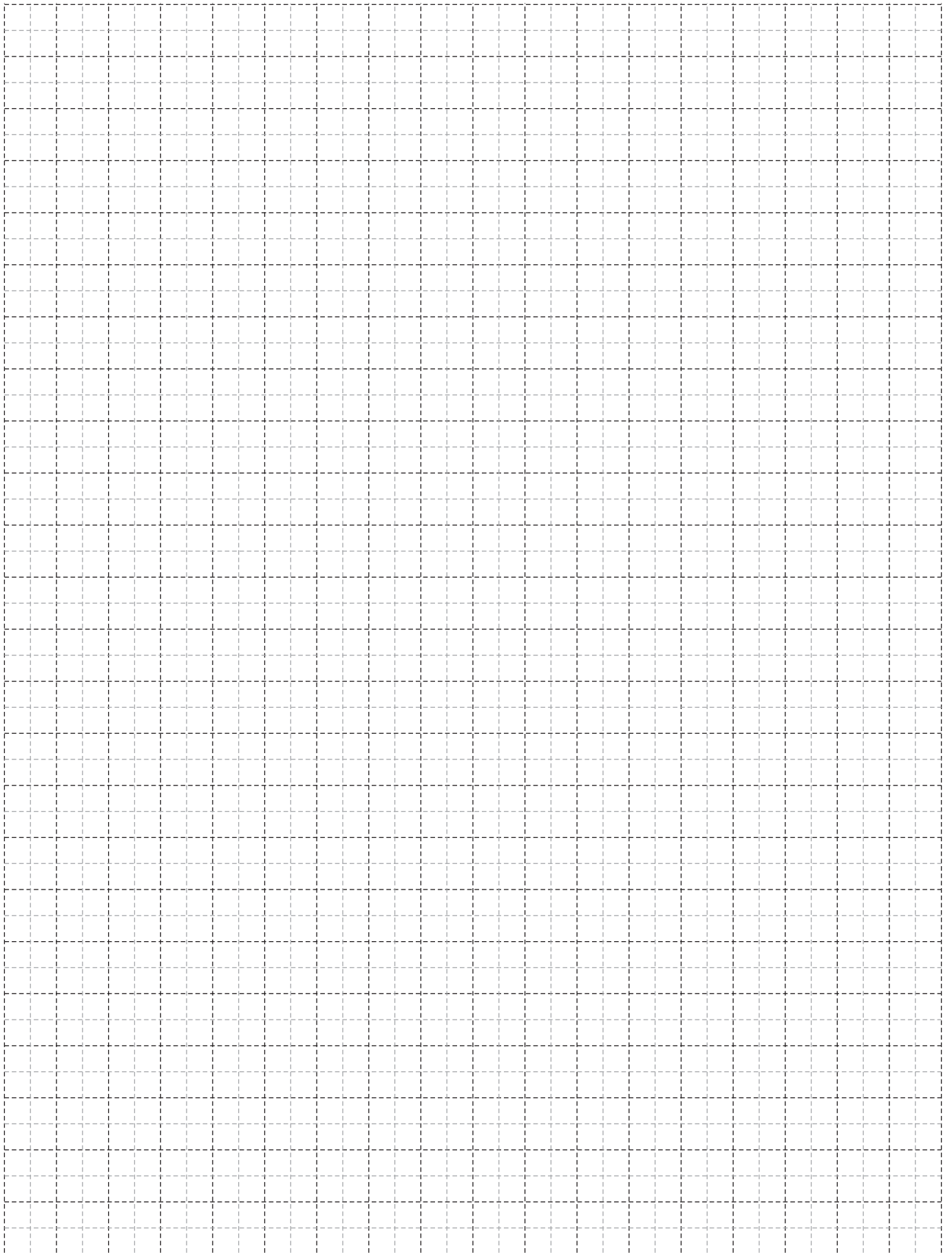
2.4

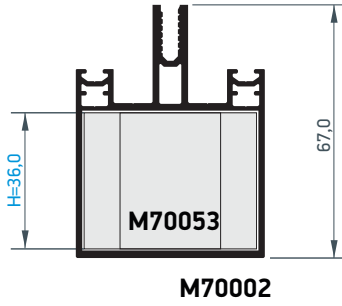


3.1

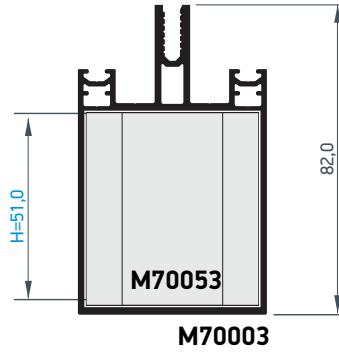


Αγκύρωση κοιλόνας
Mullion Anchoing

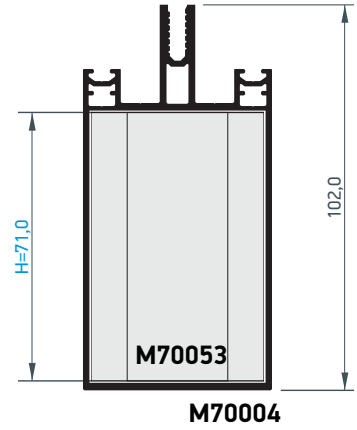




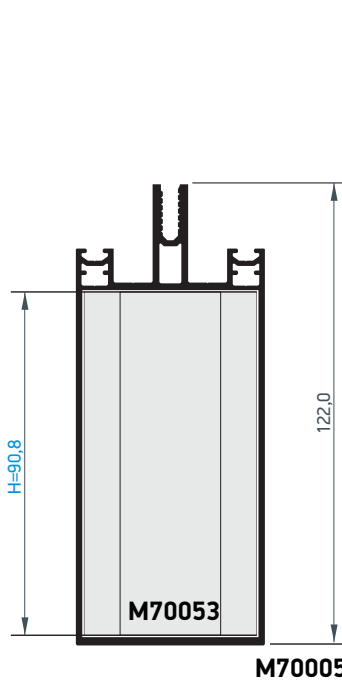
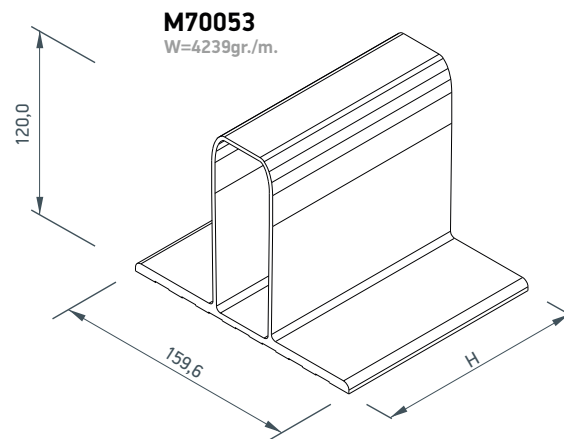
M70002



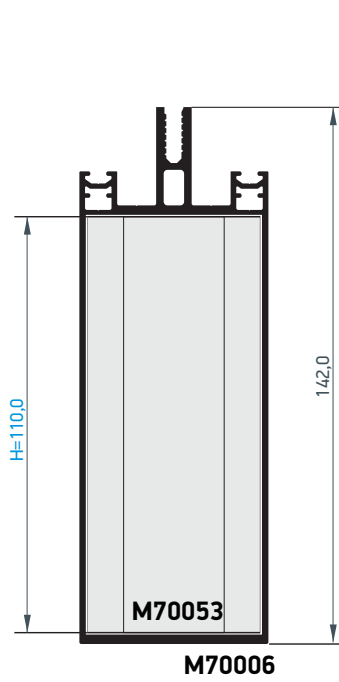
M70003



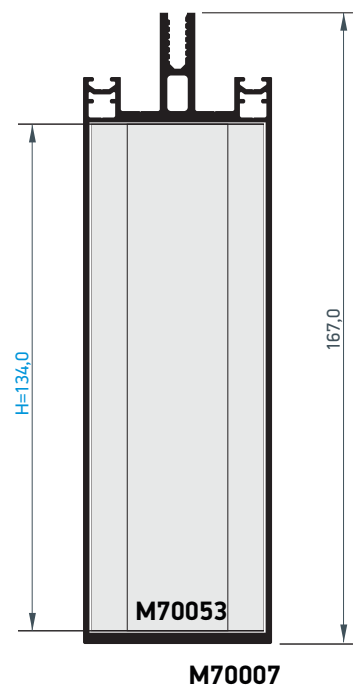
M70004



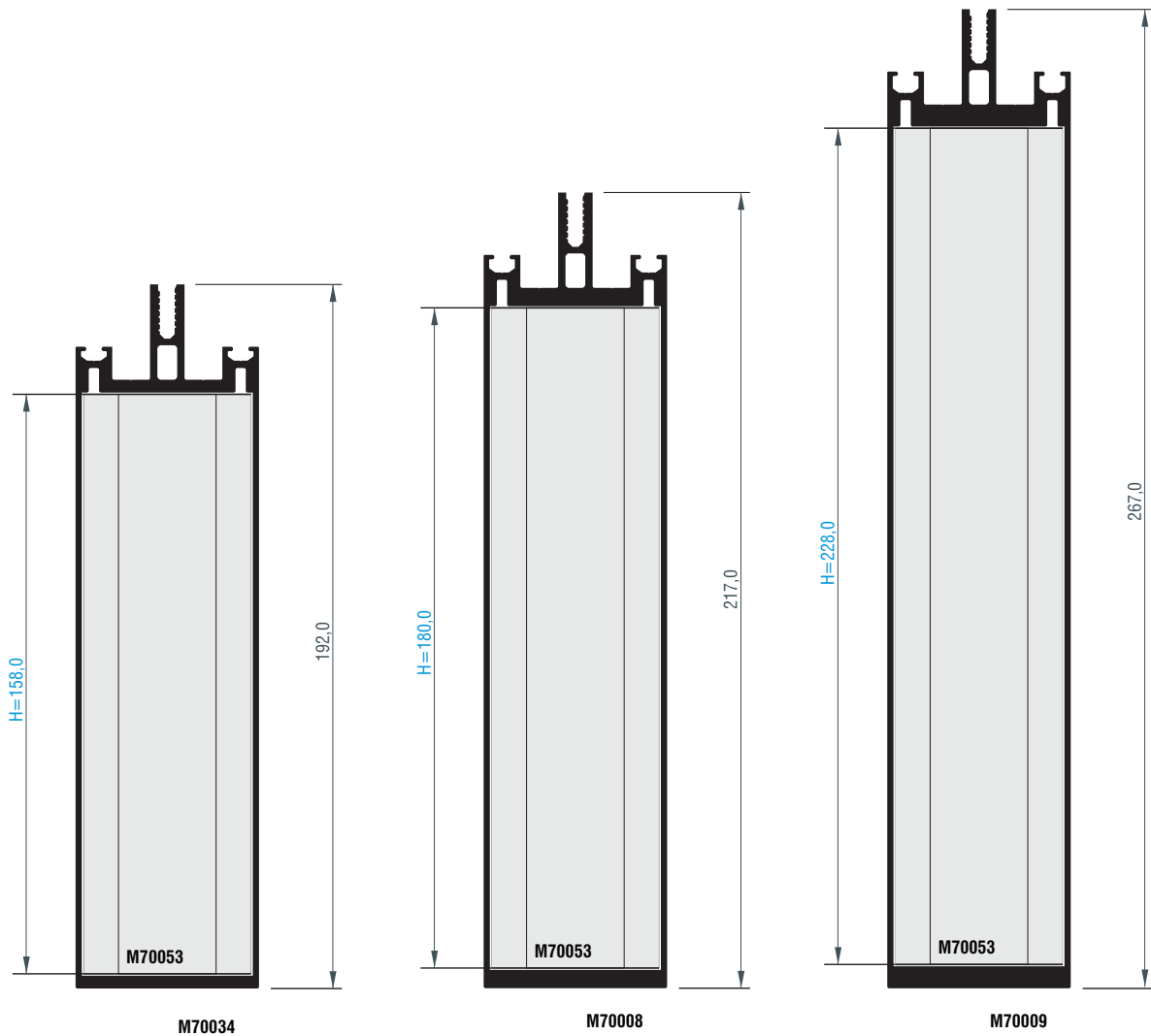
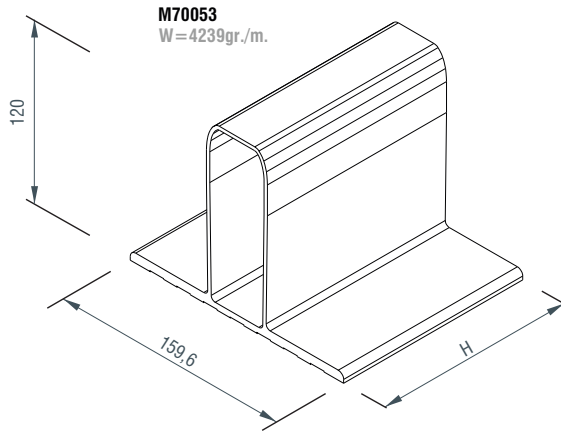
M70005

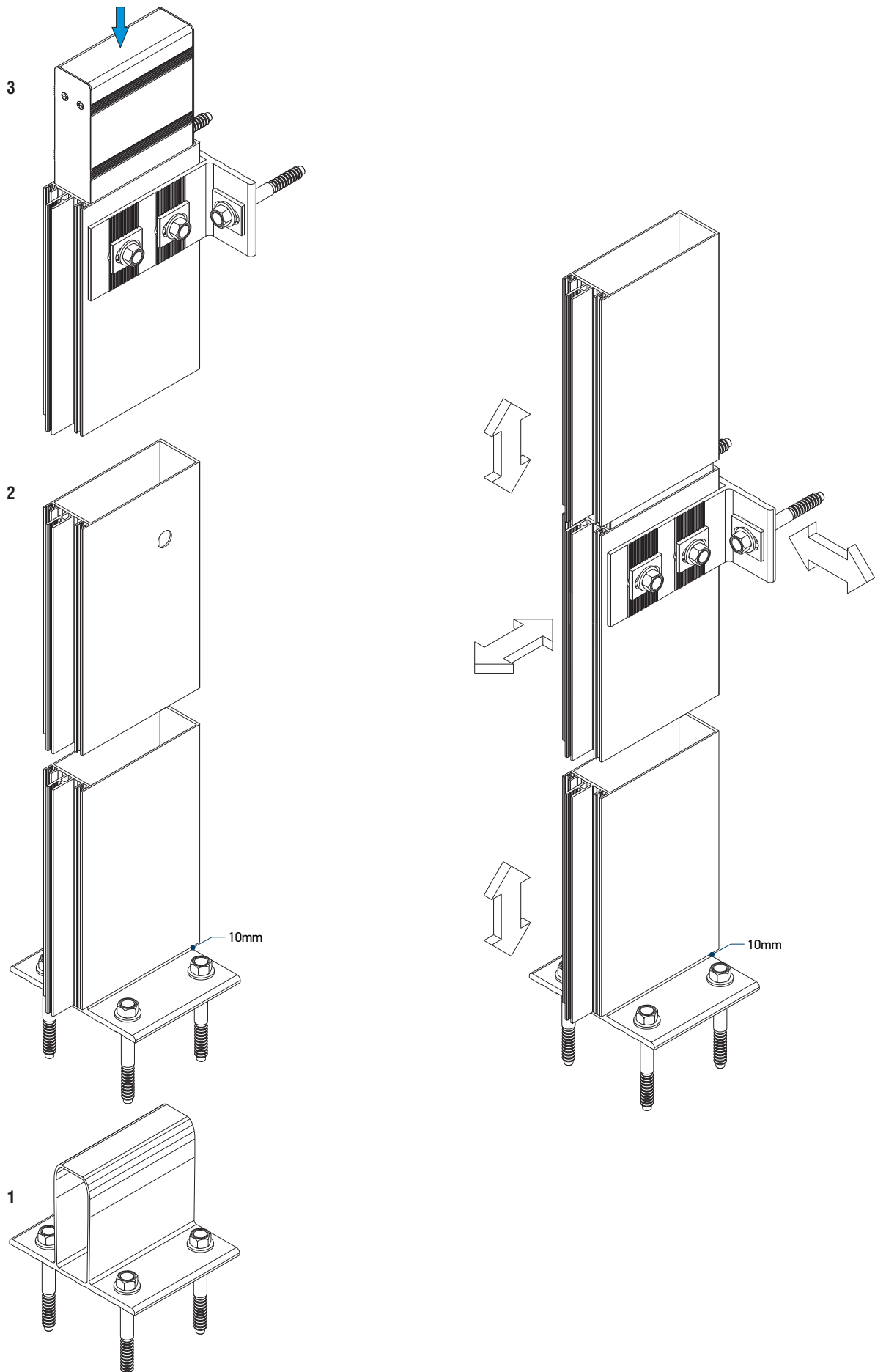


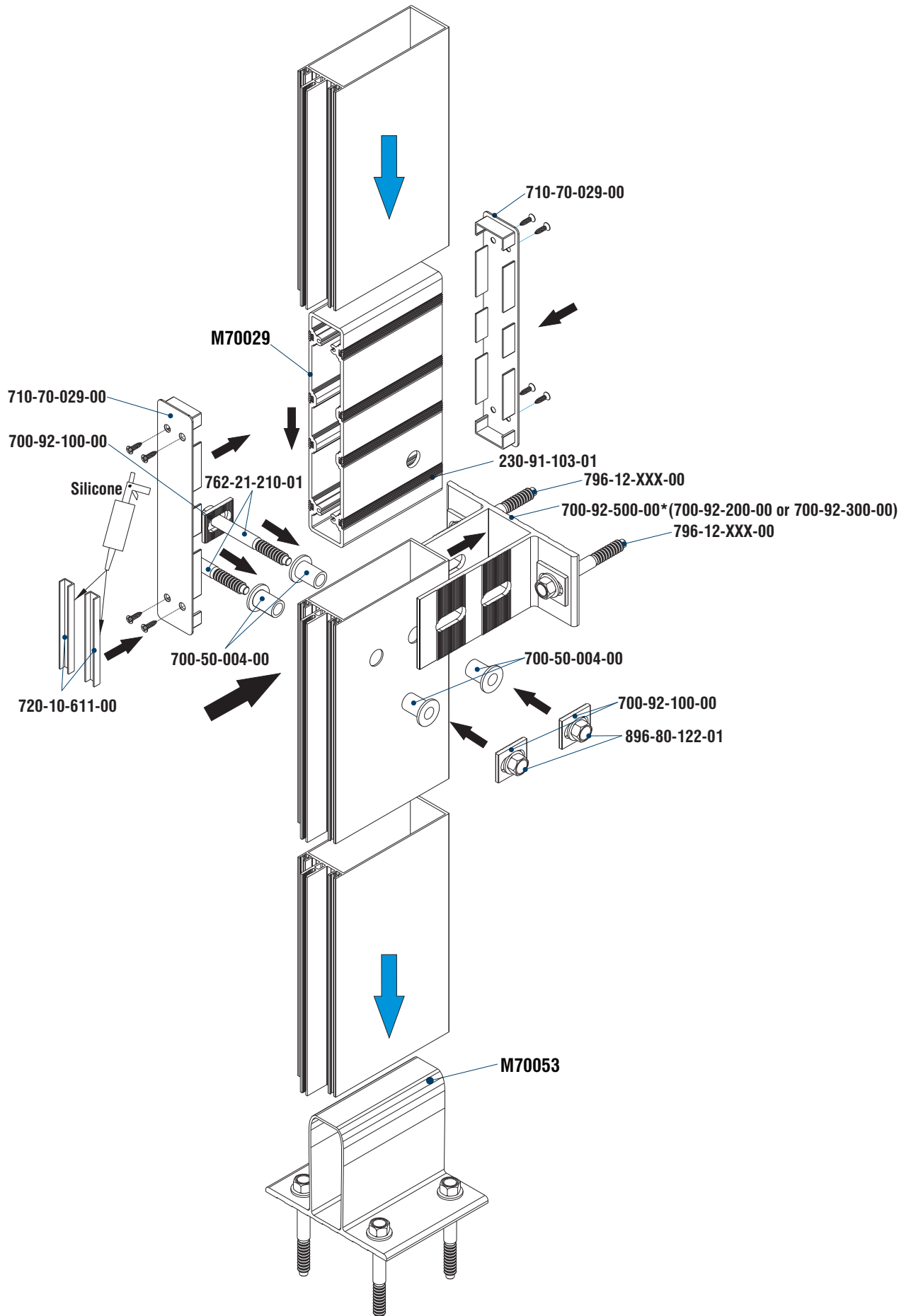
M70006



M70007

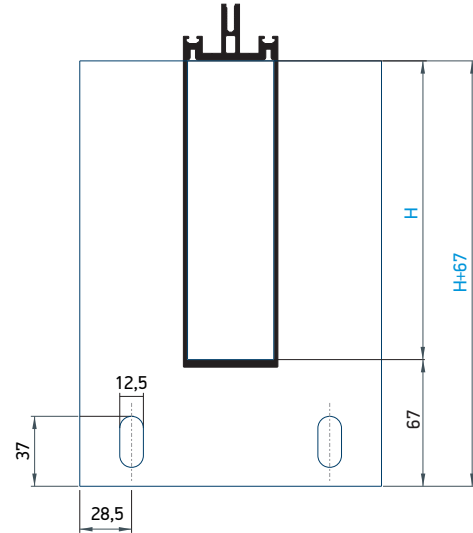
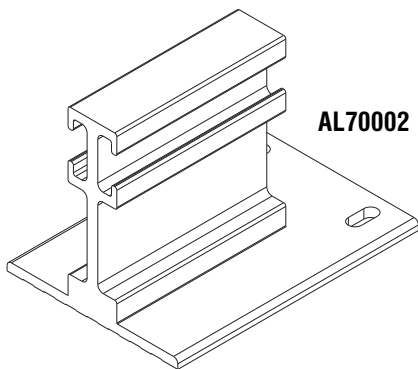




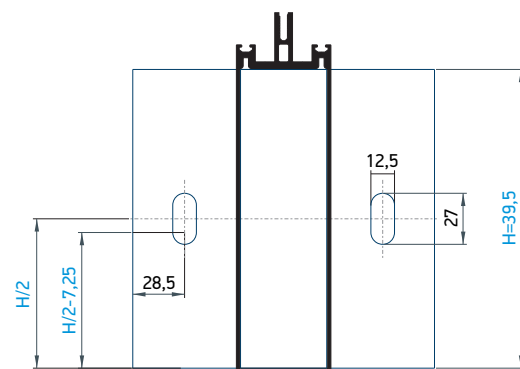
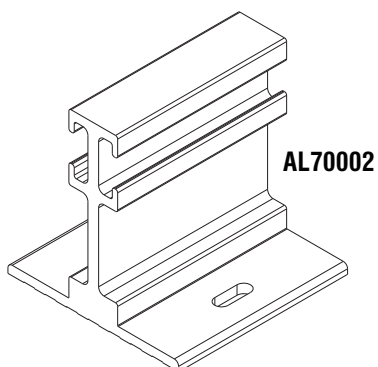


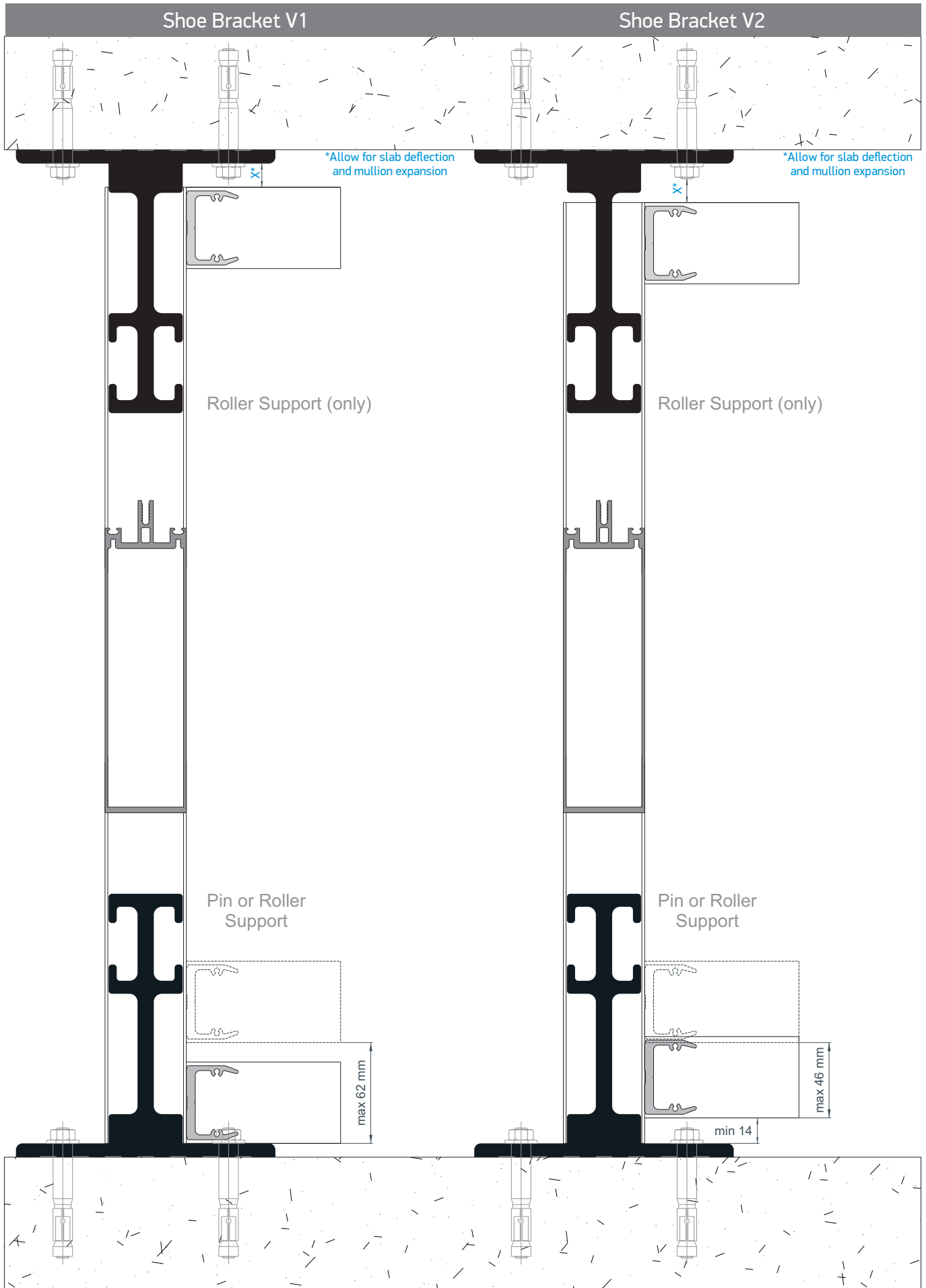
Shoe Bracket V1

Mullion Κοθόνα	H
M70002	36 mm
M70003	51 mm
M70004	71 mm
M70005	90,8 mm
M70006	110 mm
M70007	134 mm
M70034	158 mm
M70008	180 mm
M70009	228 mm

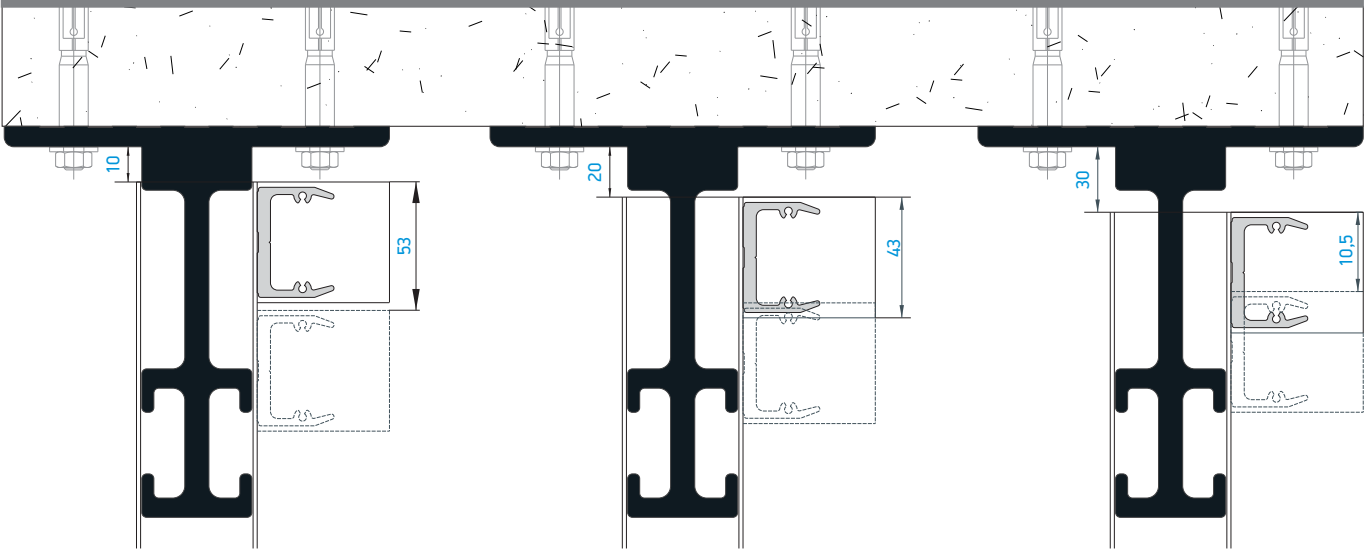

Shoe Bracket V2

Mullion Κοθόνα	H
M70004	71 mm
M70005	90,8 mm
M70006	110 mm
M70007	134 mm
M70034	158 mm
M70008	180 mm
M70009	228 mm

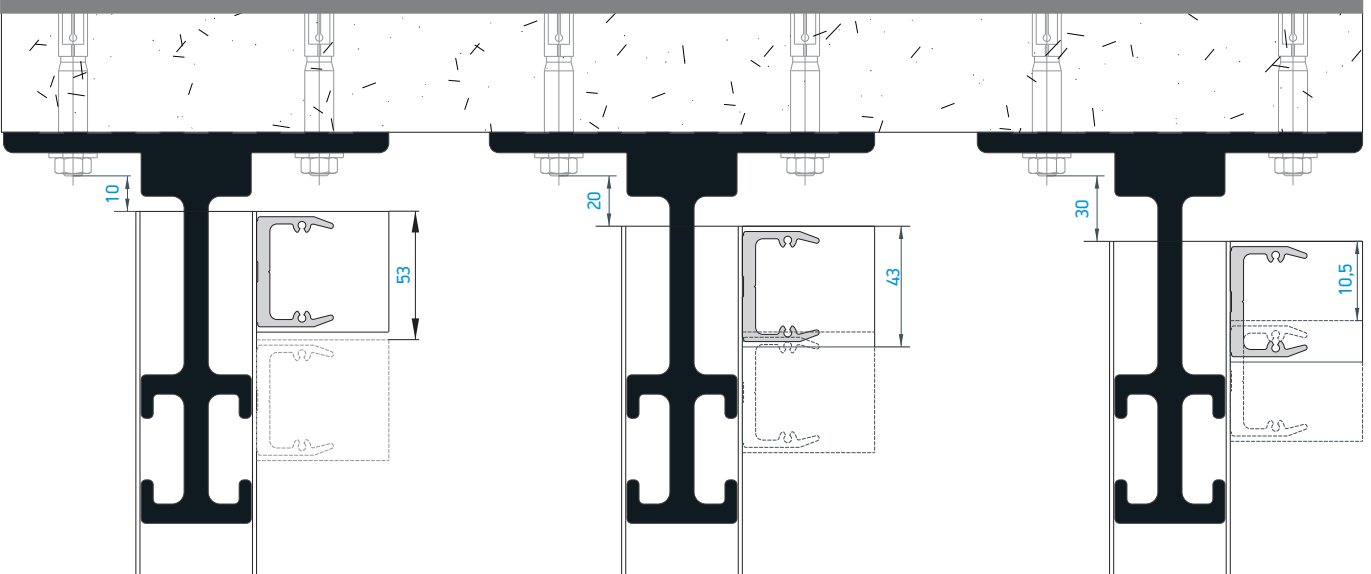




Slab deflection and mullion expansion -Top detail (Roller Support) for shoe brucket V1
 Παραμόρφωση πλάκας και διαστολή κοιλόντας- Επάνω λεπτομέρεια (Roller Support) for shoe brucket V1



Slab deflection and mullion expansion -Top detail (Roller Support) for shoe brucket V2
 Παραμόρφωση πλάκας και διαστολή κοιλόντας- Επάνω λεπτομέρεια (Roller Support) for shoe brucket V2

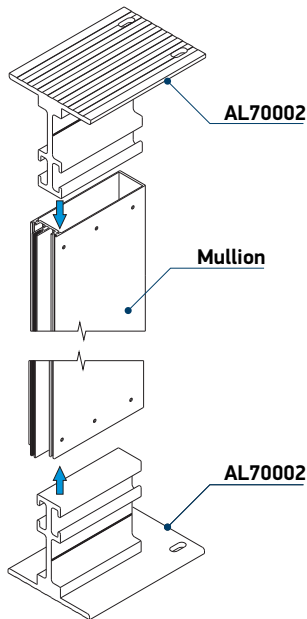


Installation instructions Οδηγίες Εγκατάστασης

1

Τοποθετούμε την επάνω και κάτω βάση (AL70002) της κοιλότητας

Place the shoe bracket profile (AL70002) in the top and bottom side of the mullion



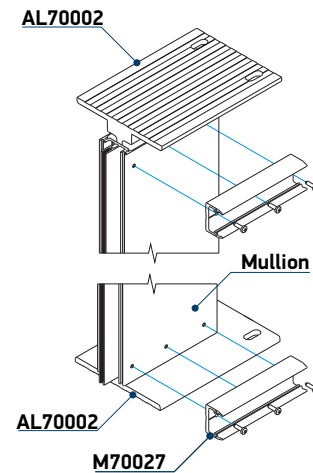
2

Βιδώνουμε τον σύνδεσμο της τραβέρσας-κοιλότητας M70027, με αποτέλεσμα να ασφαλίσει η βάση (AL70002) στη κοιλότητα.

(Ακολουθείστε τις οδηγίες τοποθέτησης του συνδέσμου)

We fix the transom-mullion connector M70027, securing the shoe bracket profile (AL70002) into the mullion.

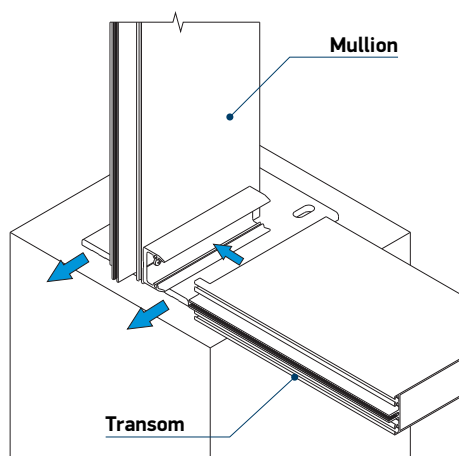
(Follow the installation instructions for the connector)



3

Τοποθετούμε τη κοιλότητα στο άνοιγμα της κατασκευής και εγκαθιστούμε τις τραβέρσες. (Ακολουθείστε τις οδηγίες τοποθέτησης του συνδέσμου)

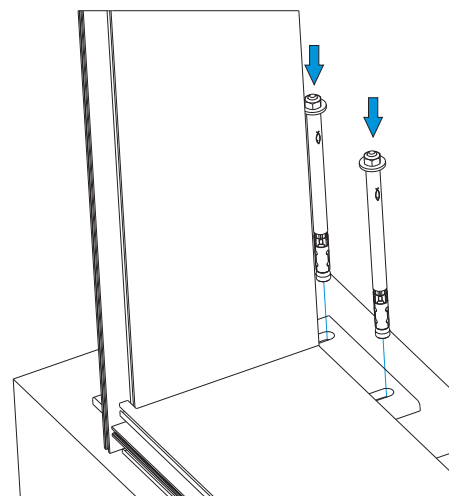
We place the mullion into the construction opening and install the transom. (Follow the installation instructions for the transom)

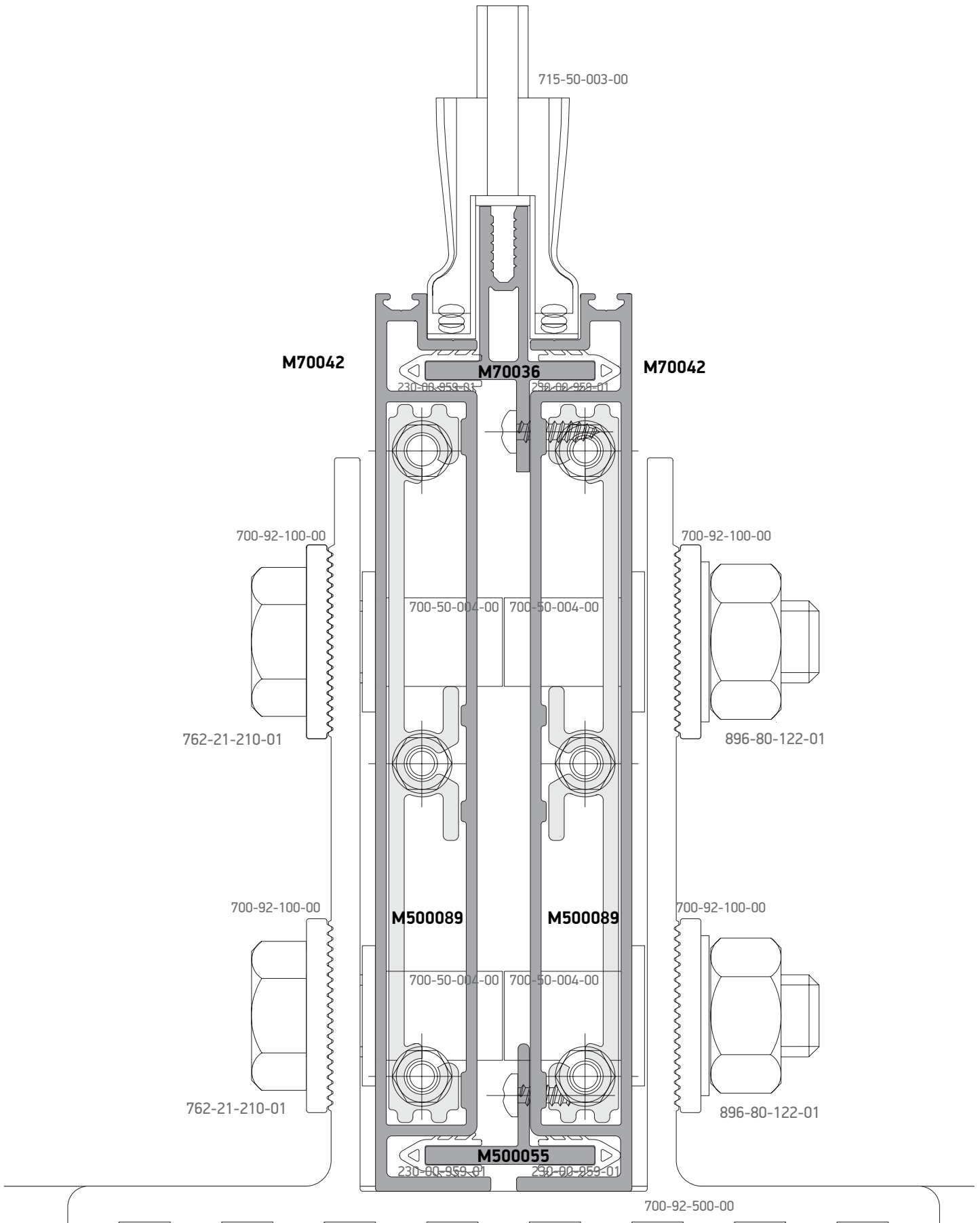


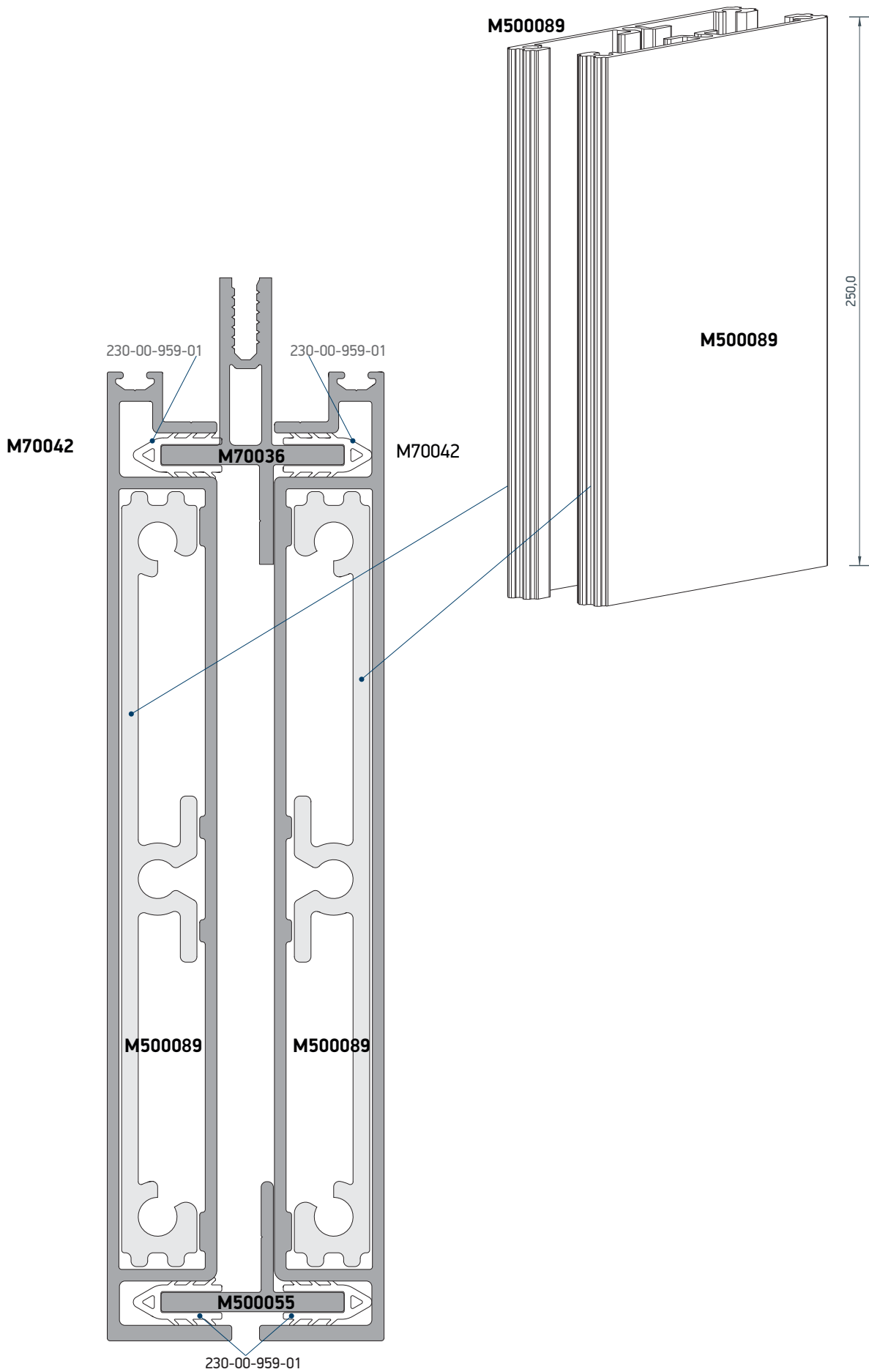
4

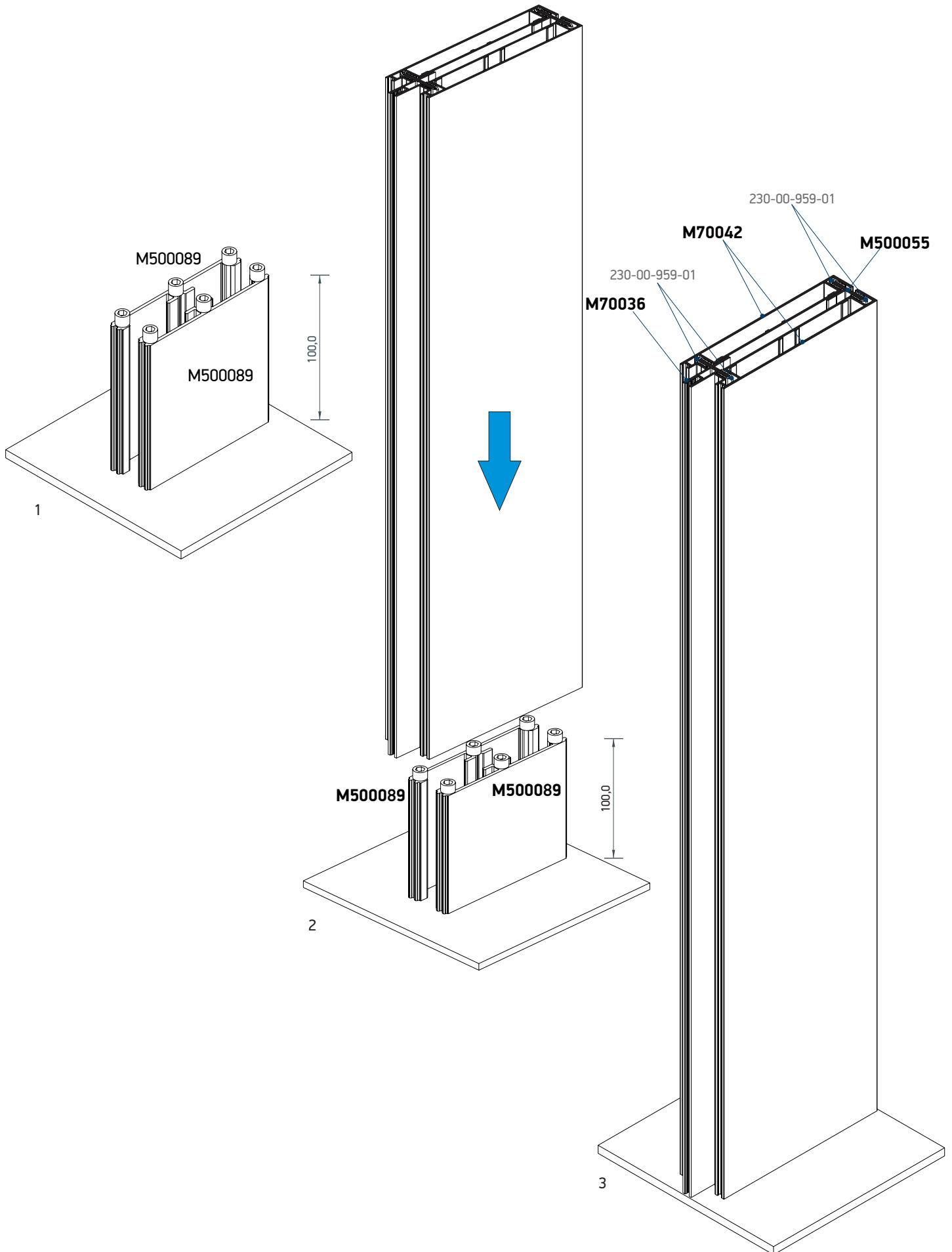
Ασφαλίζουμε τη βάση της κοιλότητας στη τελική της θέση με αγκύρια.

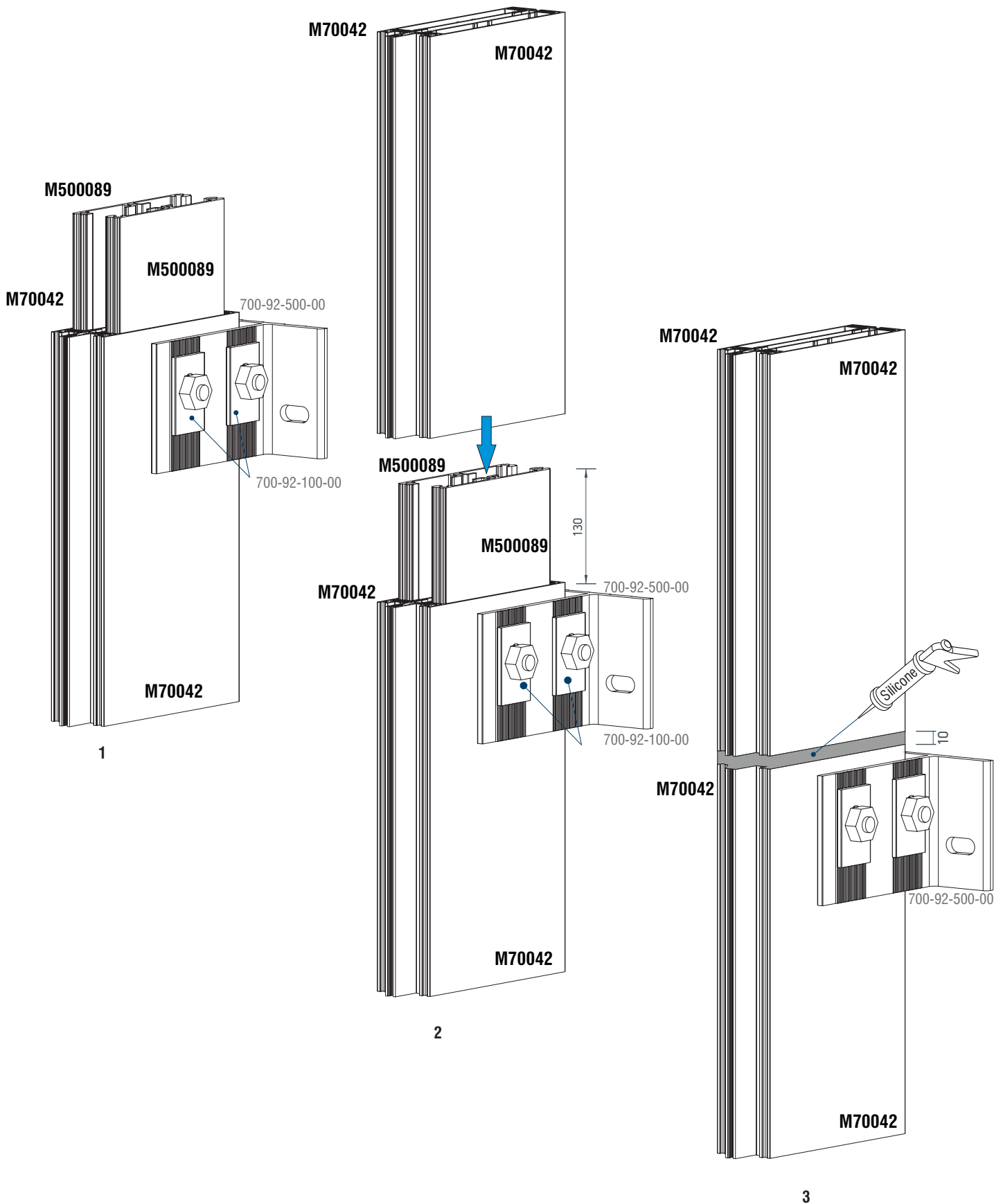
We secure the shoe bracket profile with anchors at its final position.

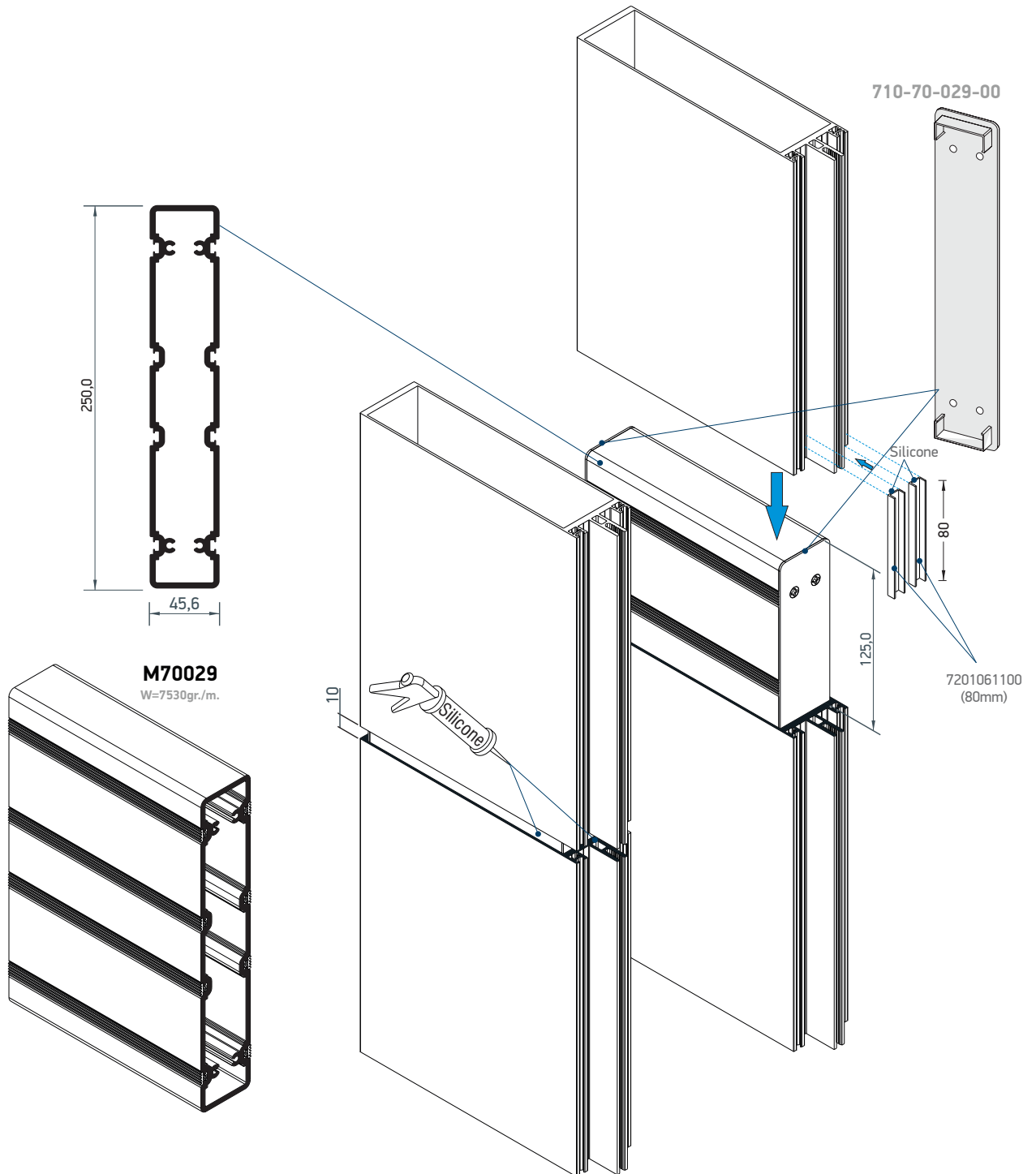


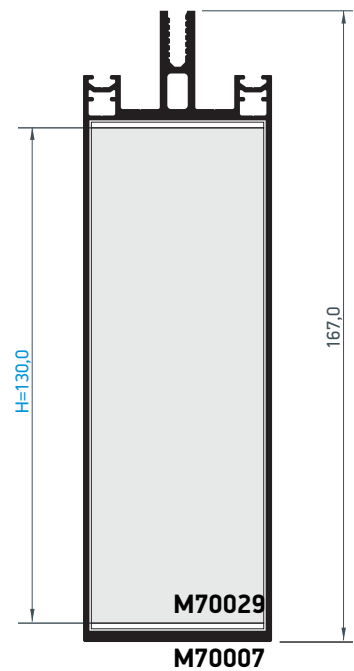
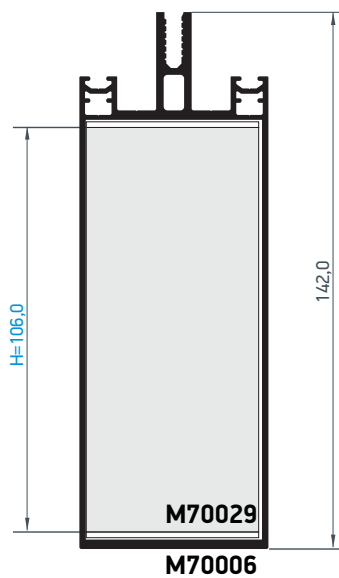
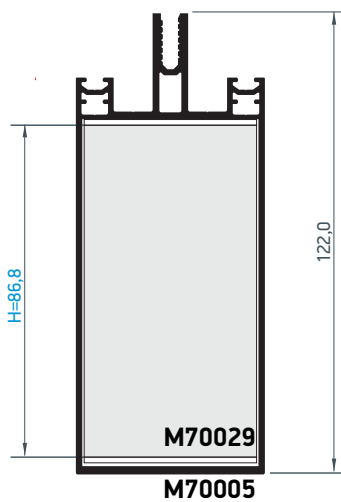
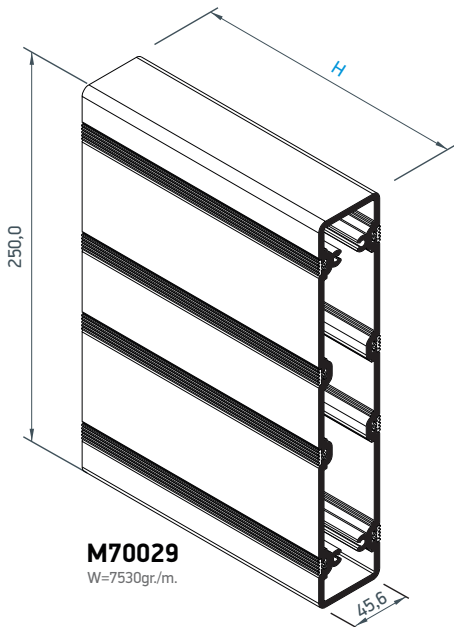
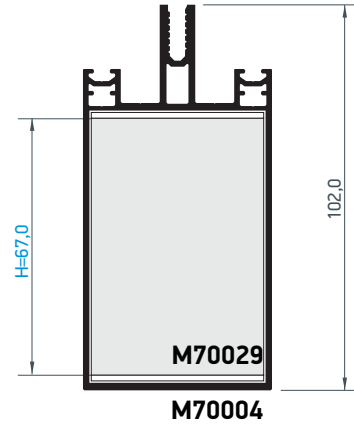
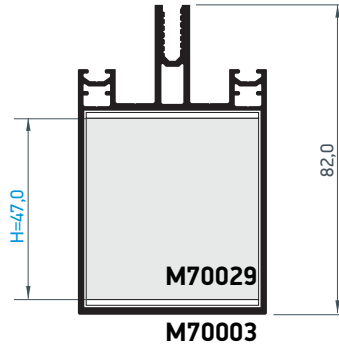
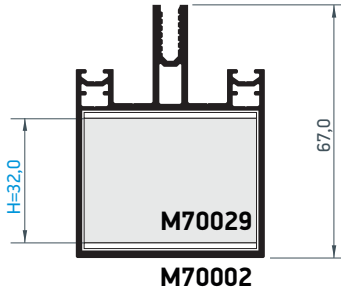


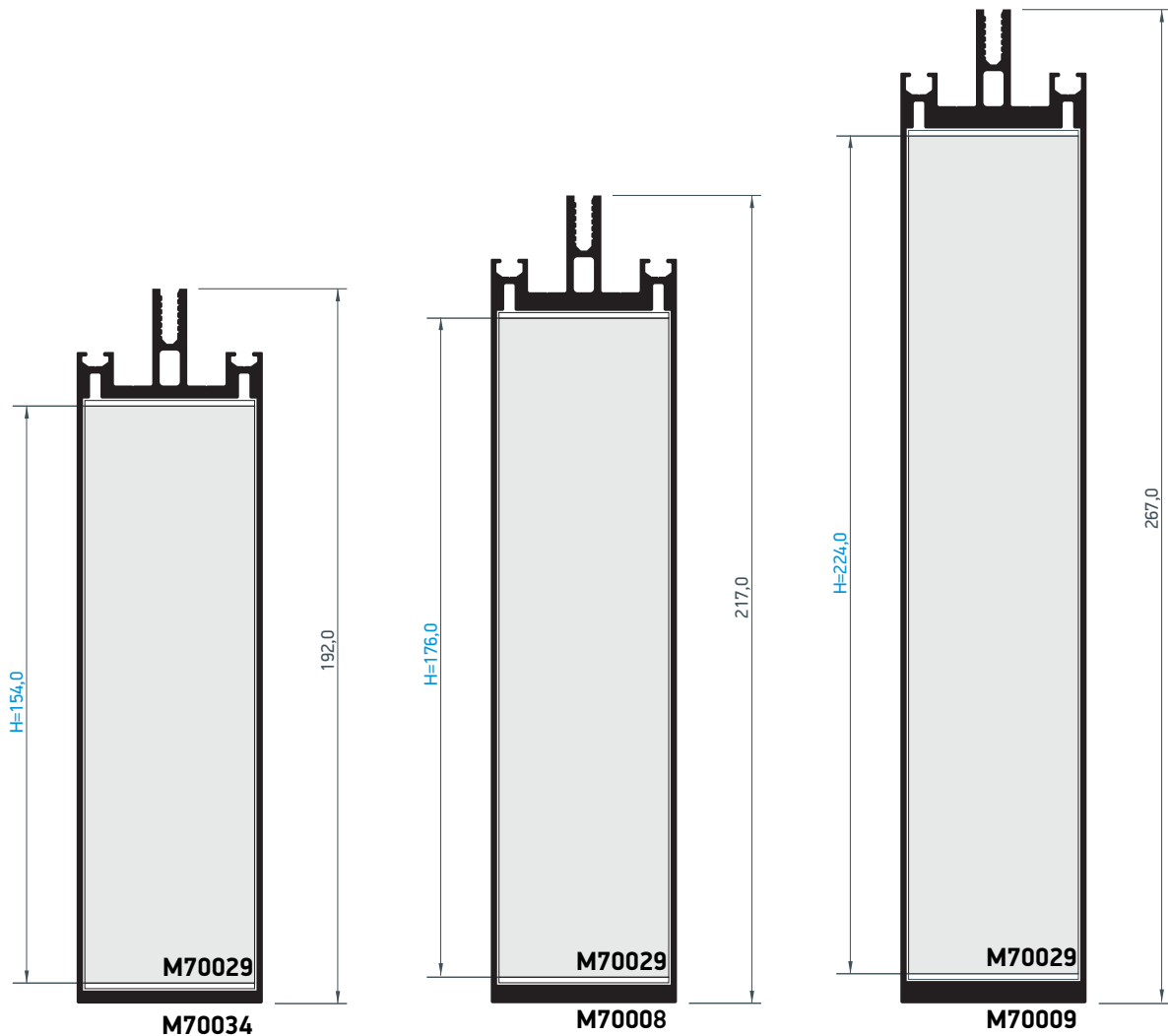
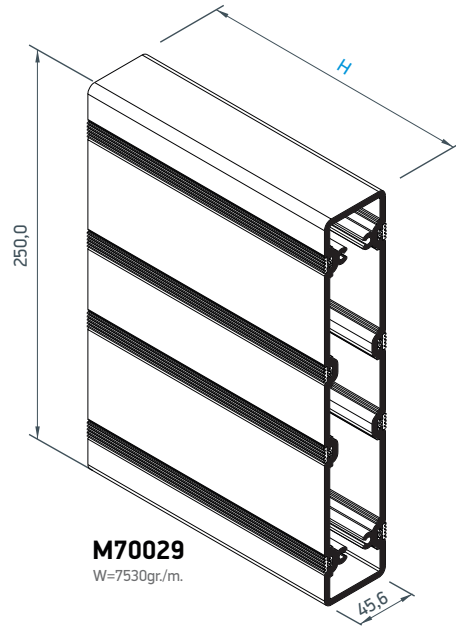


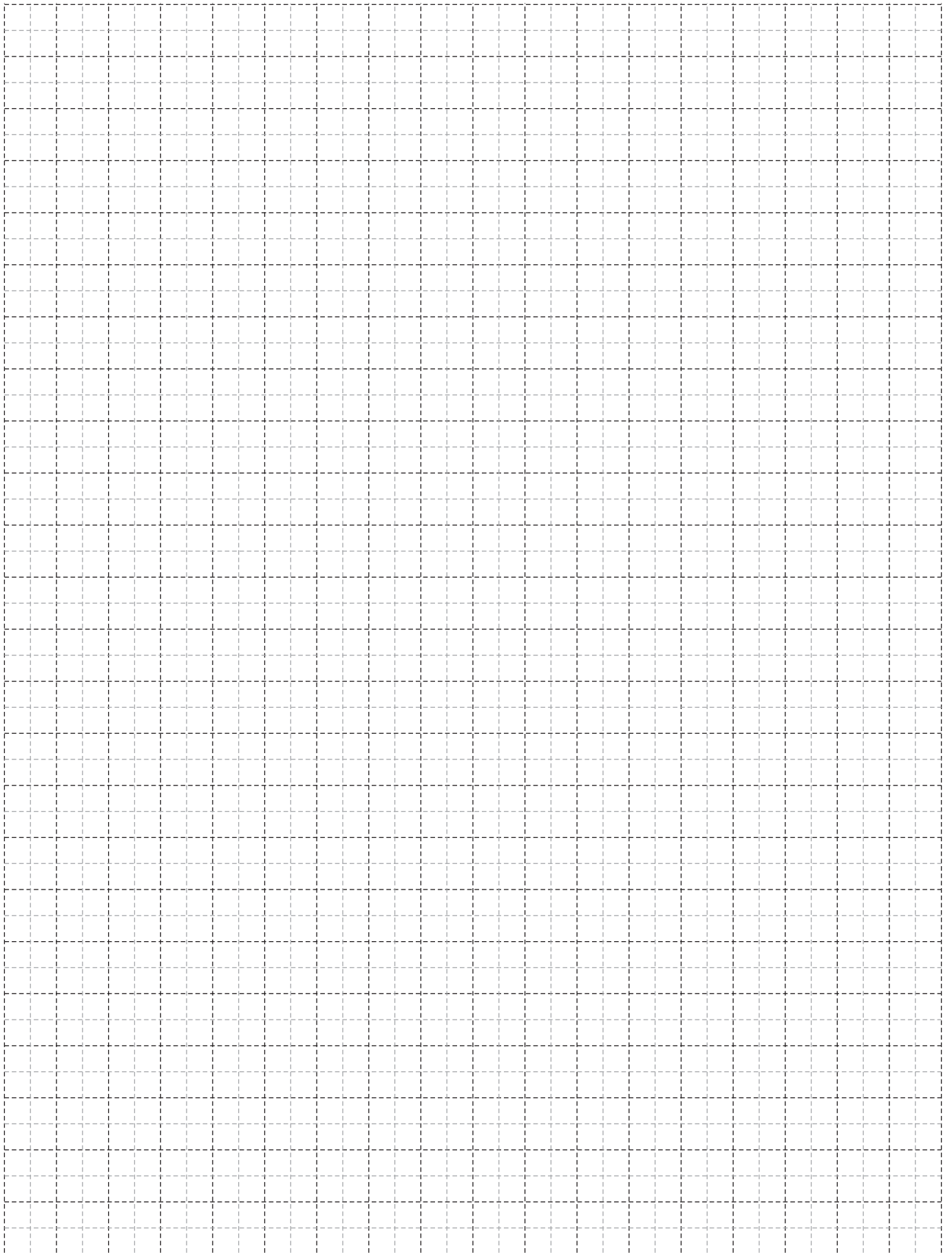


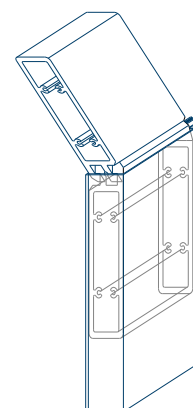




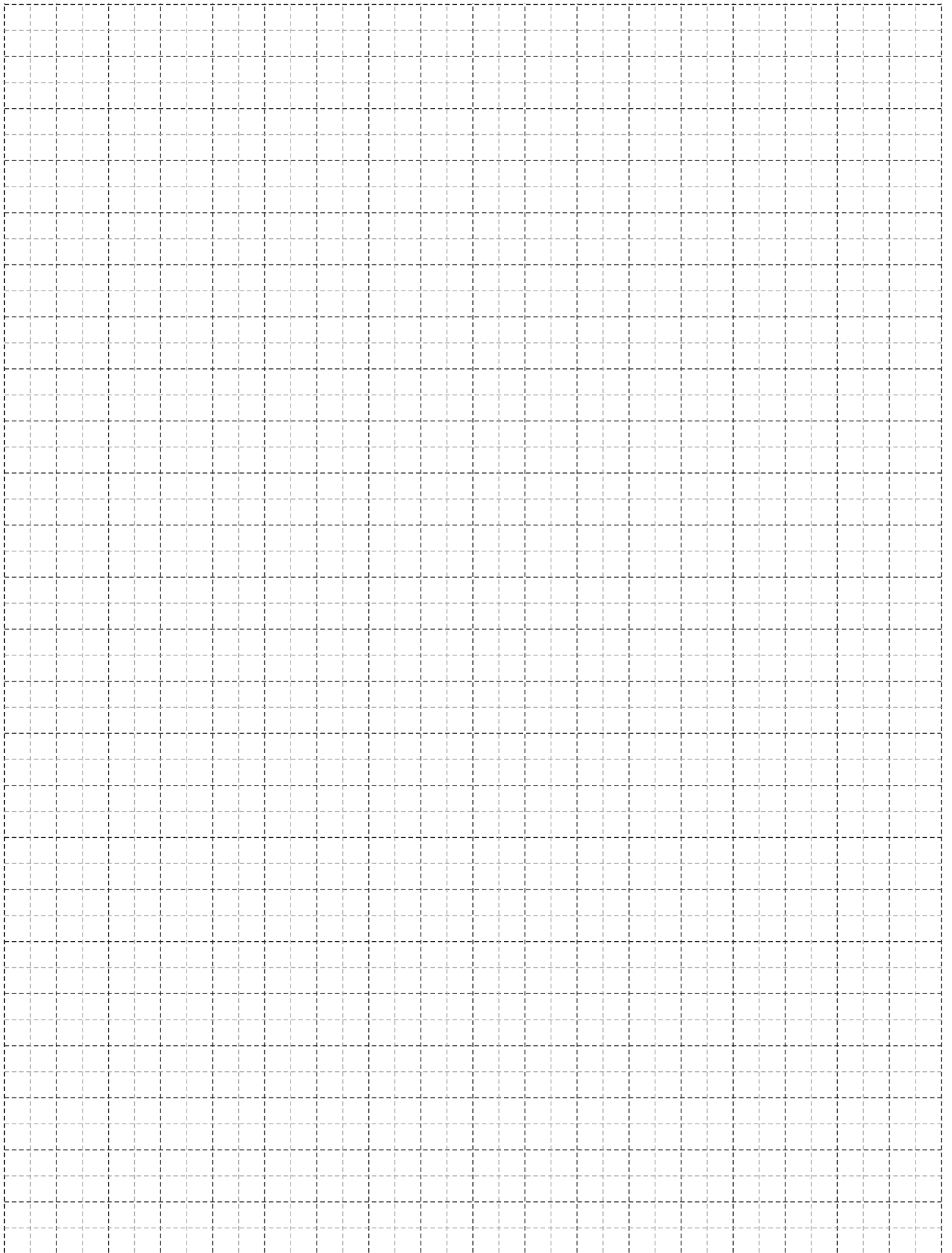




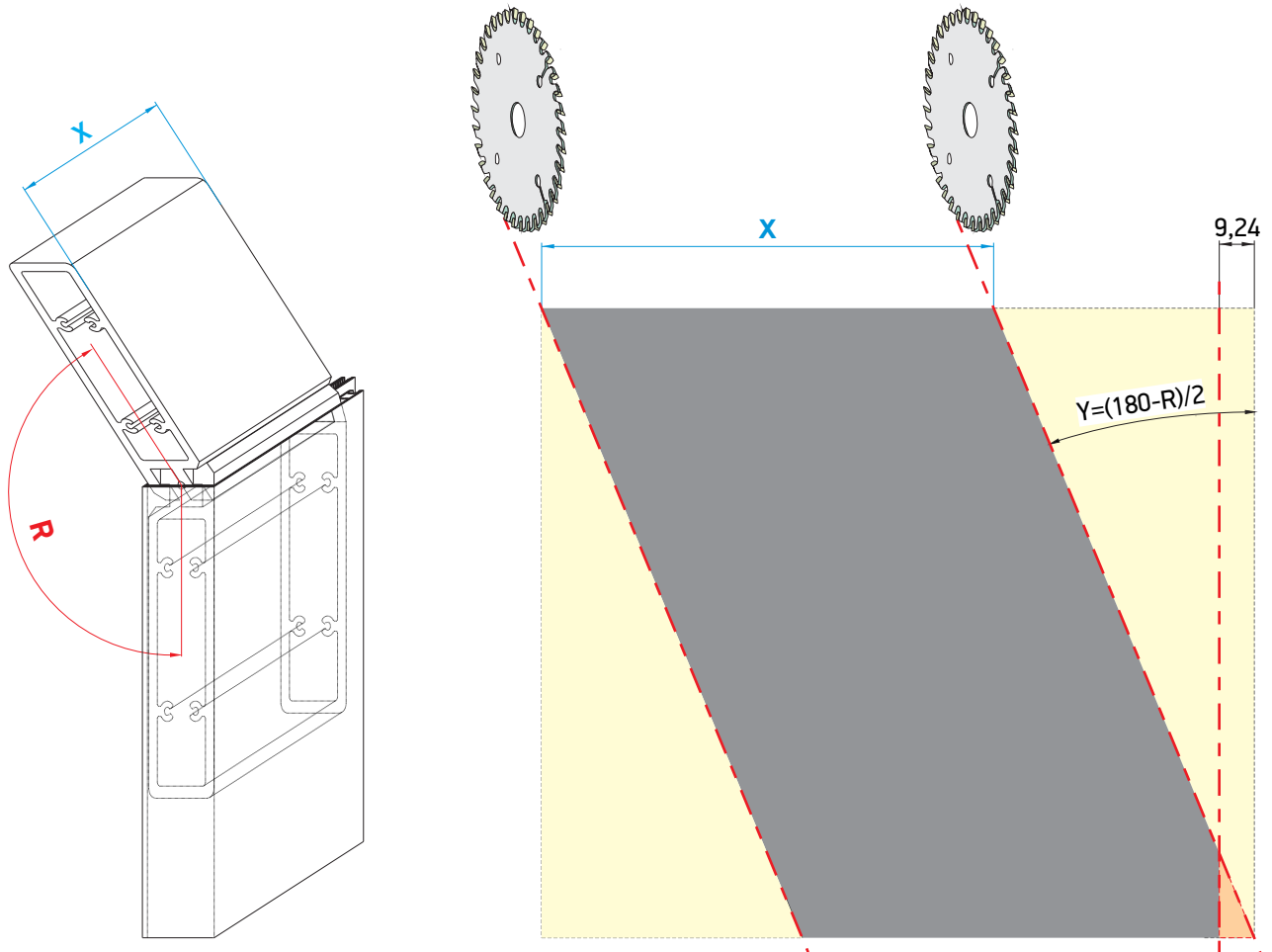




Σύνδεσμος κοιλόννας υπό κλίση
Mullion connection at an angle



M70030 Cuttings



M70002	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	36,6
155	36,9
150	37,3
145	37,7
140	38,3
135	39,0
130	39,7
125	40,6
120	41,6
115	42,7
110	43,9
105	45,4
100	47,0

M70003	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	51,8
155	52,2
150	52,8
145	53,5
140	54,3
135	55,2
130	56,3
125	57,5
120	58,9
115	60,5
110	62,3
105	64,3
100	66,6

M70004	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	72,1
155	72,7
150	73,5
145	74,4
140	75,6
135	76,8
130	78,3
125	80,0
120	82,0
115	84,2
110	86,7
105	89,5
100	92,7

M70005	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	92,2
155	93,0
150	94,0
145	95,2
140	96,6
135	98,3
130	100,2
125	102,4
120	104,8
115	107,7
110	110,8
105	114,5
100	118,5

M70006	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	111,7
155	112,7
150	113,9
145	115,3
140	117,1
135	119,1
130	121,4
125	124,0
120	127,0
115	130,4
110	134,3
105	138,7
100	143,6

M70007	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	136,1
155	137,3
150	138,7
145	140,5
140	142,6
135	145,0
130	147,9
125	151,1
120	154,7
115	158,9
110	163,6
105	168,9
100	174,9

M71208	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	141,9
155	143,1
150	144,7
145	146,5
140	148,7
135	151,3
130	154,2
125	157,6
120	161,4
115	165,7
110	170,6
105	176,2
100	182,4

M70034	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	160,4
155	161,8
150	163,6
145	165,7
140	168,1
135	171,0
130	174,3
125	178,1
120	182,4
115	187,3
110	192,9
105	199,2
100	206,3

M70008	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	182,8
155	184,4
150	186,3
145	188,7
140	191,6
135	194,8
130	198,6
125	202,9
120	207,8
115	213,4
110	219,7
105	226,9
100	235,0

M70073	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	151,3
155	152,6
150	154,3
145	156,2
140	158,6
135	161,3
130	164,4
125	168,0
120	172,1
115	176,7
110	181,9
105	187,8
100	194,5

M70138	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	153,8
155	155,2
150	156,8
145	158,9
140	161,2
135	164,0
130	167,2
125	170,8
120	174,9
115	179,6
110	184,9
105	191,0
100	197,8

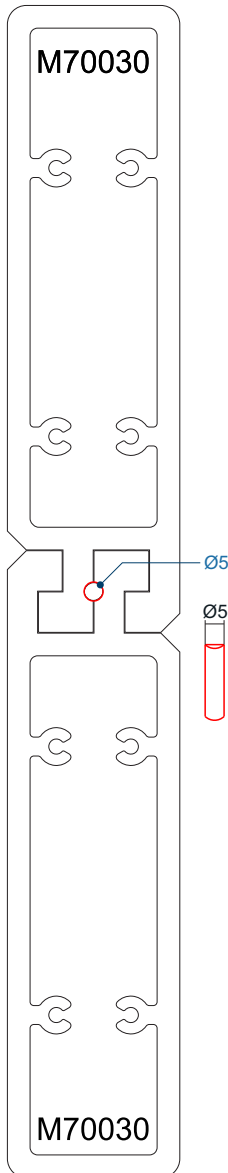
M70009	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	231,5
155	233,5
150	236,0
145	239,1
140	242,6
135	246,8
130	251,6
125	257,0
120	263,3
115	270,3
110	278,3
105	287,4
100	297,6

M71214	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	277,2
155	279,6
150	282,6
145	286,2
140	290,5
135	295,5
130	301,2
125	307,8
120	315,2
115	323,7
110	333,3
105	344,1
100	356,4

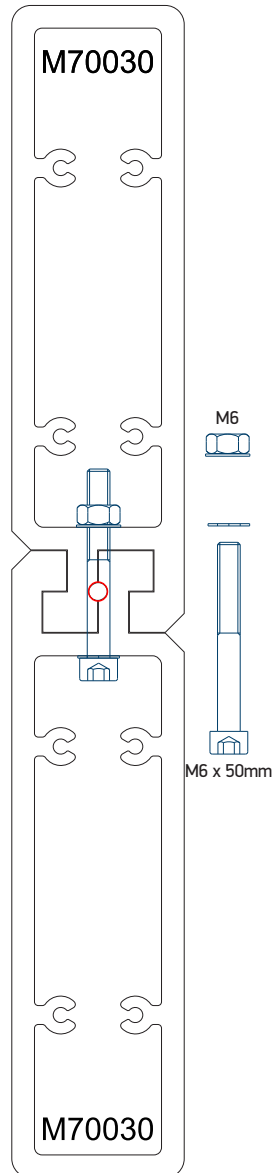
M70098*	
R Angle Γωνία	X Cutting step Βήμα κοπής
160	101,5
155	102,4
150	103,5
145	104,9
140	106,4
135	108,2
130	110,3
125	112,7
120	115,5
115	118,6
110	122,1
105	126,0
100	130,5

* Το Προφίλ έχει 2 θαλάμους και θα χρειαστούν 2τεμ M70030
 *The profile has 2 chambers, and 2pcs of M70030 will be installed

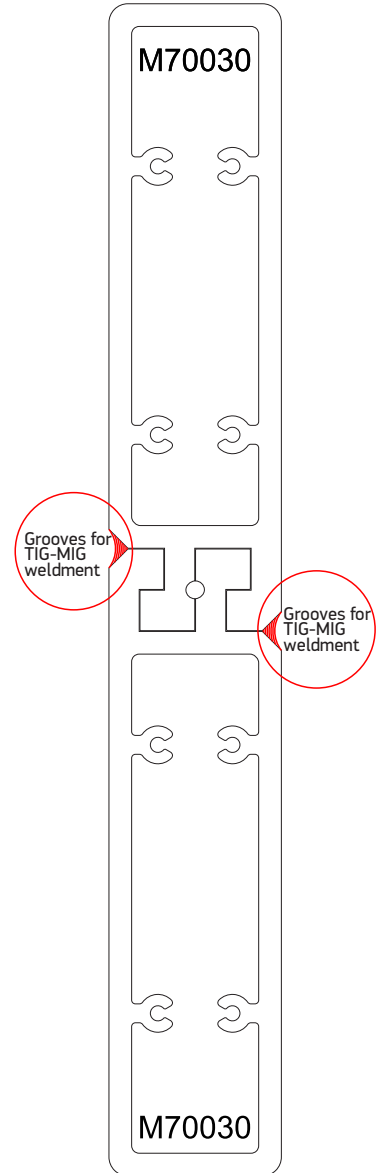
STEP 1



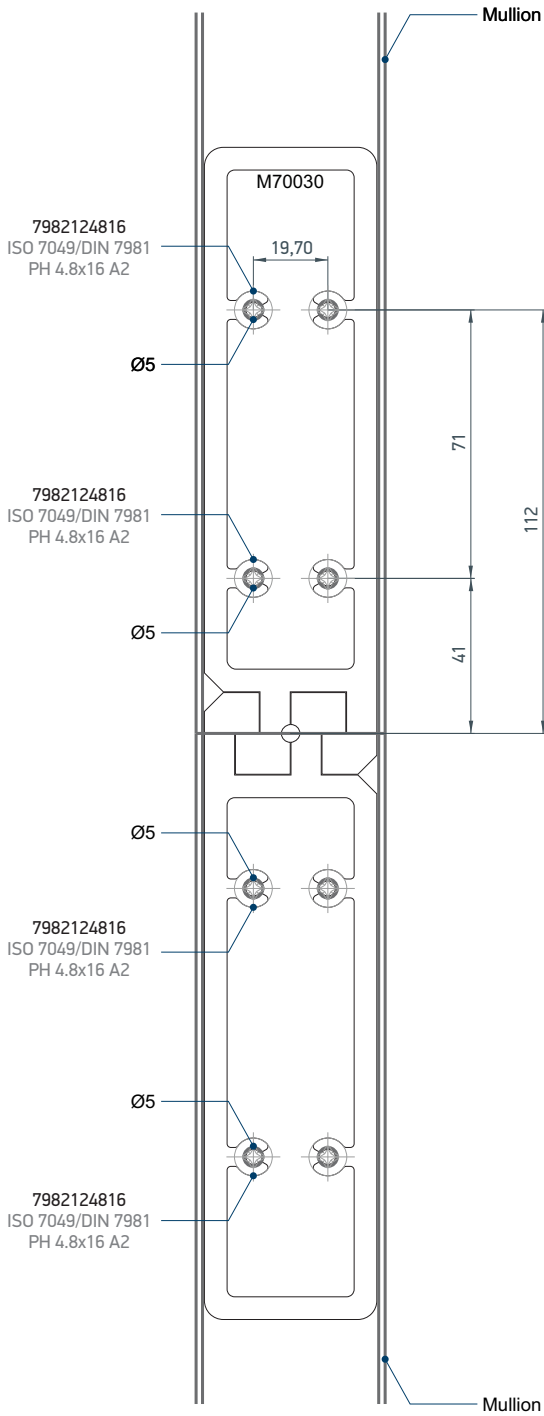
STEP 2



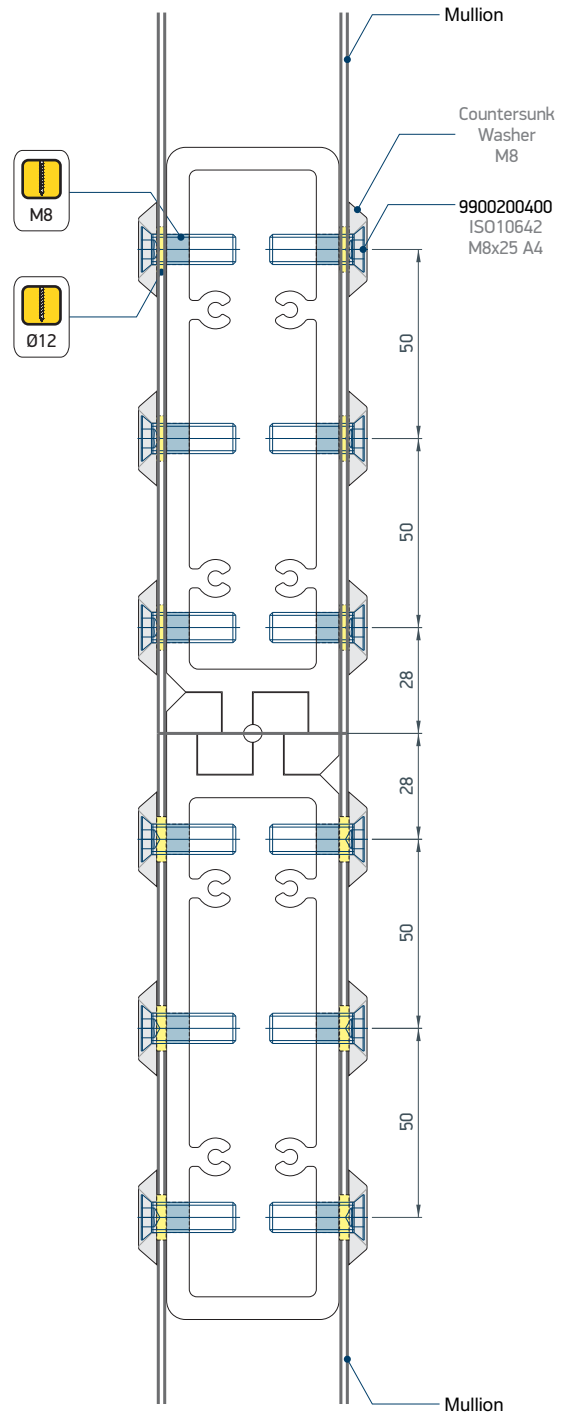
STEP 3

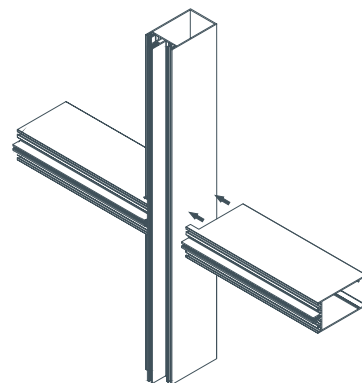


STEP 4

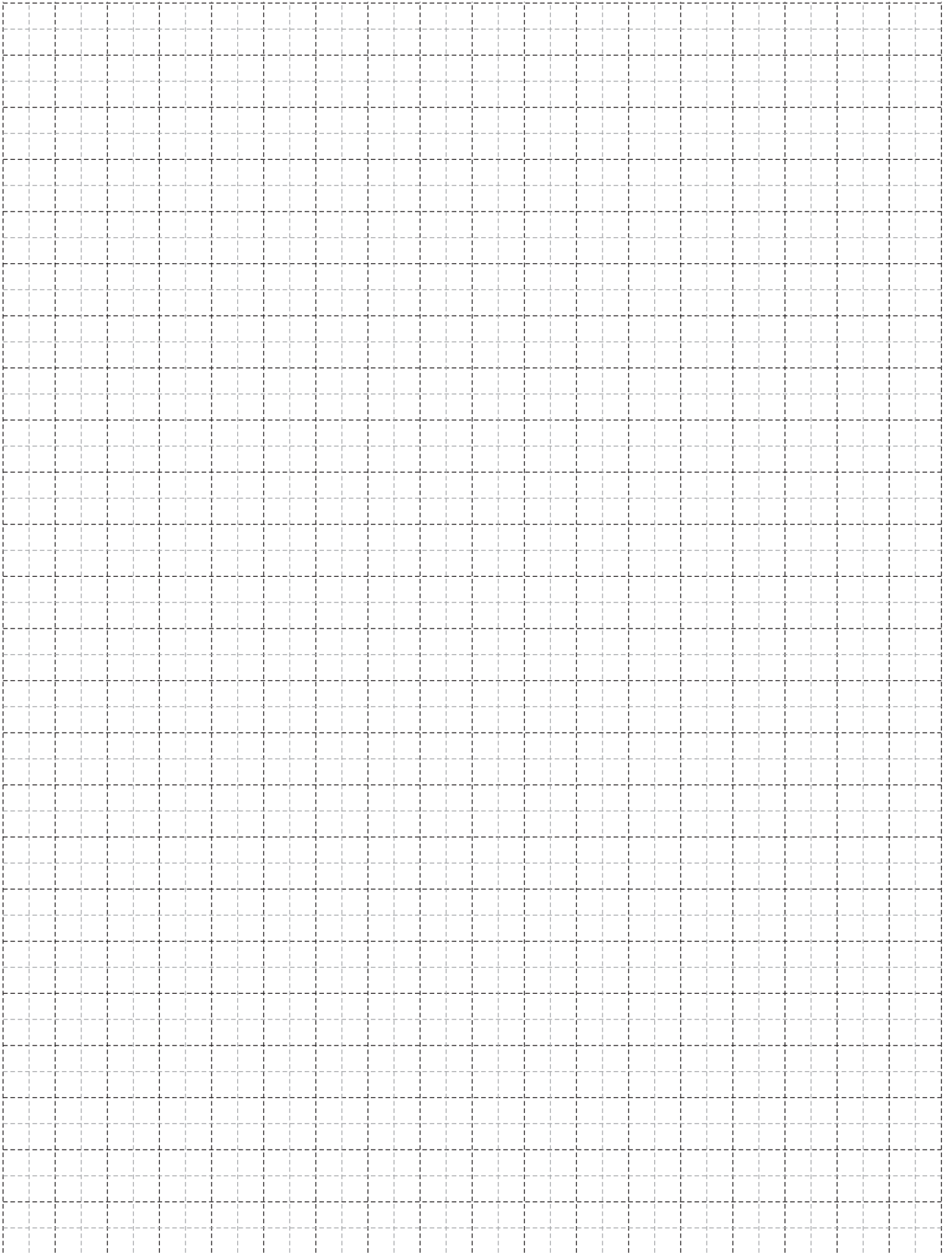


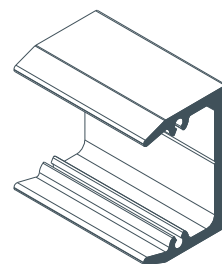
STEP 5



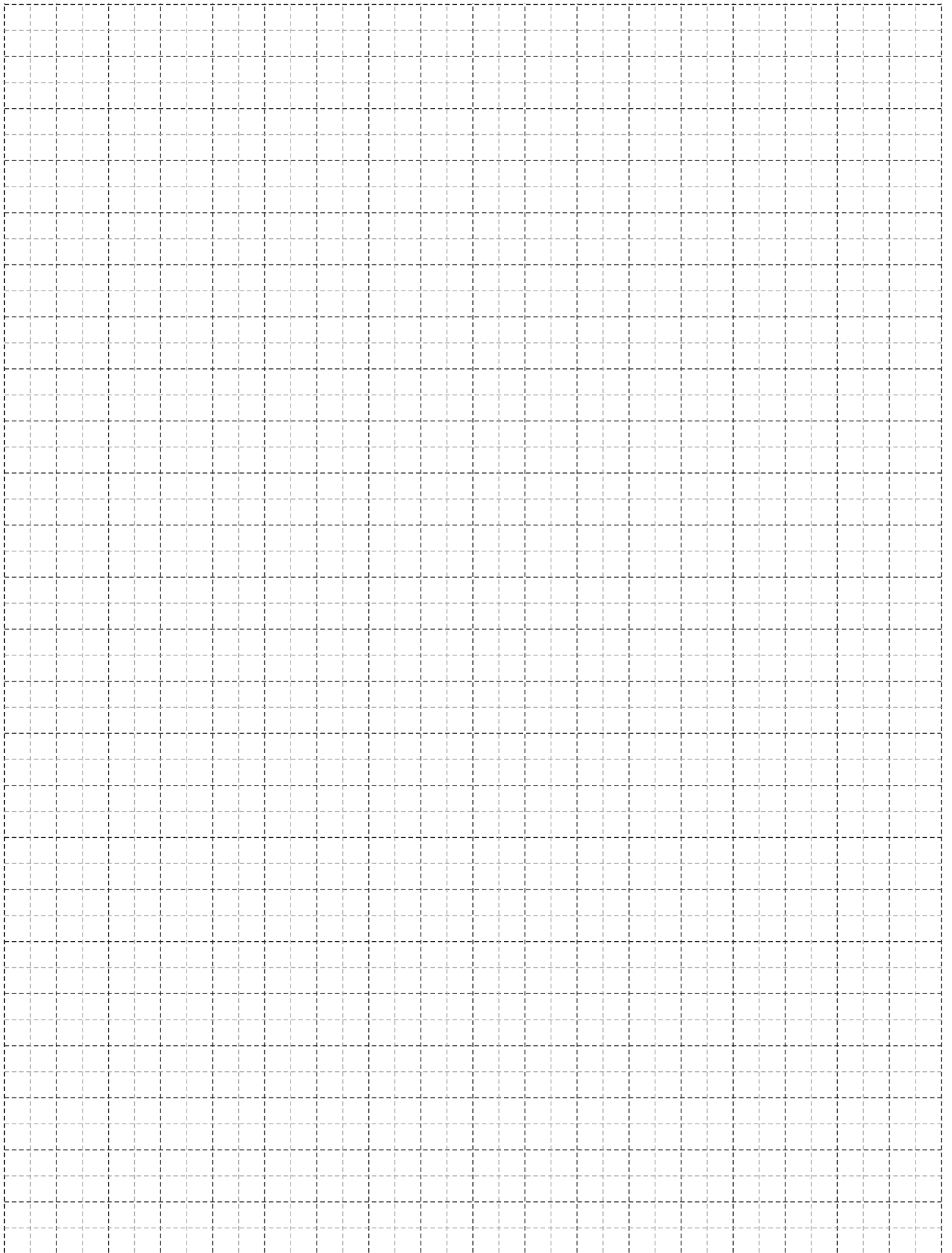


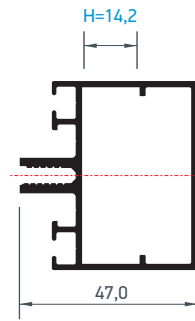
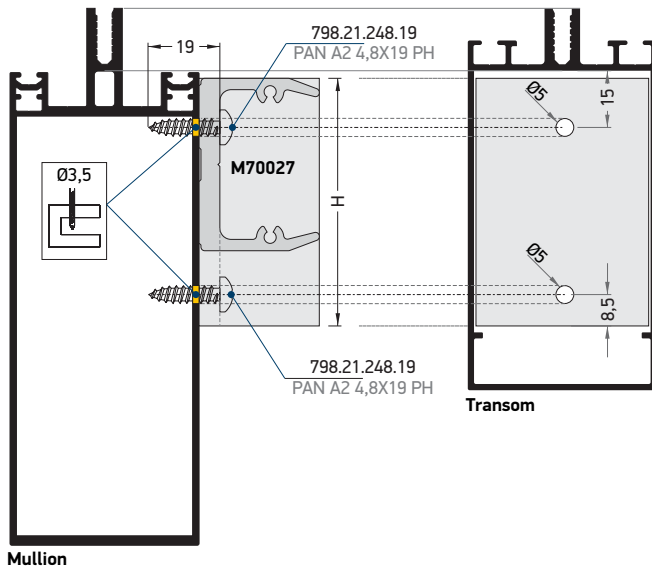
ΣΥΝΔΕΣΜΟΙ ΤΡΑΒΕΡΣΑΣ
TRANSOM CONNECTORS



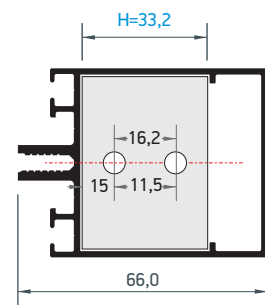


Σύνδεσμος τραβέρσας M70027
M70027 Transom connector

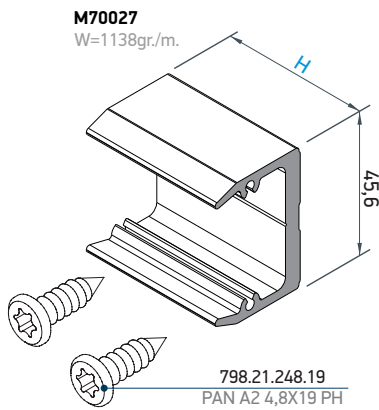




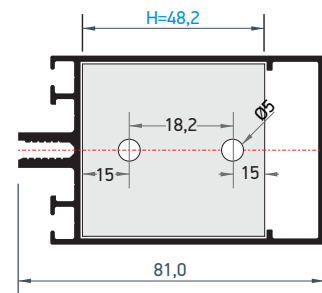
M70012



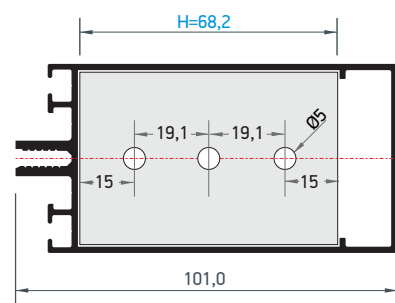
M70013



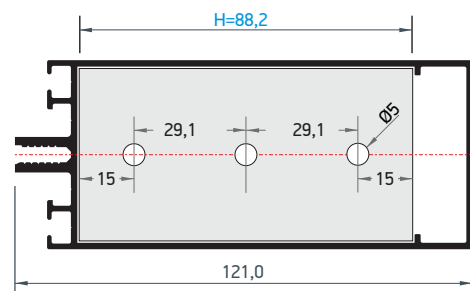
M70027
W=1138gr/m.



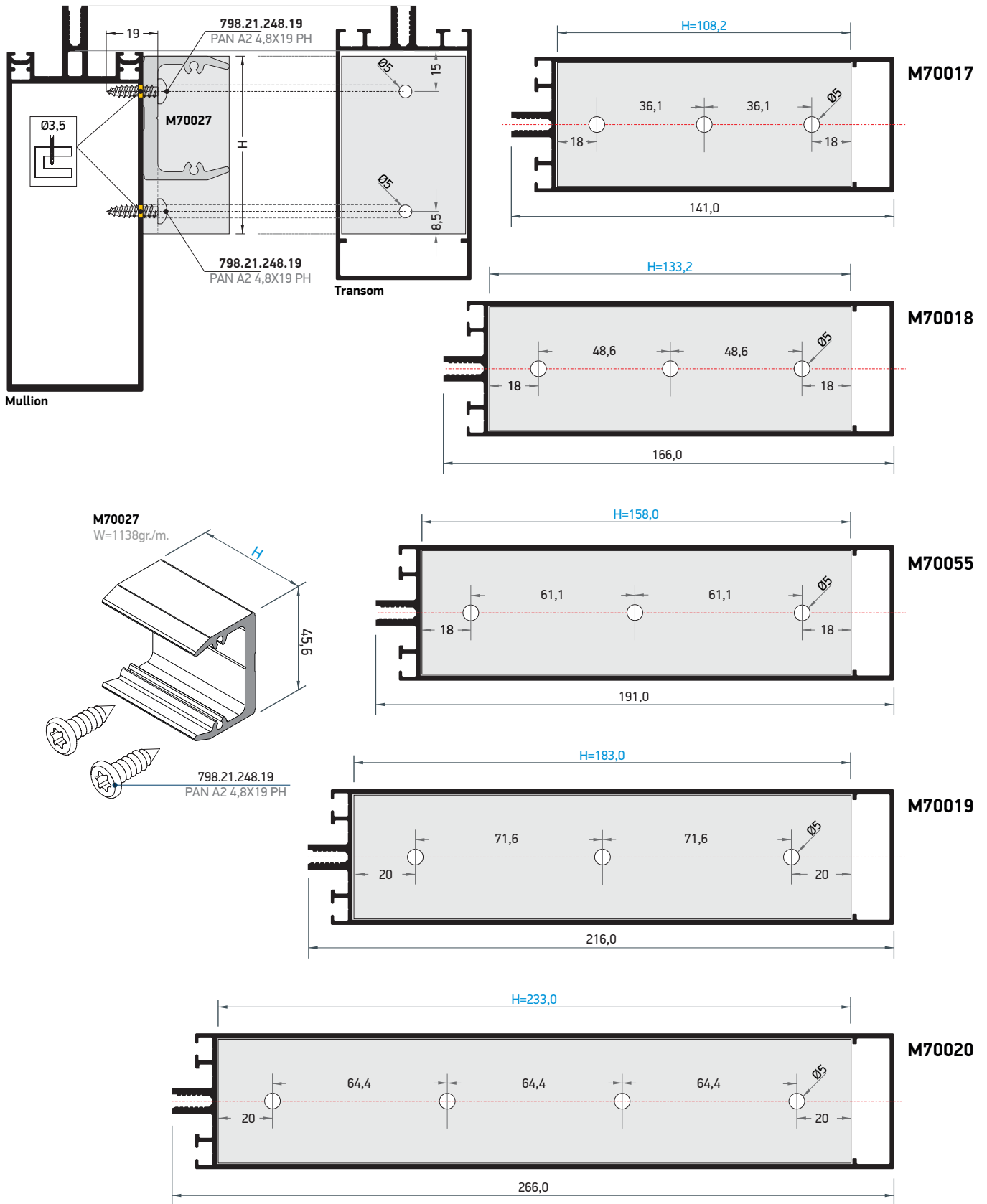
M70014



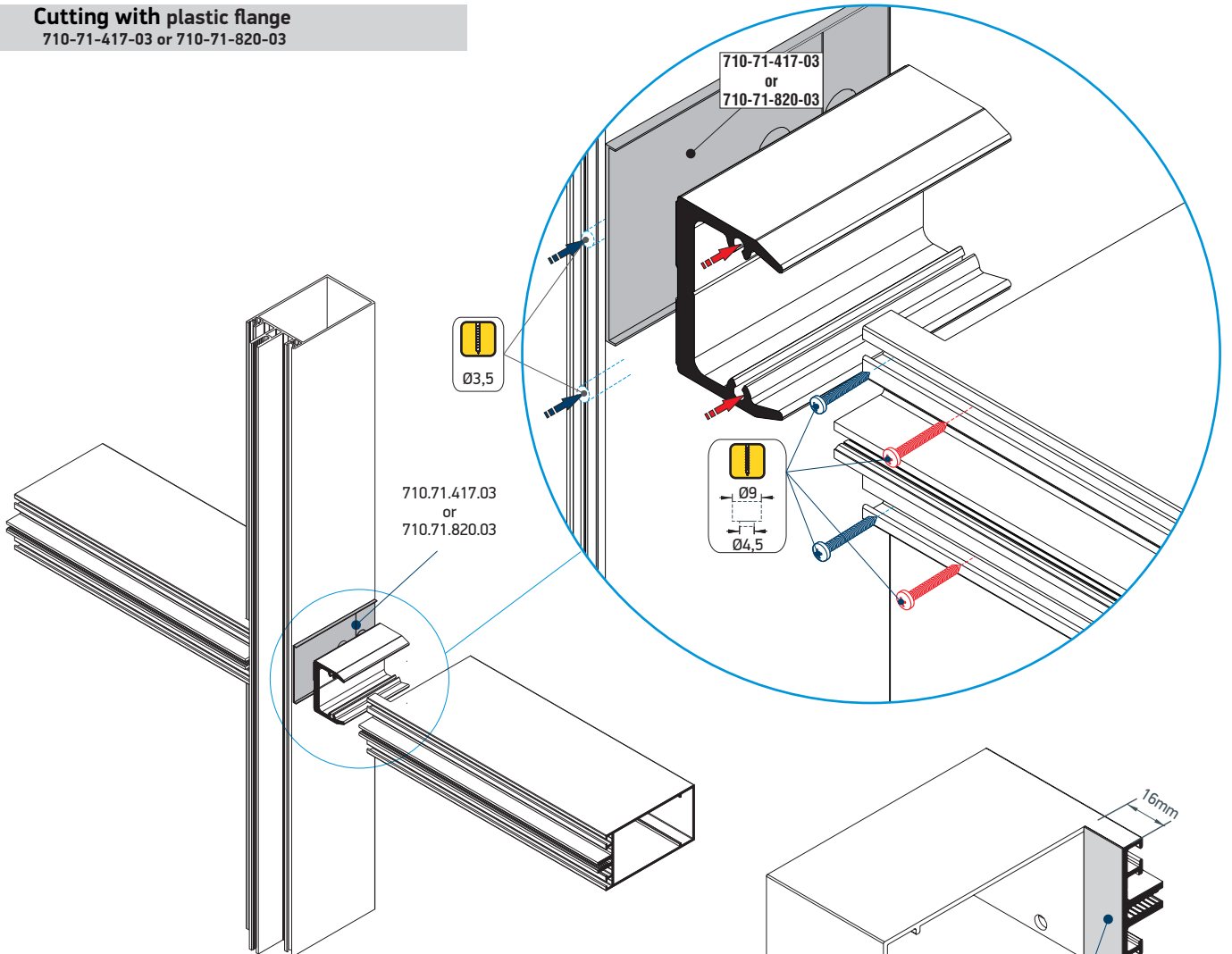
M70015



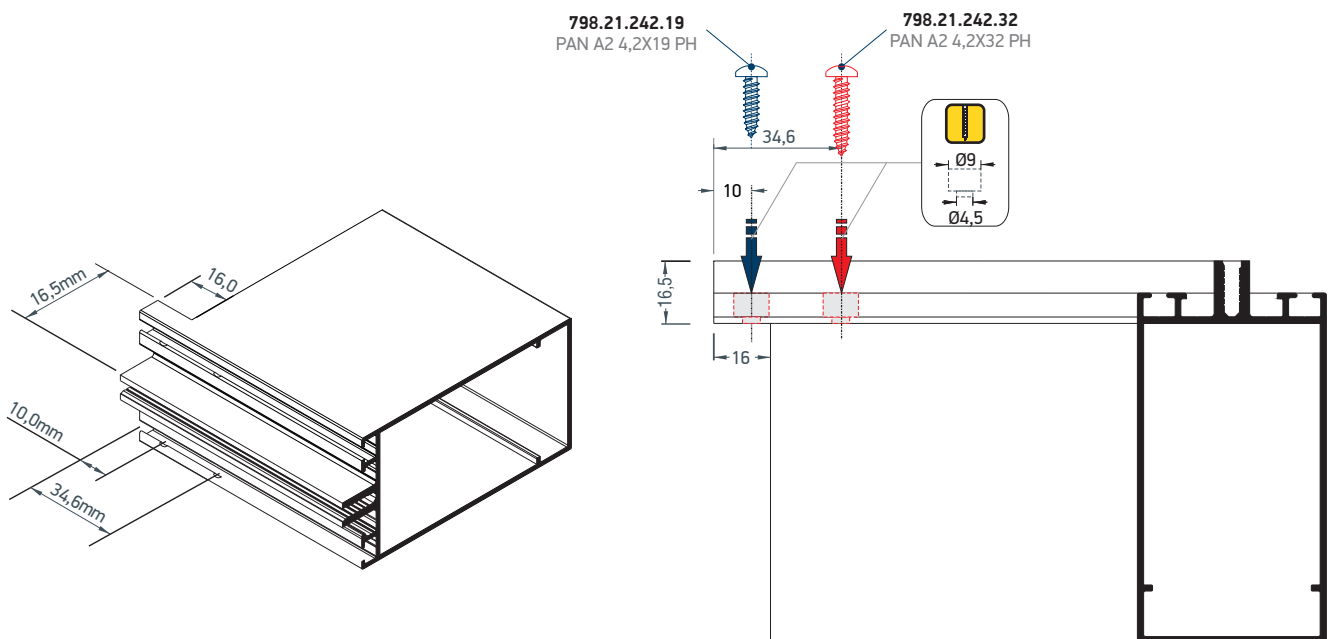
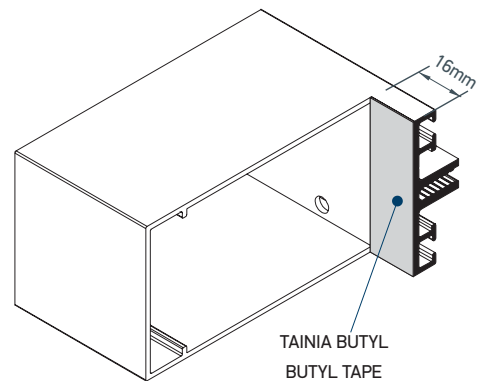
M70016



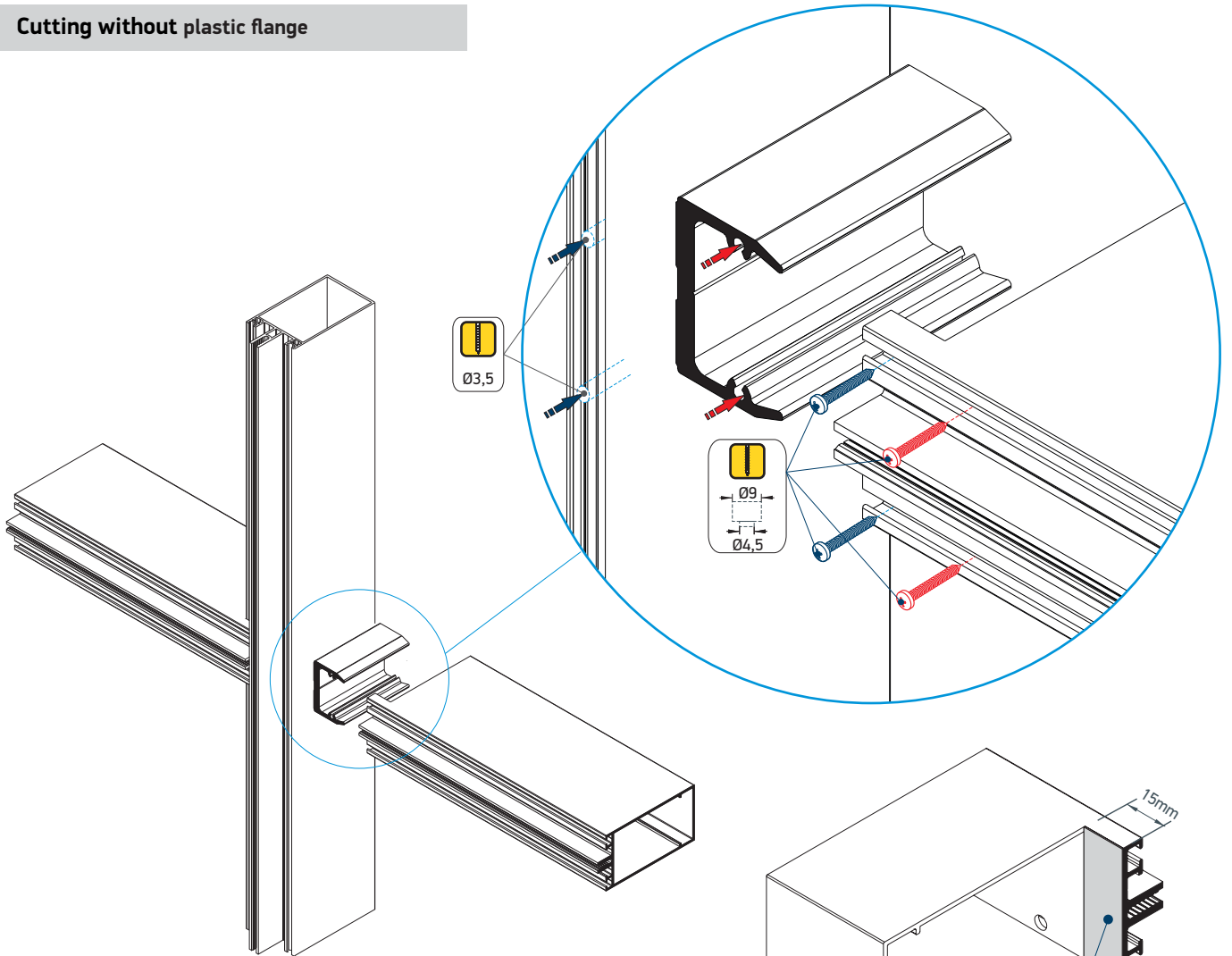
Cutting with plastic flange
710-71-417-03 or 710-71-820-03



*We apply silicone before placing the screws
Τοποθετούμε σιλικόνη πρίν την τοποθέτηση των βιδών



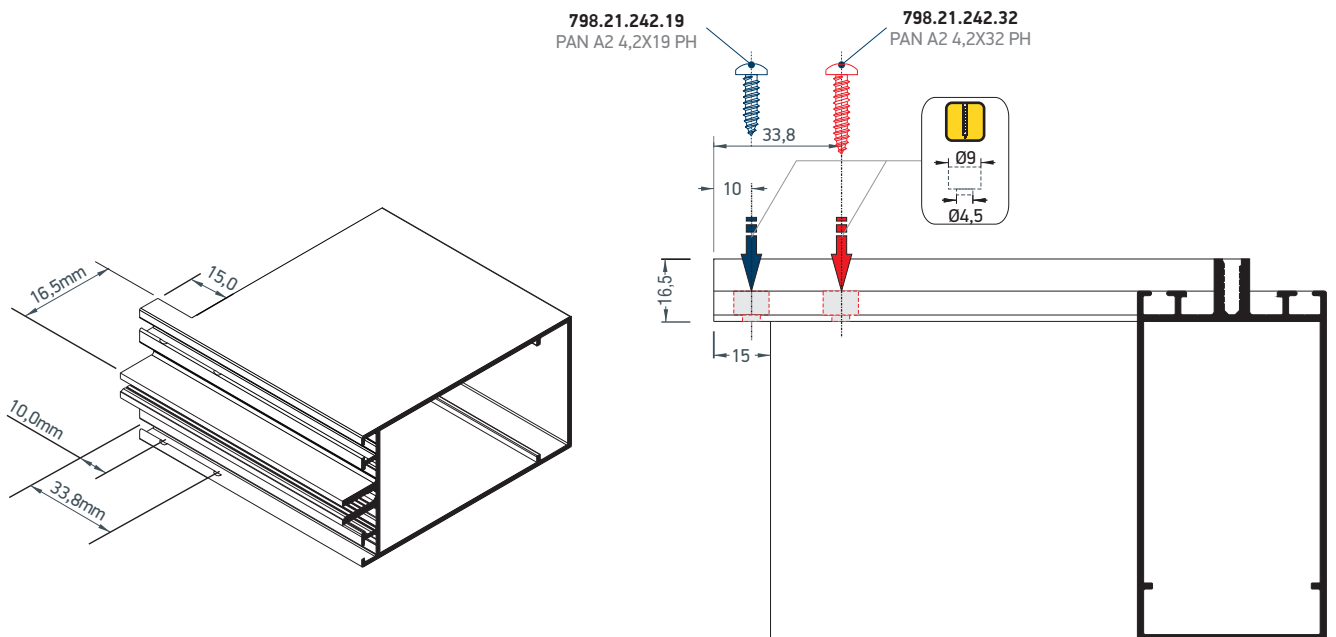
Cutting without plastic flange

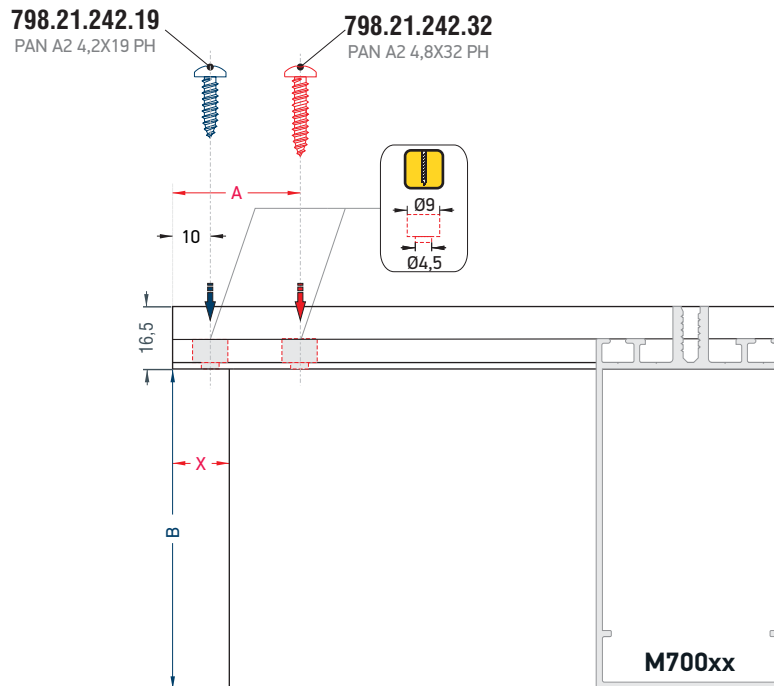


*We apply silicone before placing the screws
Τοποθετούμε σιλικόνη πρίν την τοποθέτηση των βιδών

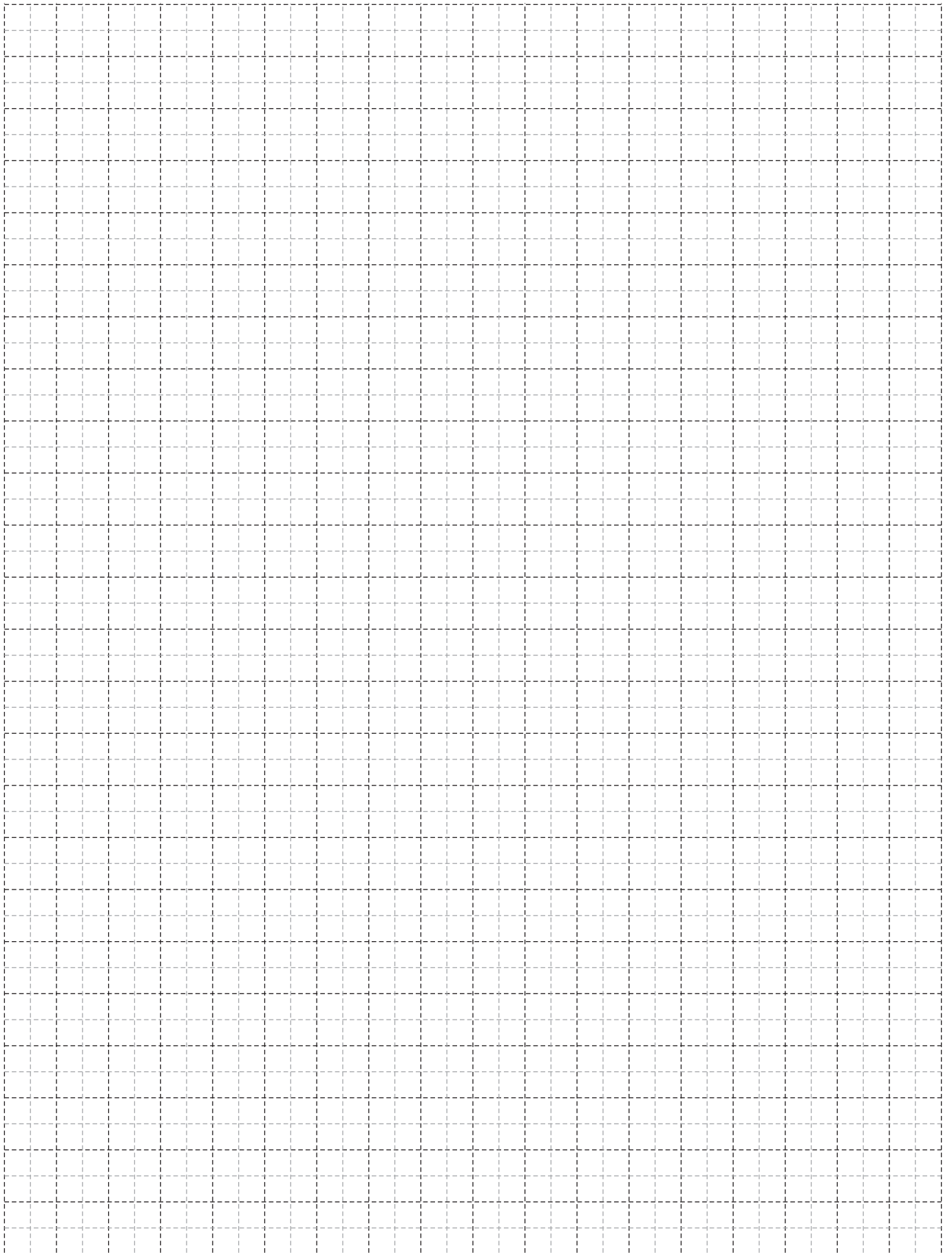
798.21.242.19
PAN A2 4,2X19 PH

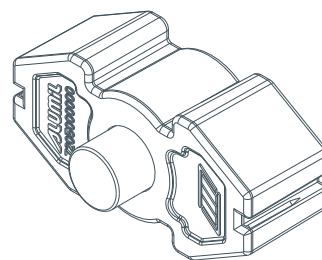
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PAN A2 4,2X32 PH



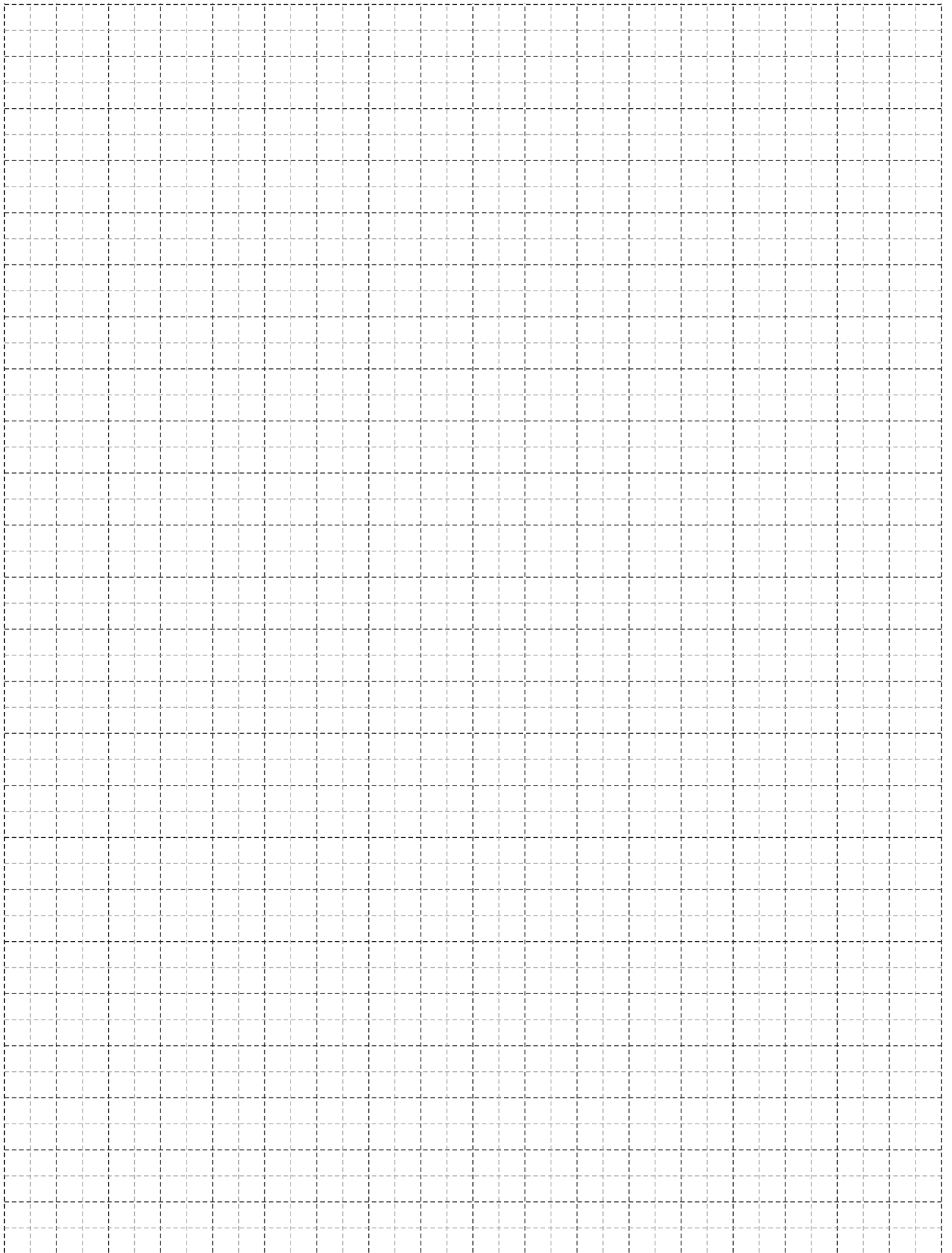


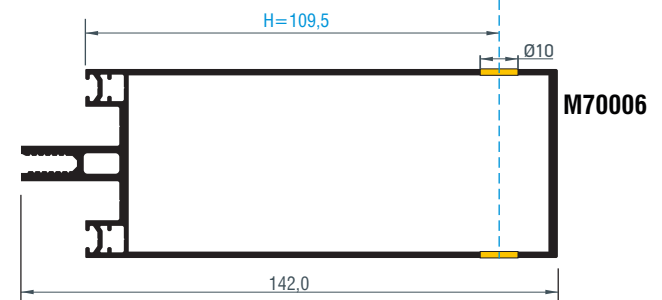
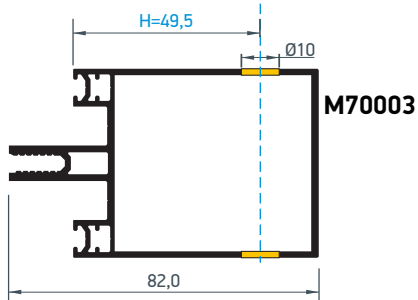
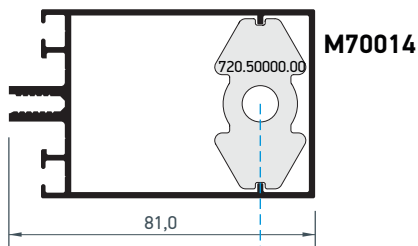
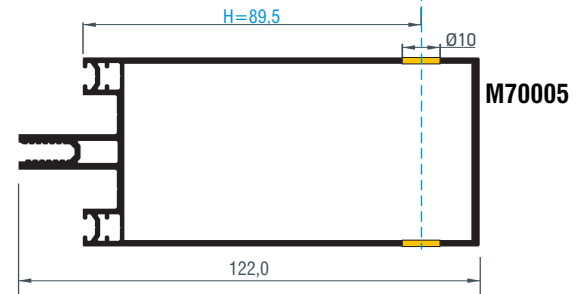
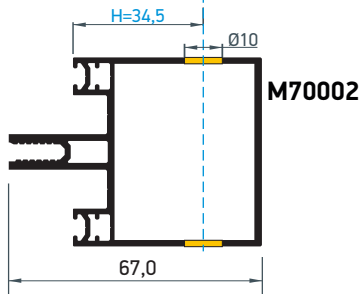
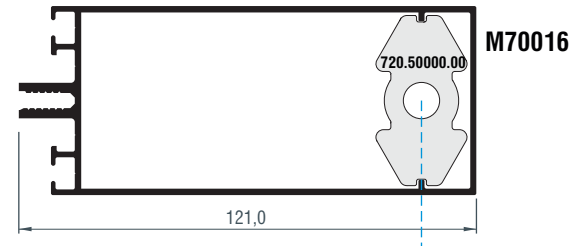
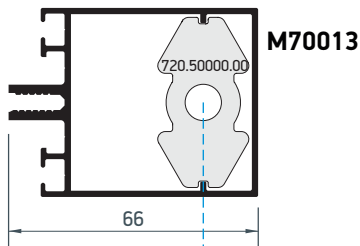
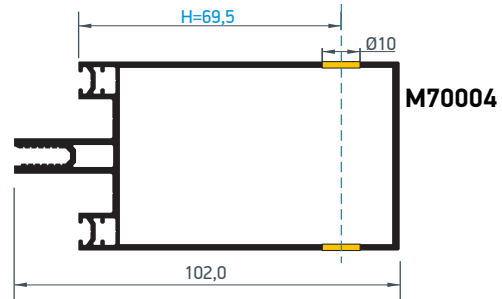
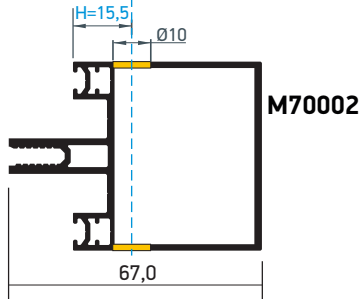
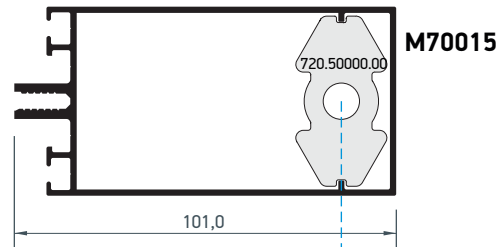
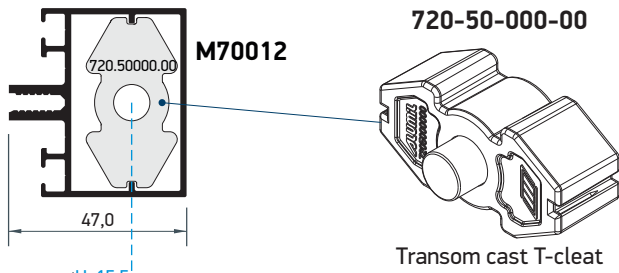
Transom Τραβέρσα	Τοποθέτηση με τάπη τραβέρσας Installation with transom end cap 710-71-417-03 ή 710-71-820-03	Τοποθέτηση χωρίς τάπη τραβέρσας Installation without transom end cap	Τοποθέτηση τραβέρσας συρταρωτά Front-mounted installation of transom
	X=15mm A=33,8mm	X=16mm A=34,6mm	X=21mm A=33,8mm
M70011	B=11,5		
M70012	B=30,5		
M70013	B=49,5		
M70014	B=64,5		
M70015	B=84,5		
M70016	B=104,5		
M70017	B=124,5		
M70018	B=149,5		
M70055	B=174,5		
M70019	B=199,5		
M70020	B=249,5		

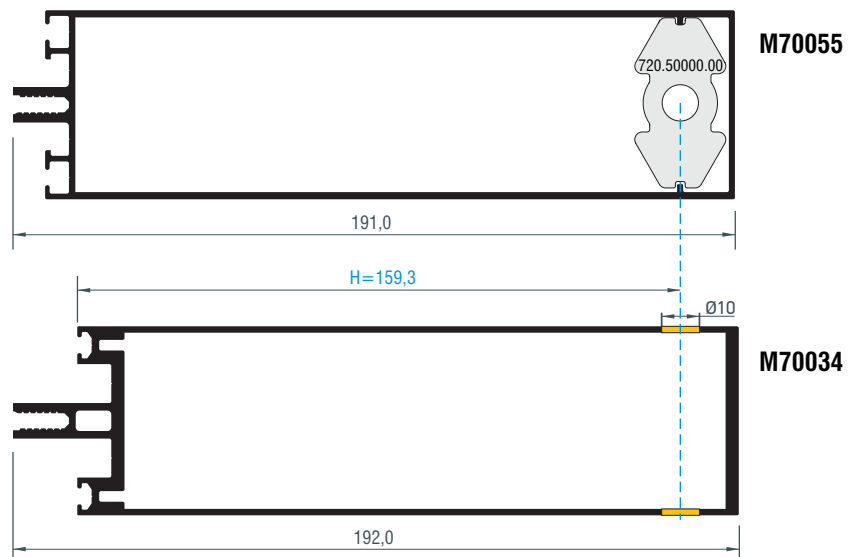
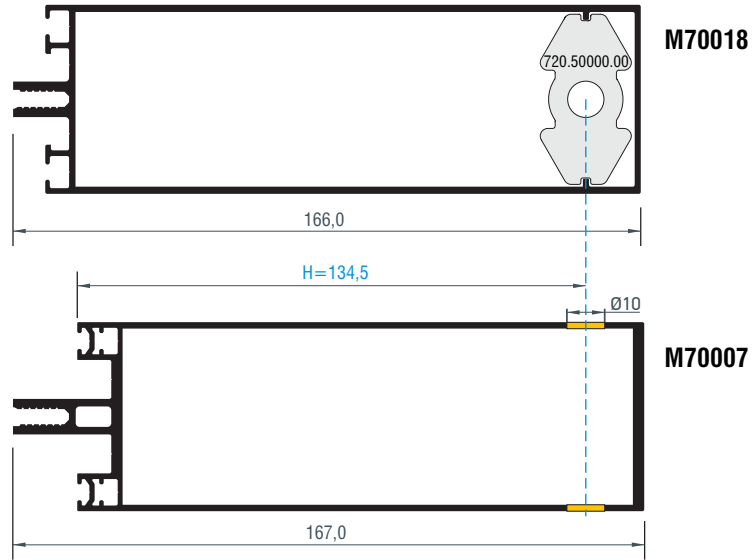


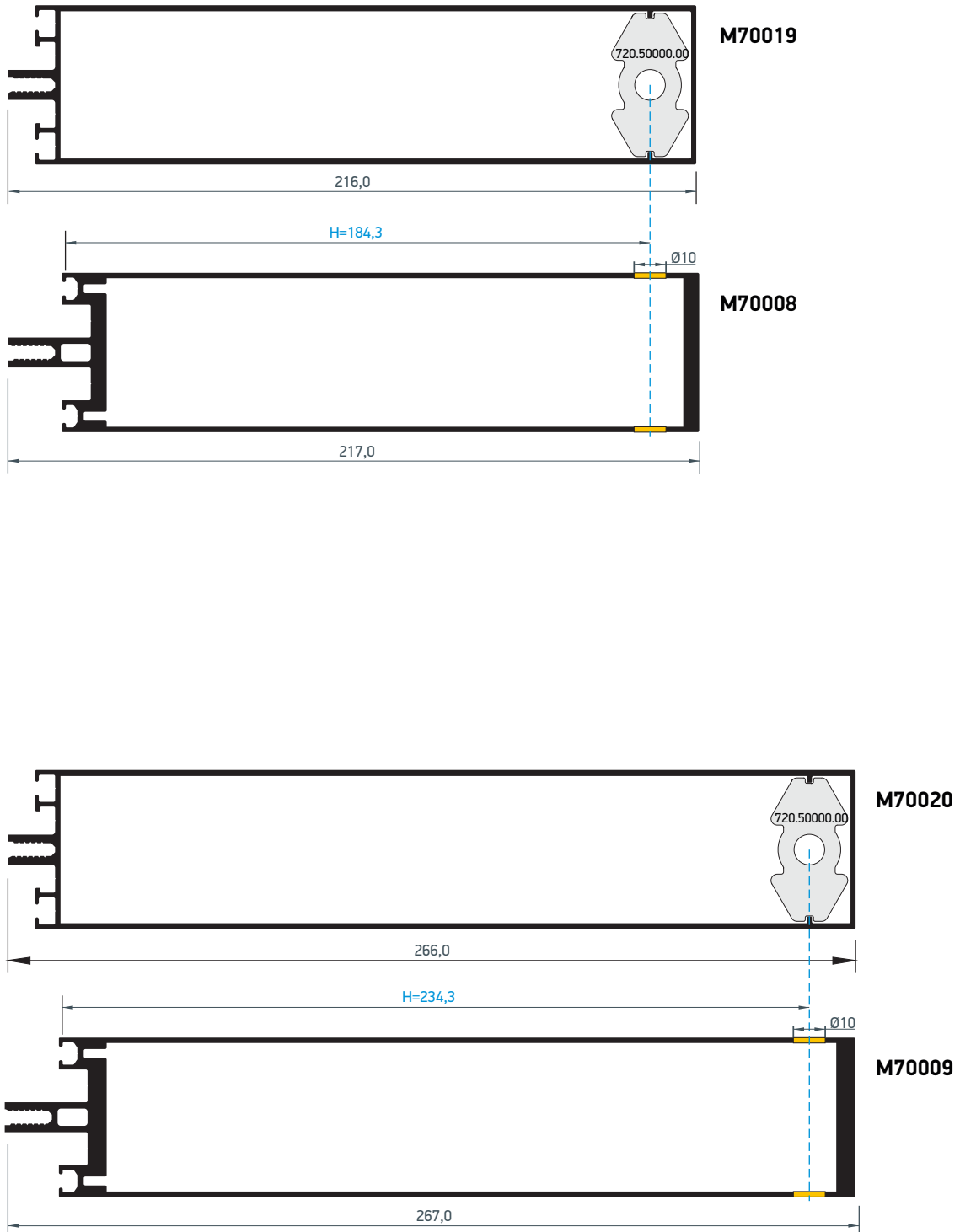


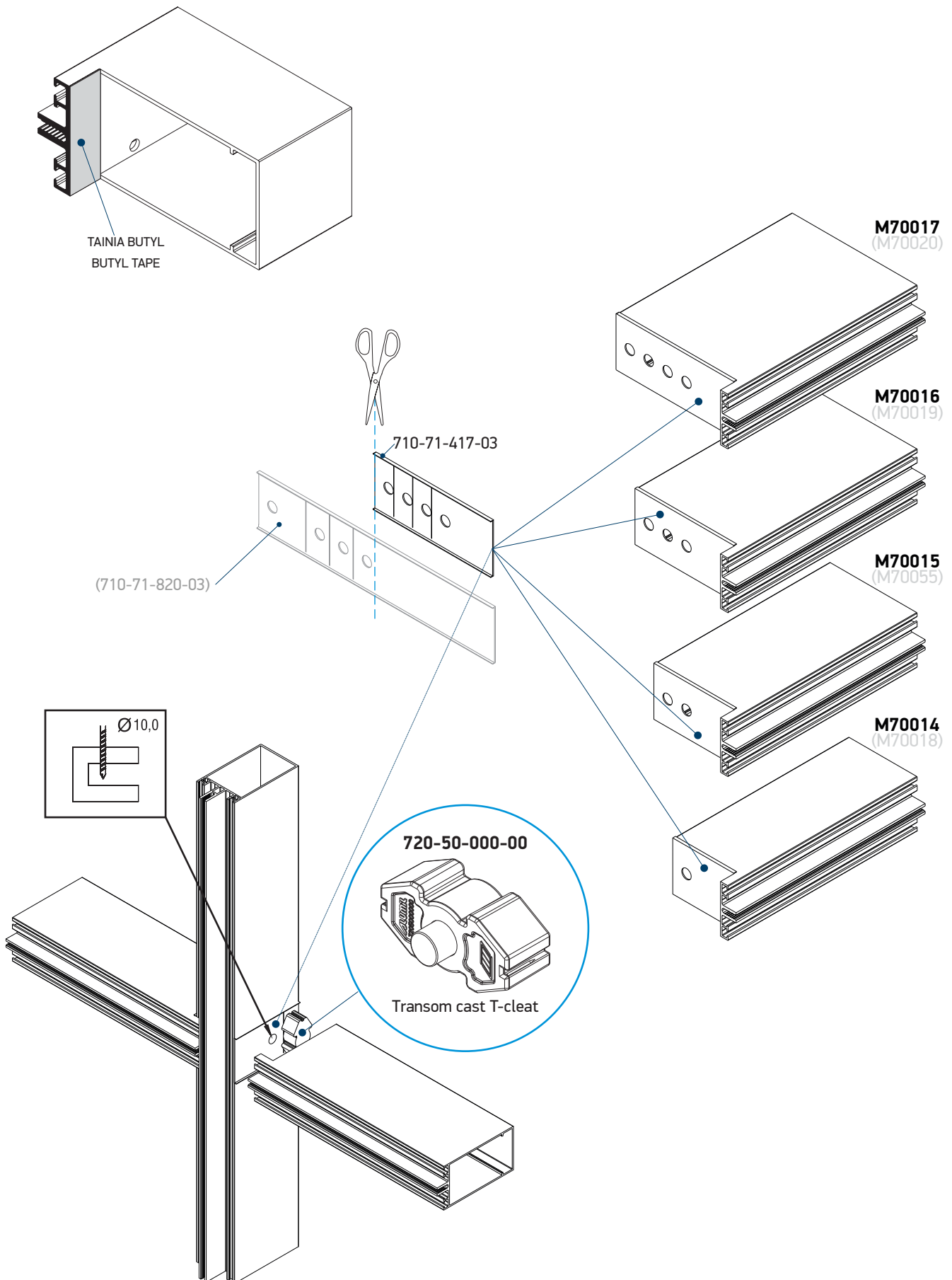
T-Cleat σύνδεσμος τραβέρσας
Transom connector T-Cleat

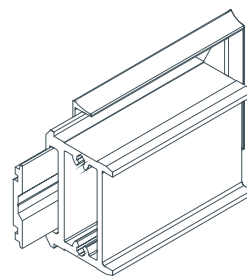




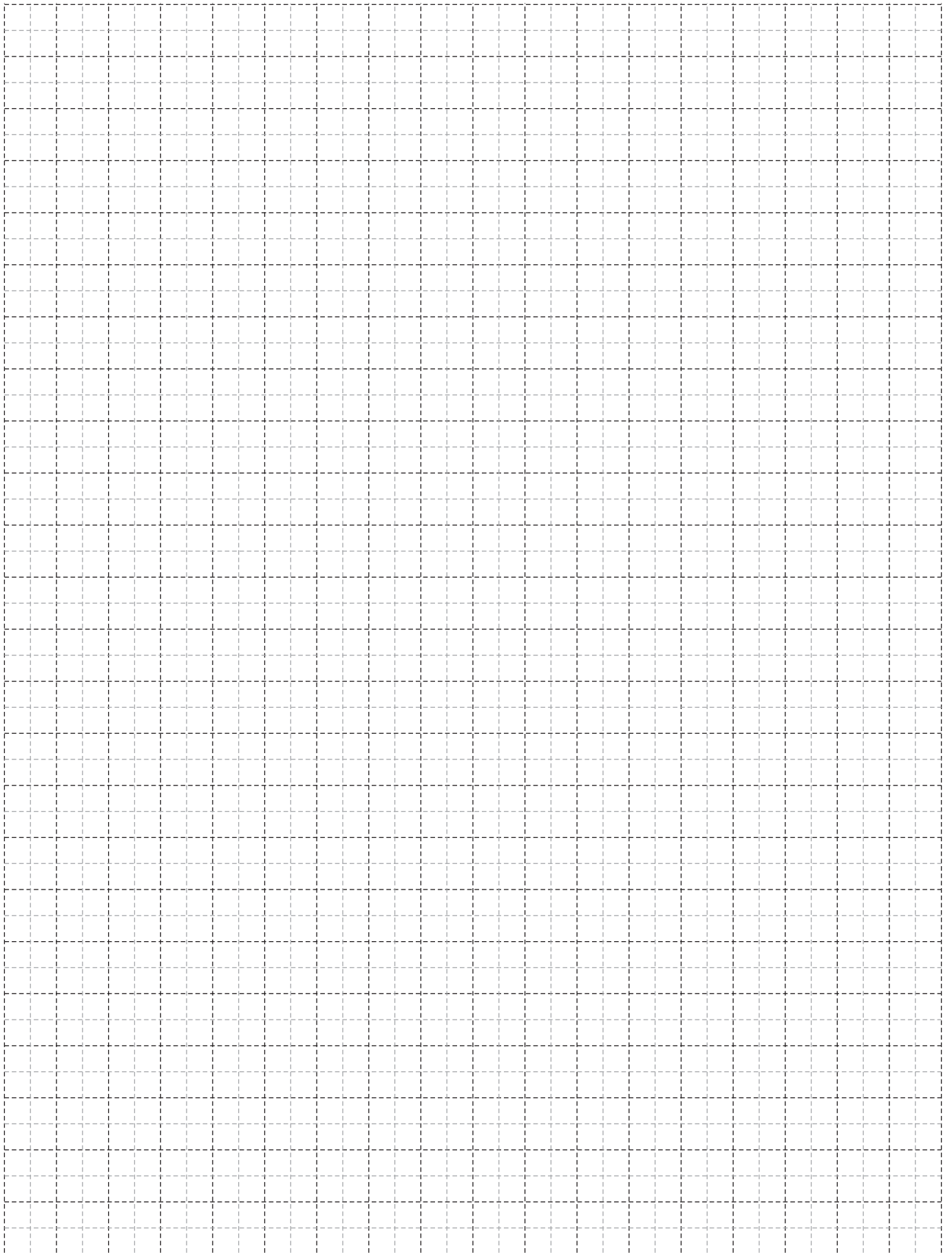


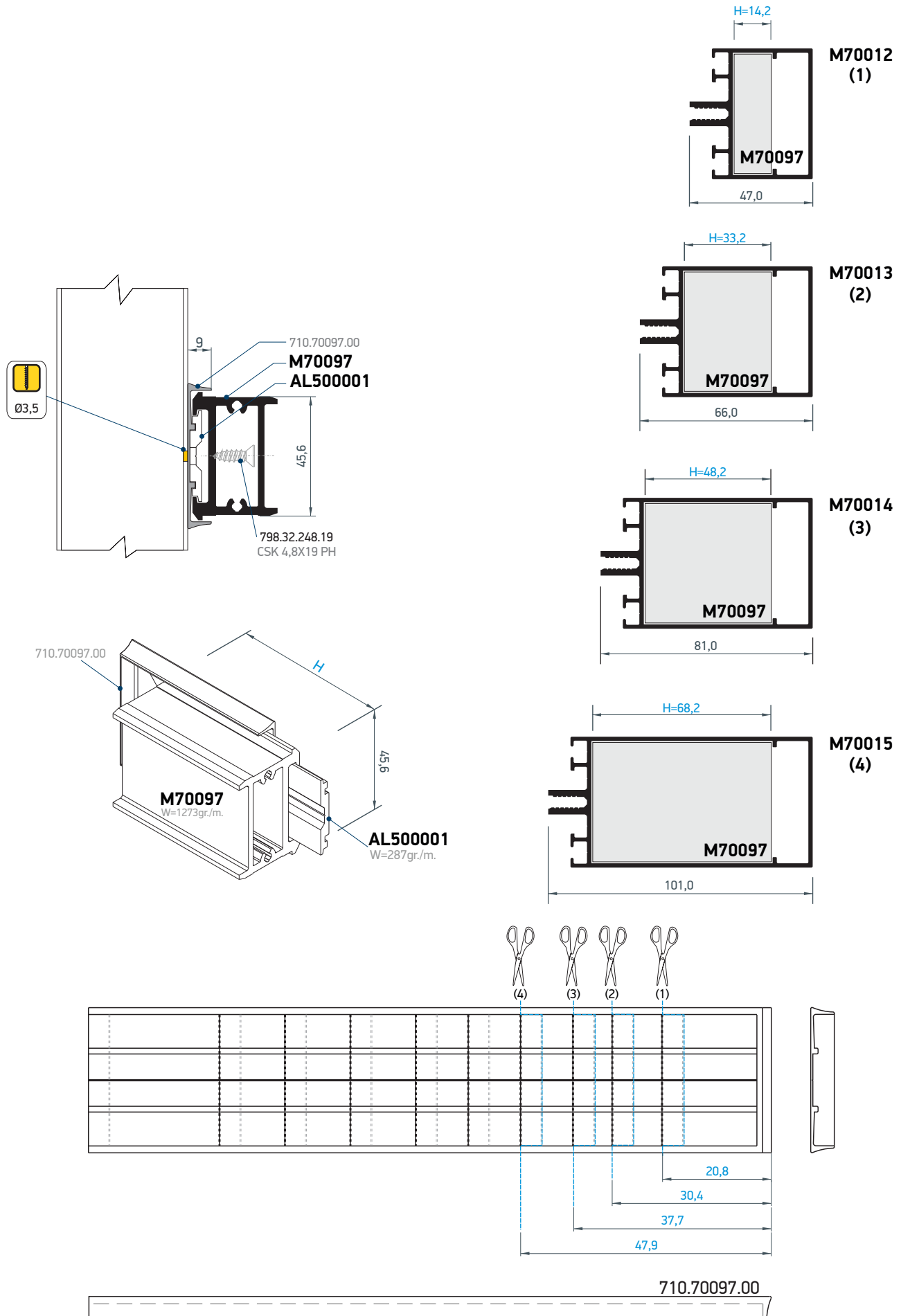


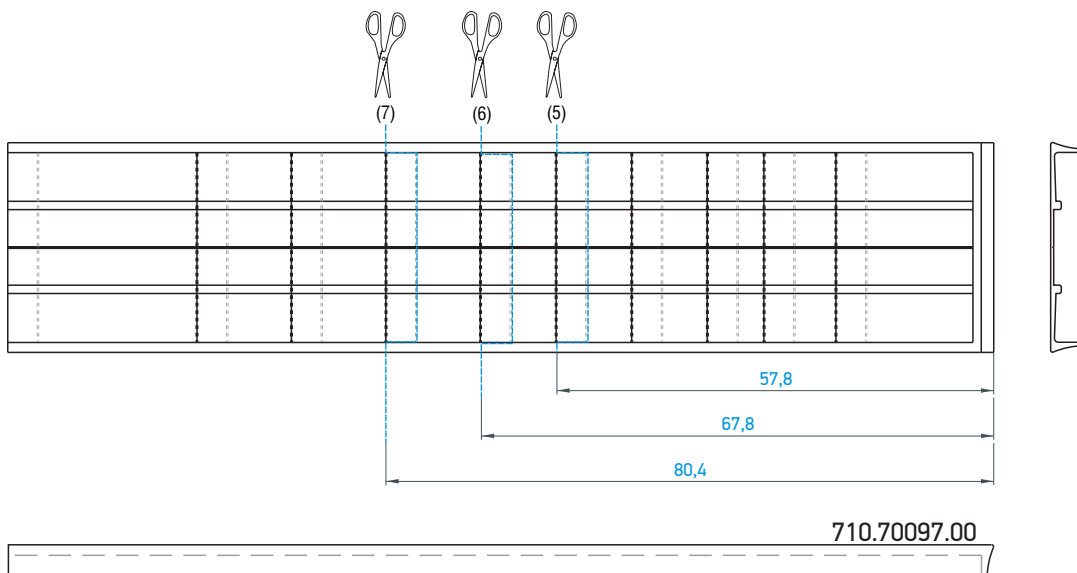
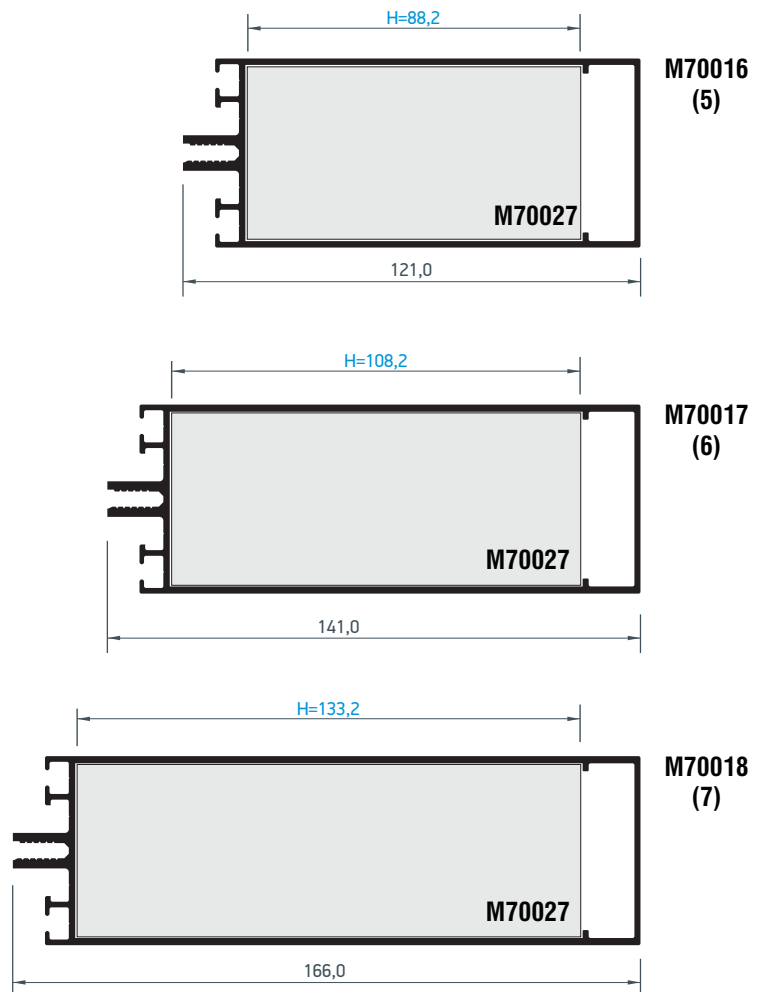


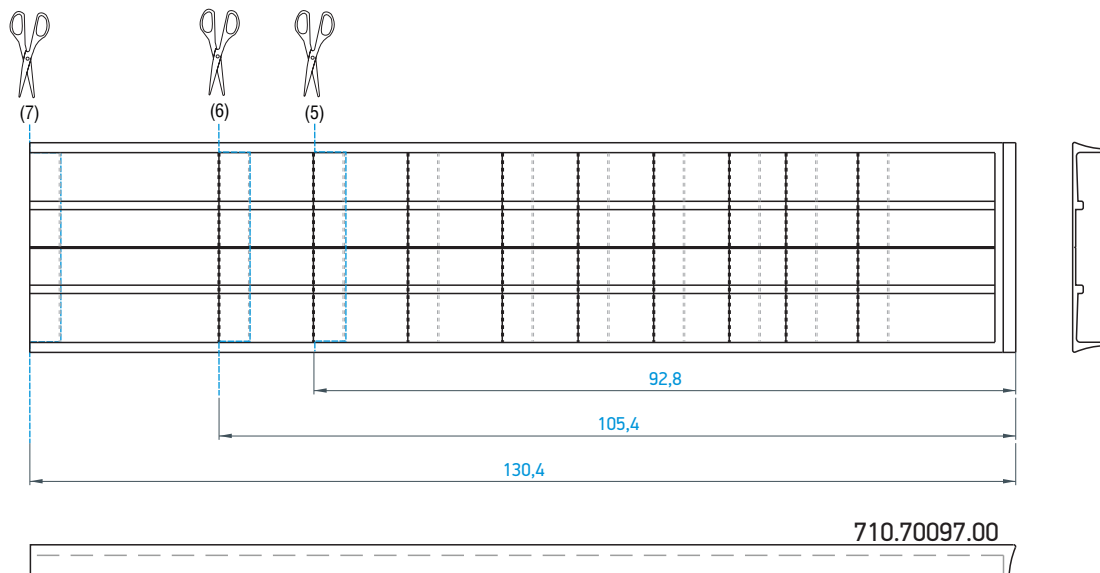
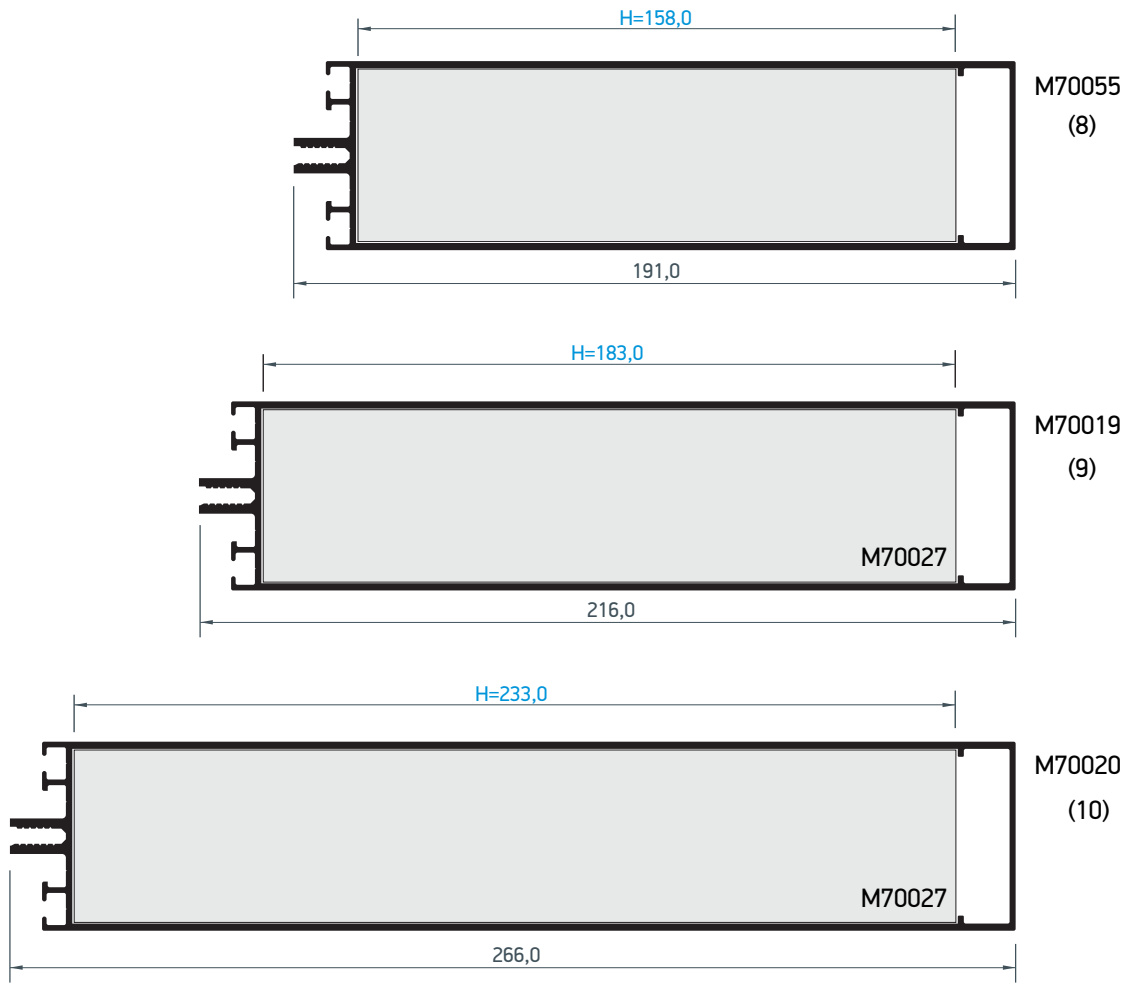


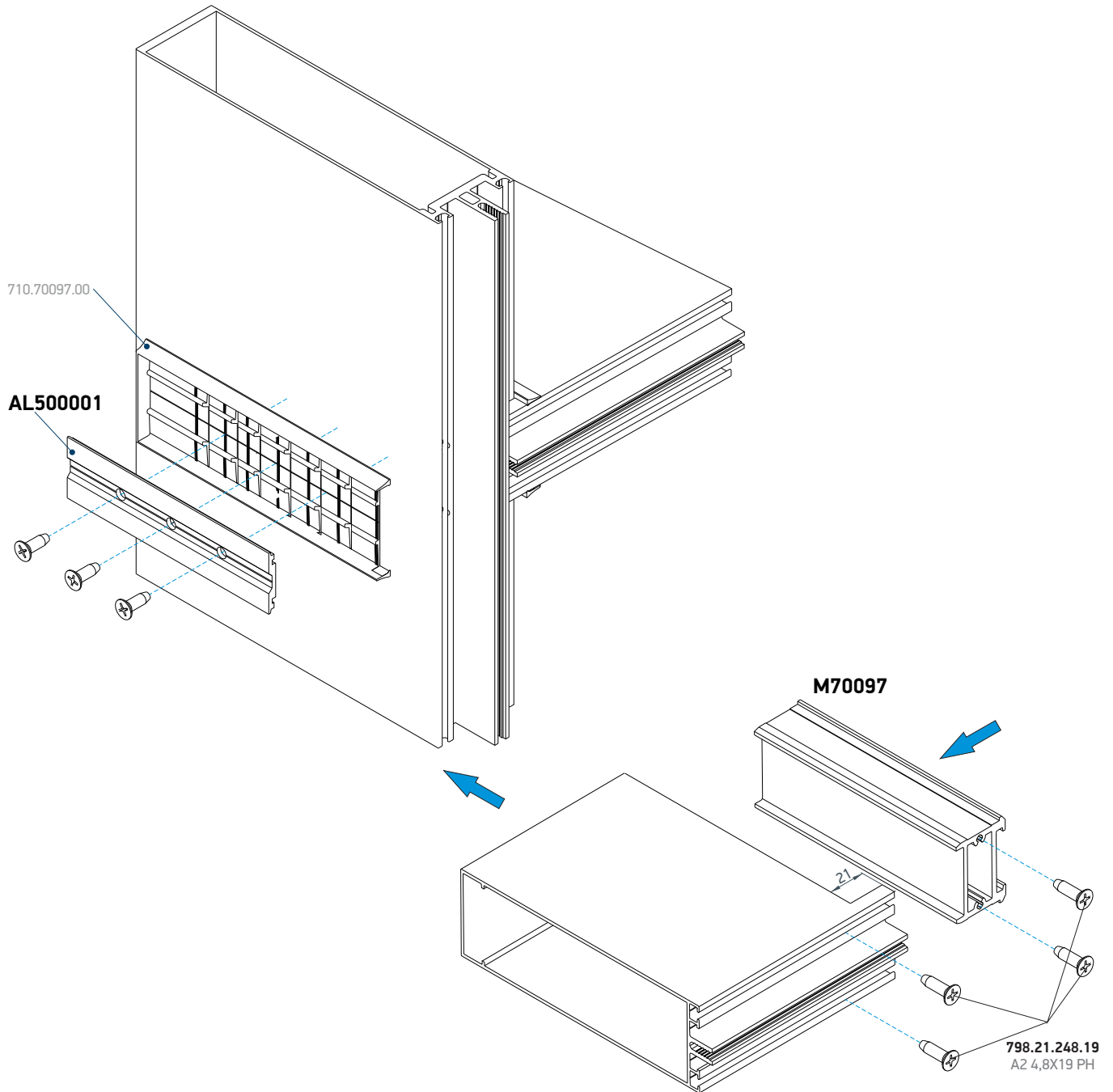
Εμπρόσθια τοποθέτηση τραβέρσας
Front transom installation



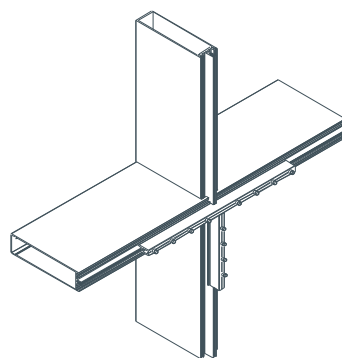




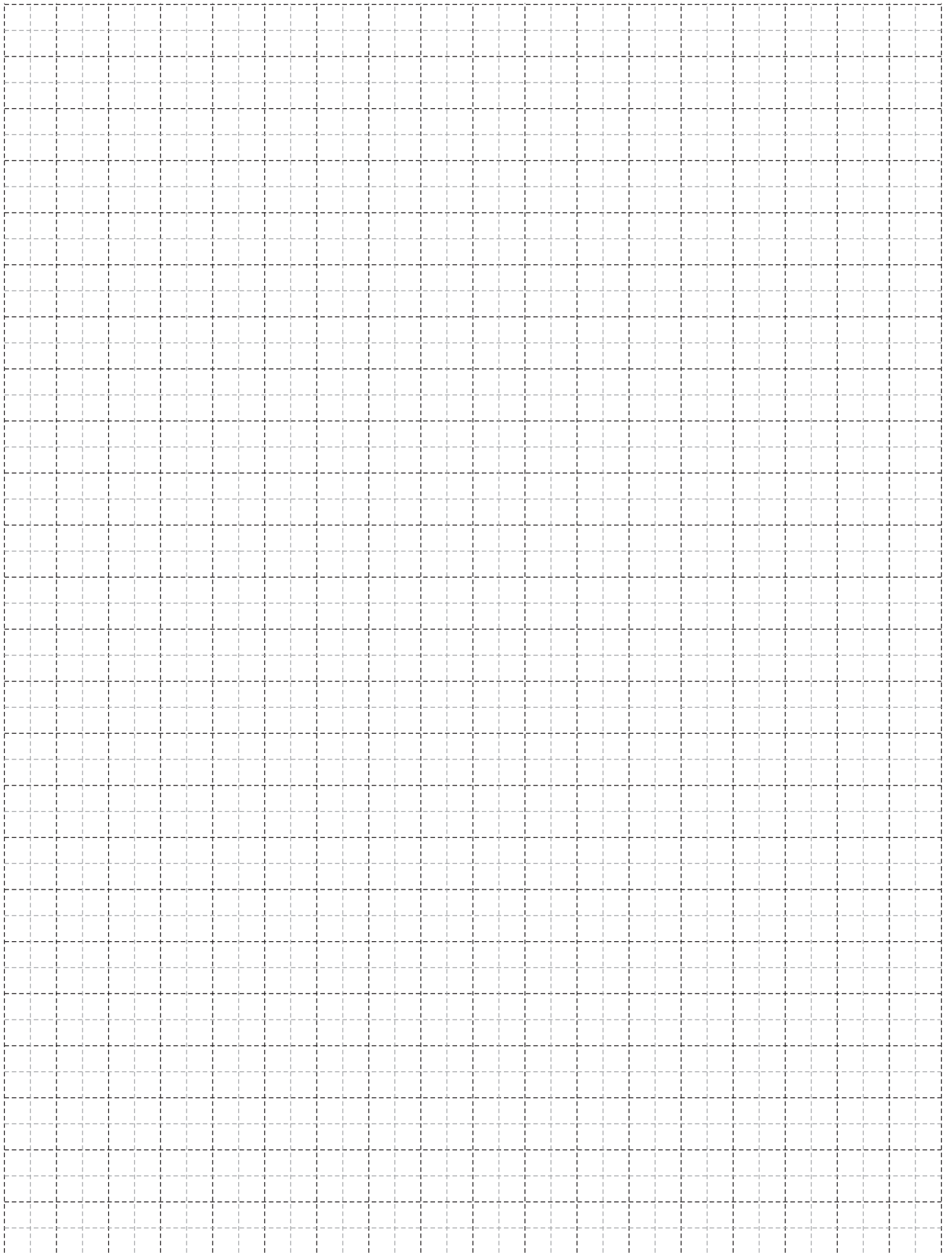




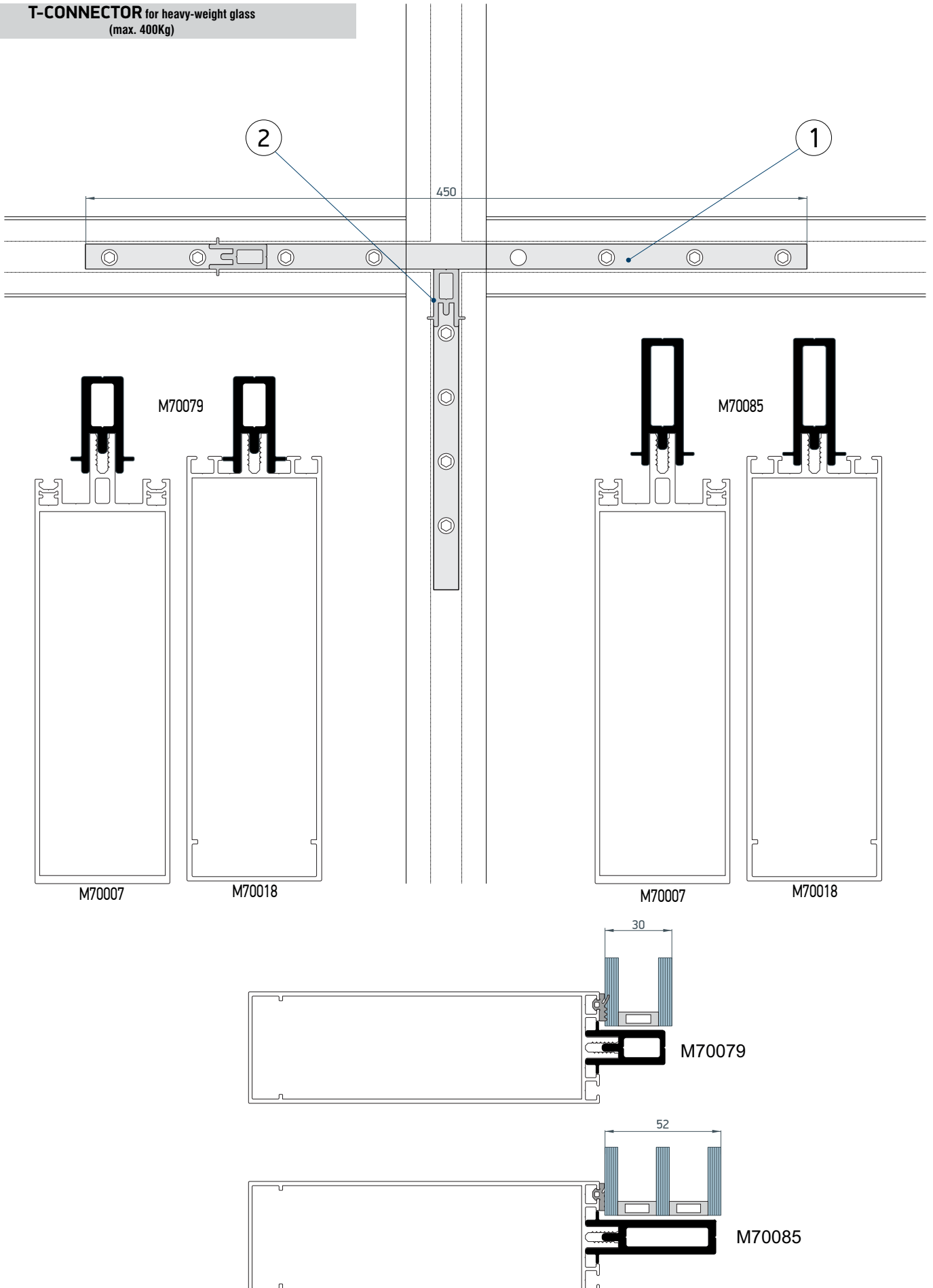
*We apply silicone before placing the screws
 Τοποθετούμε σιλικόνη πριν την τοποθέτηση των βιδών

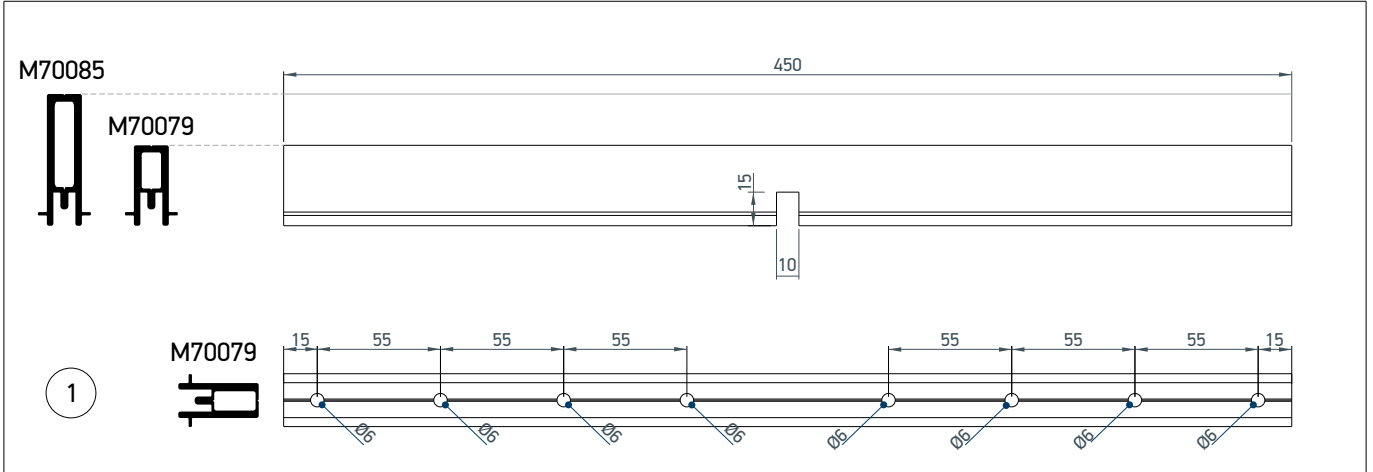


Σύνδεσμος τραβέρσας βαρέου τύπου
Heavy weight-glass transom connector

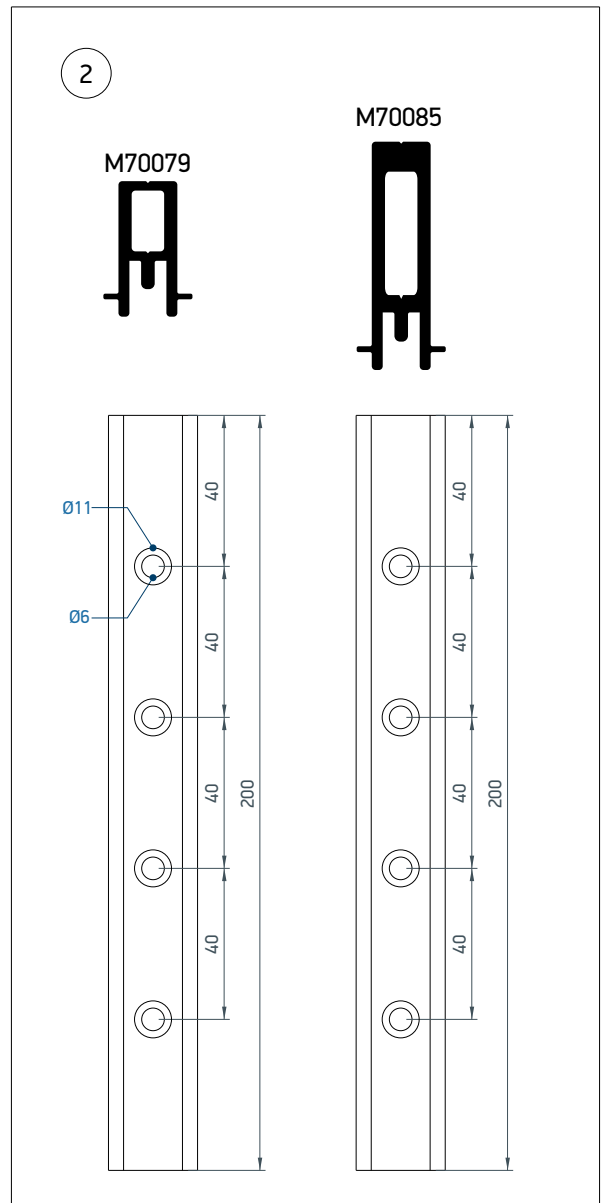
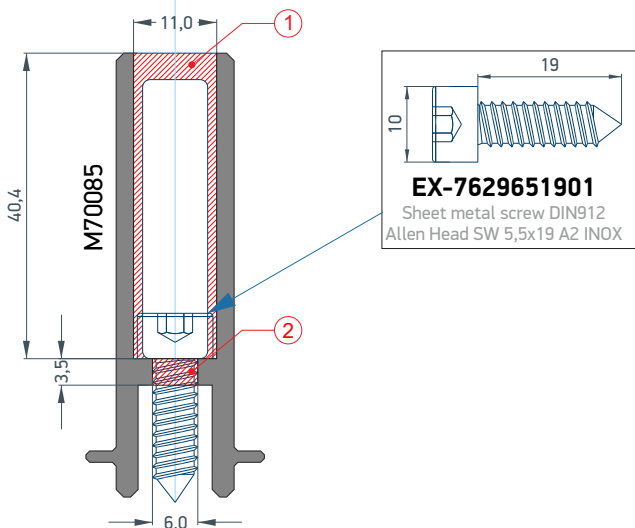


T-CONNECTOR for heavy-weight glass
(max. 400Kg)

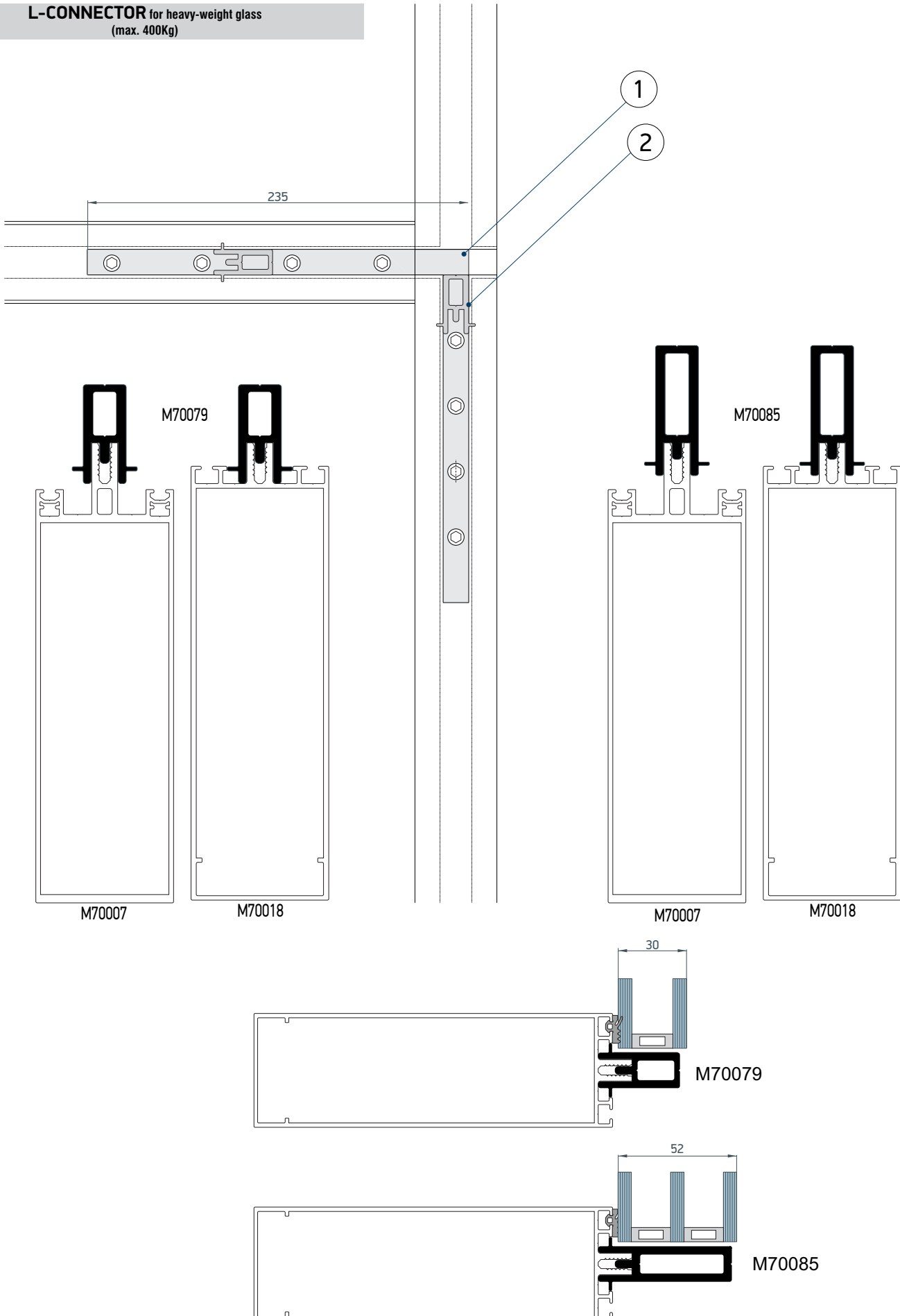




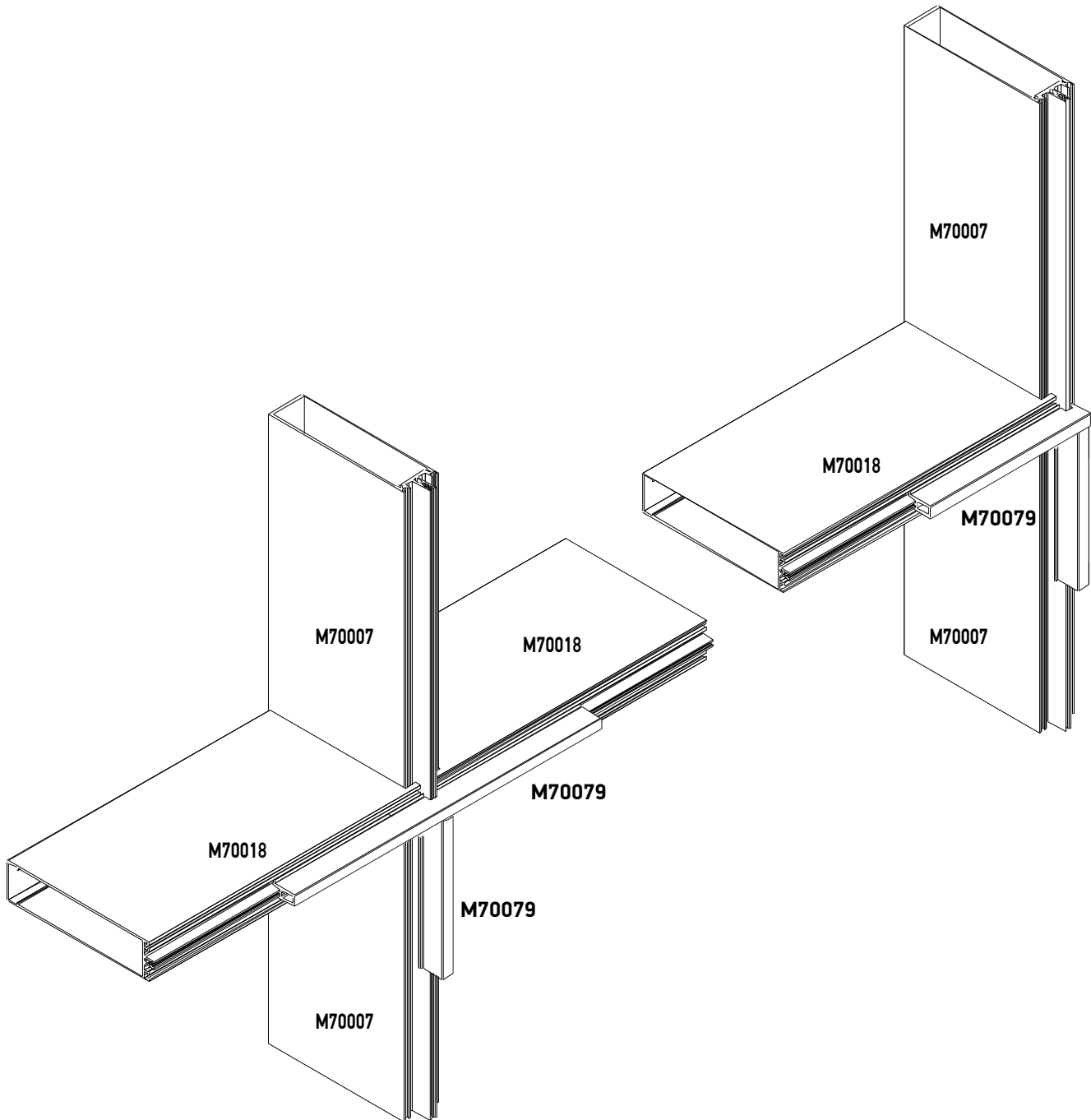
- ① Drill Ø11 for 40,4mm x3
- ② Drill Ø6 for 3,5mm x3



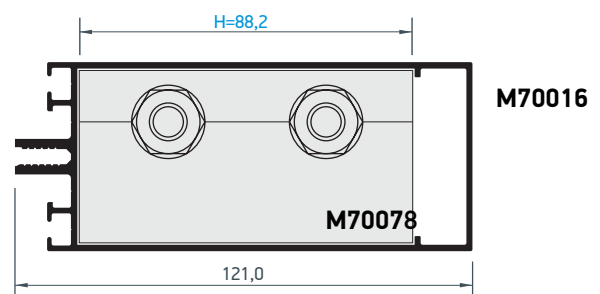
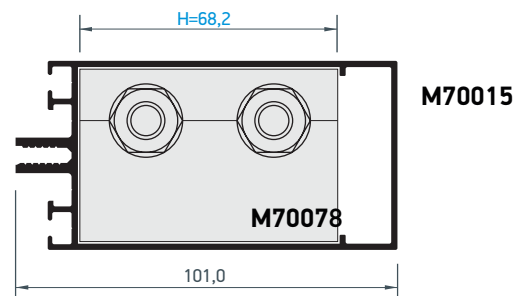
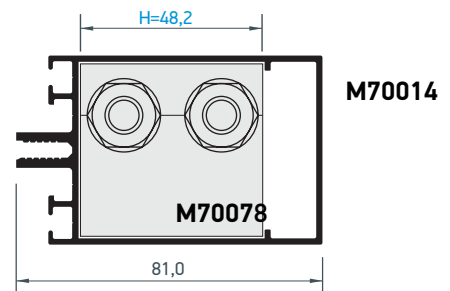
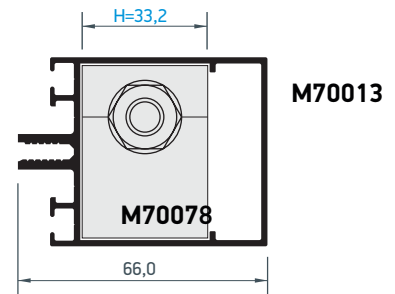
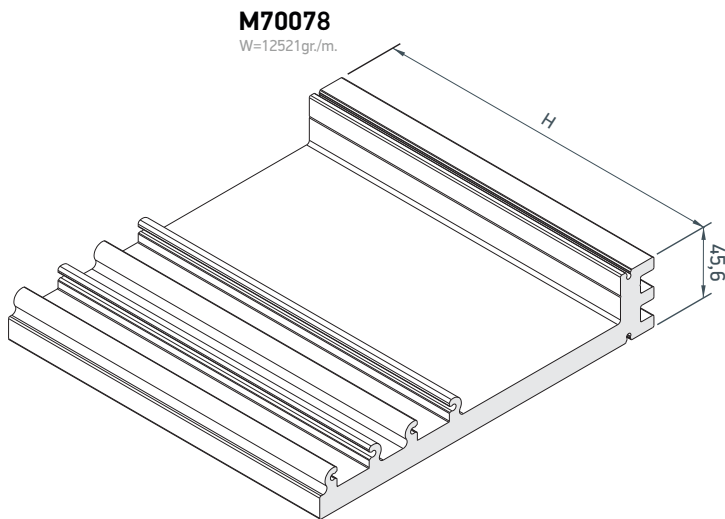
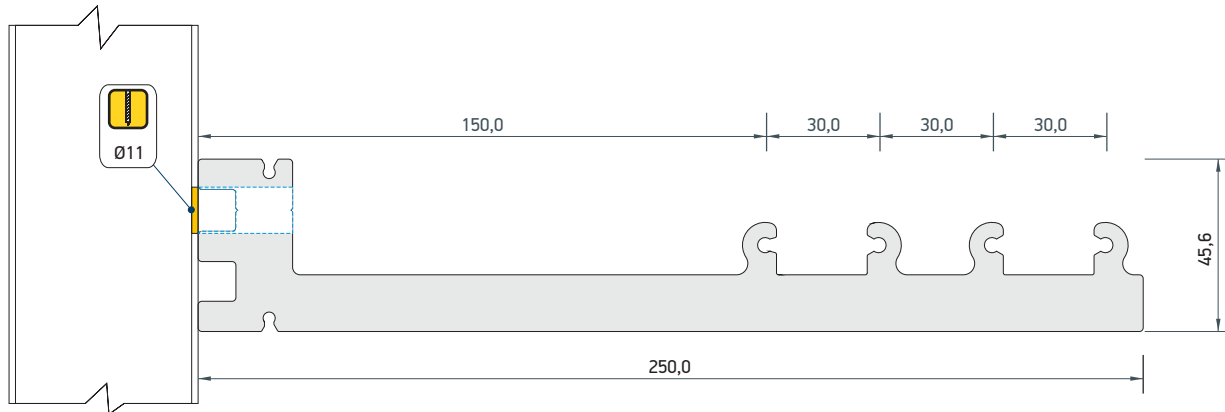
L-CONNECTOR for heavy-weight glass
(max. 400Kg)



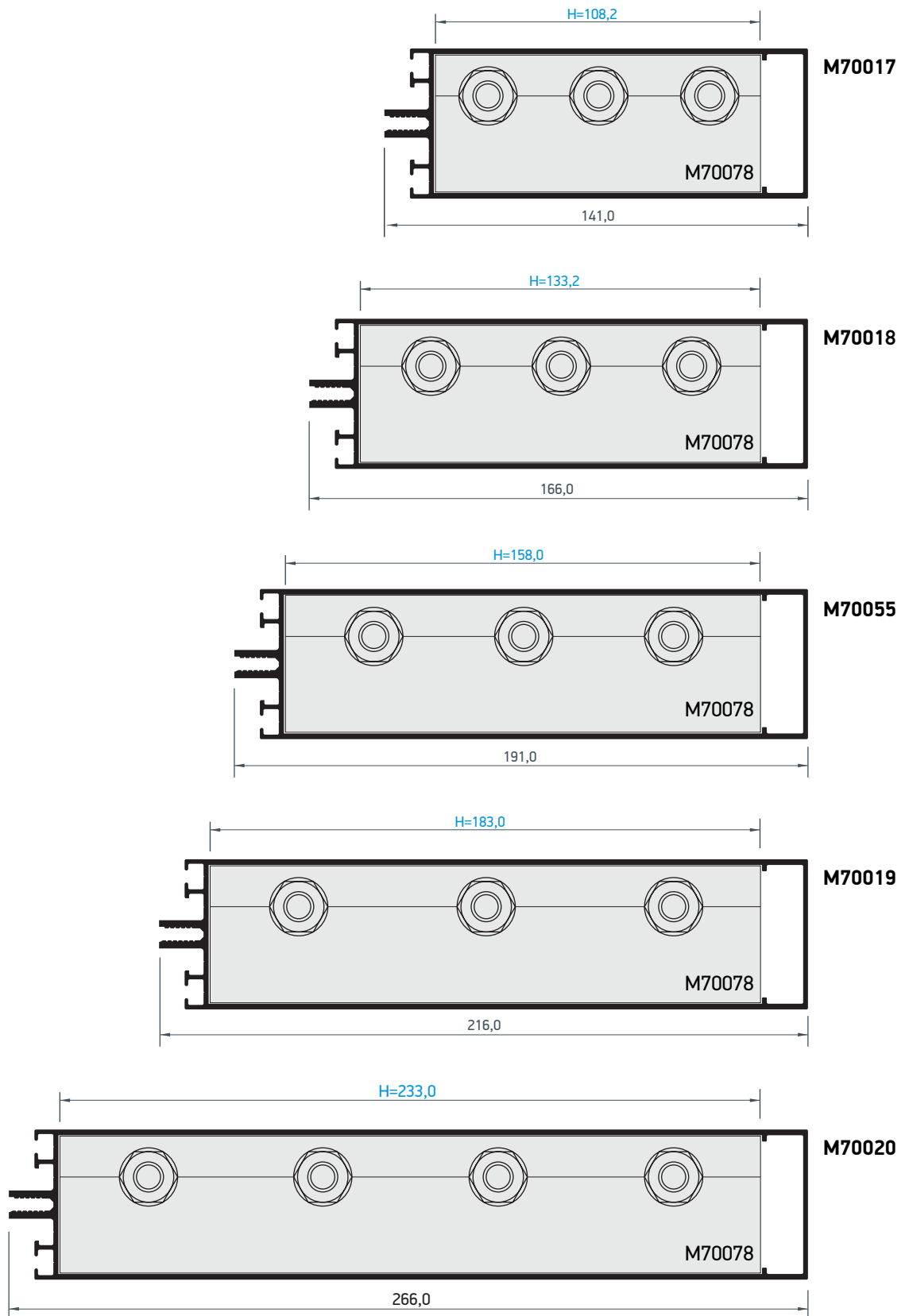
For heavy-weight glass (max. 400Kg)



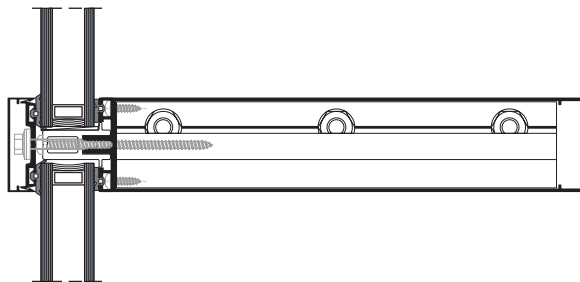
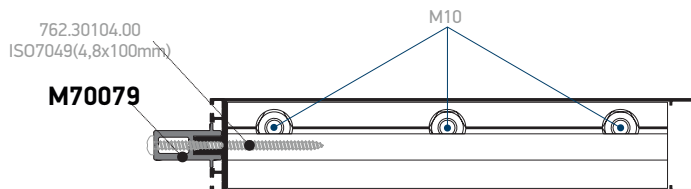
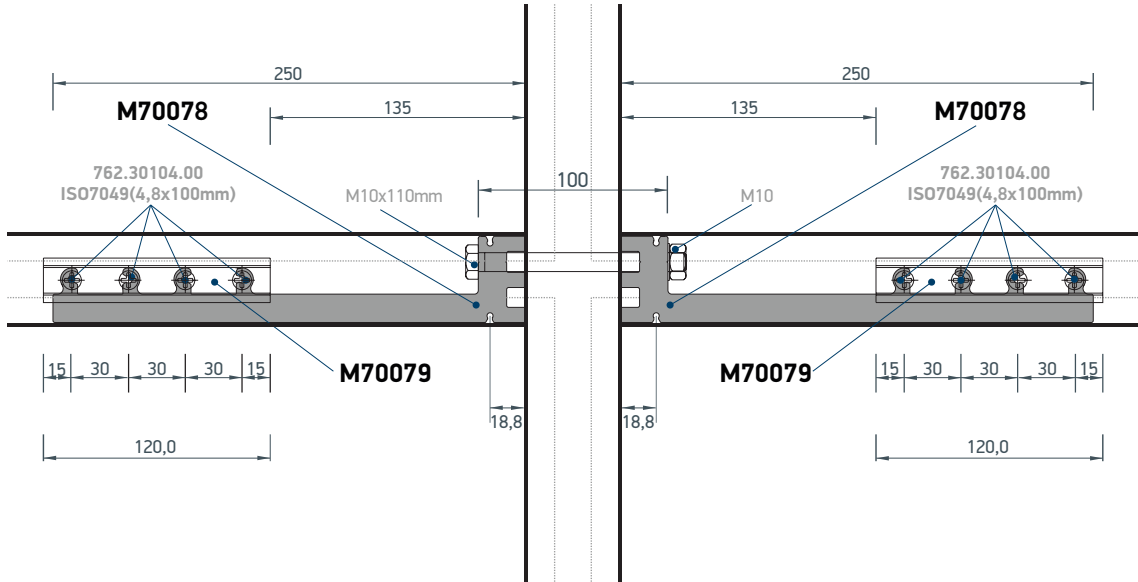
For heavy-weight glass (max. 700Kg)



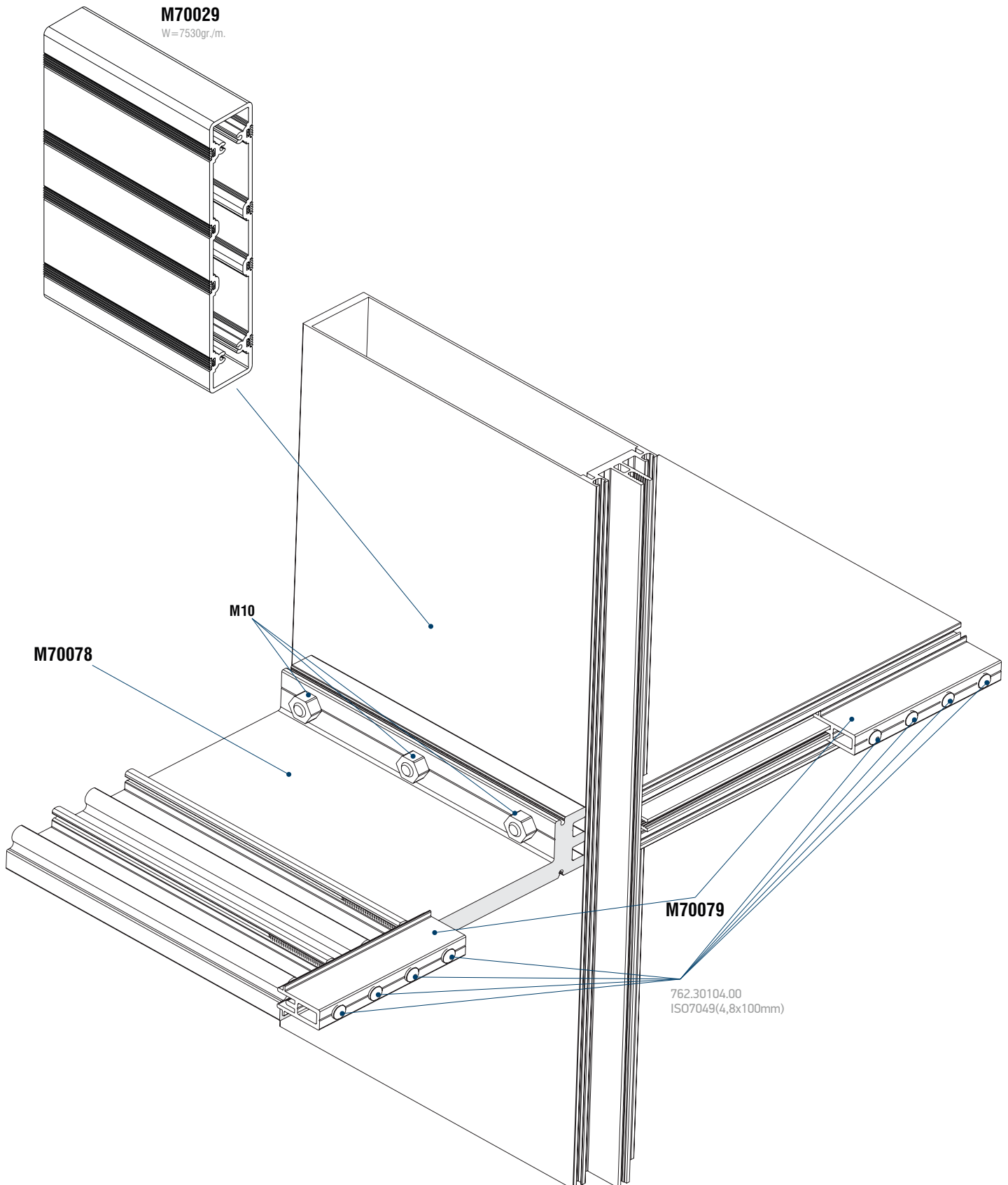
For heavy-weight glass (max. 700Kg)

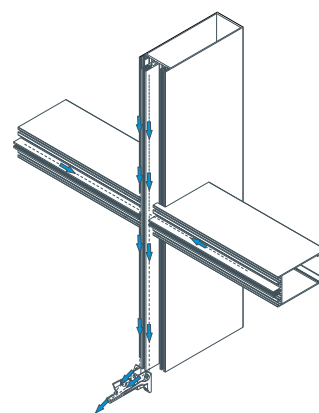


For heavy-weight glass (max. 700Kg)

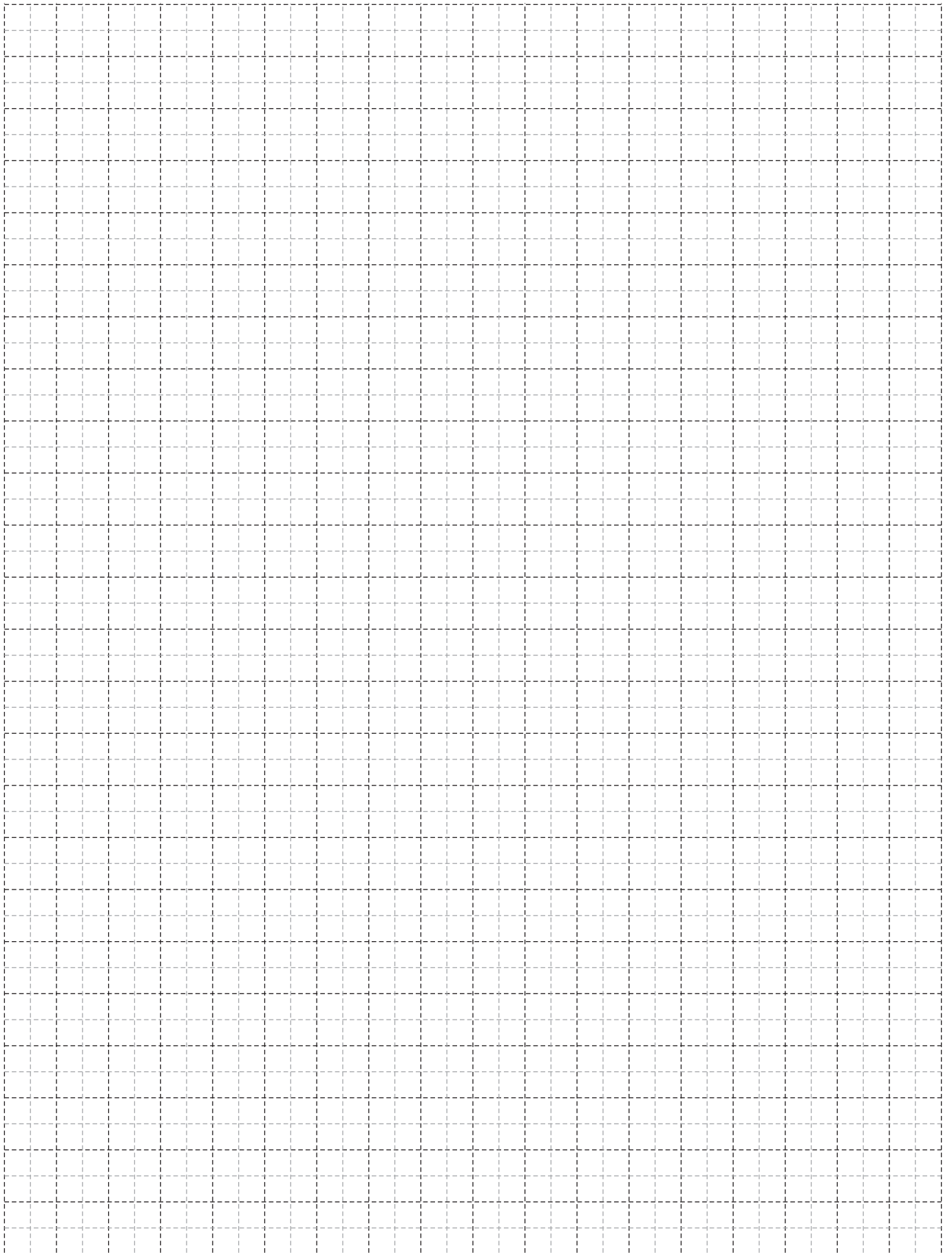


For heavy-weight glass (max. 700Kg)

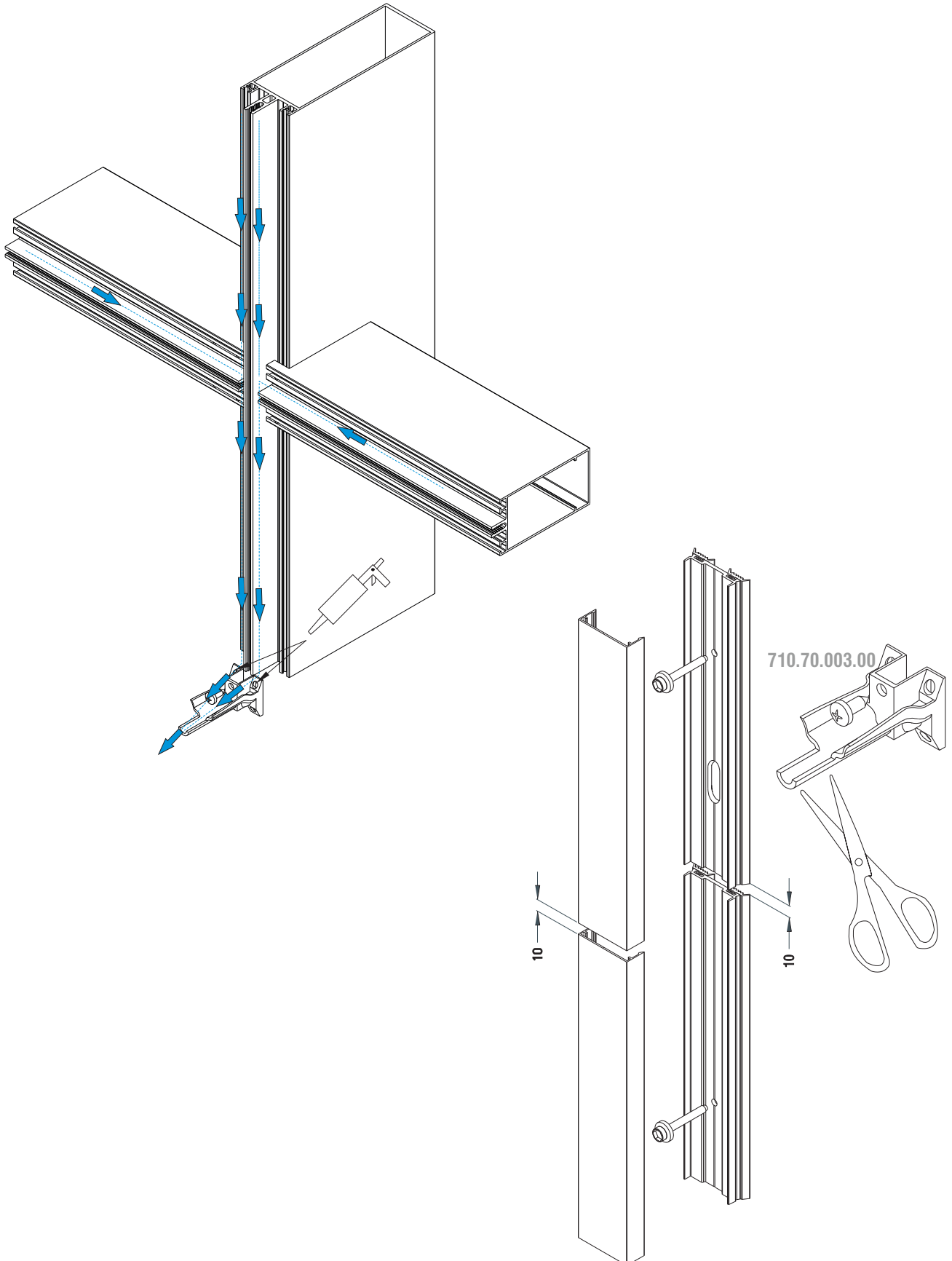


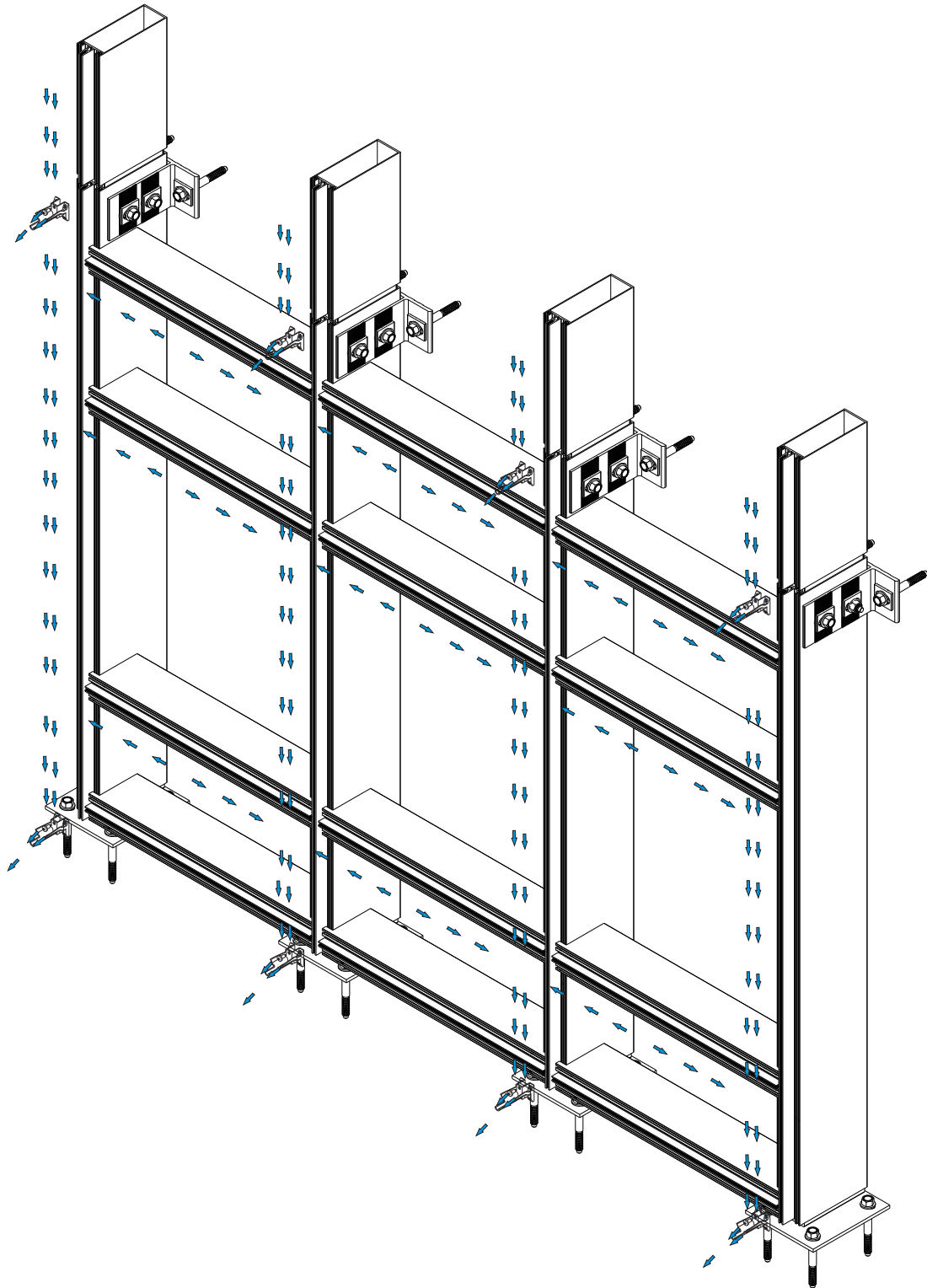


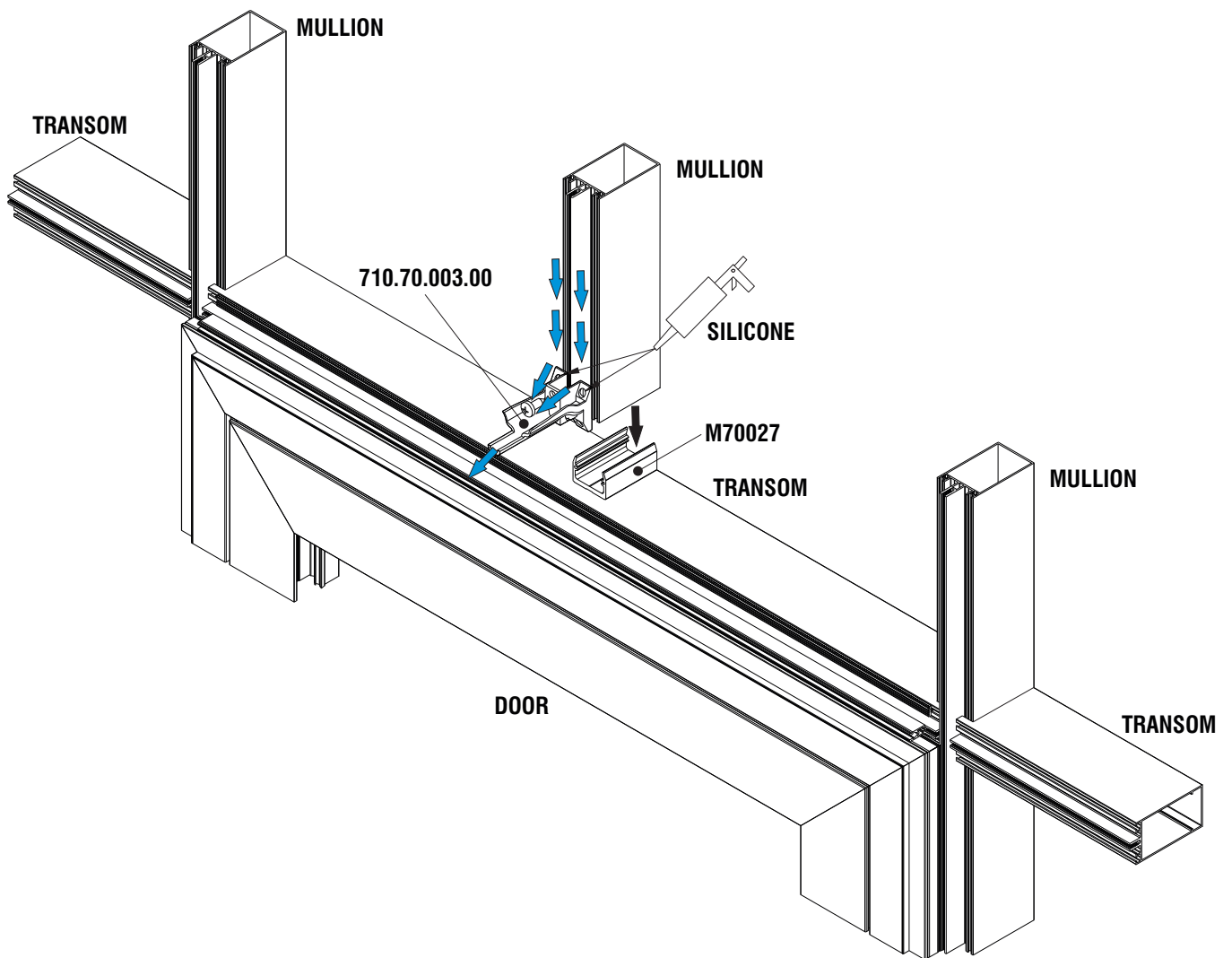
ΠΛΑΝΟ ΑΠΟΡΡΟΩΝ
DRAINAGE PLAN

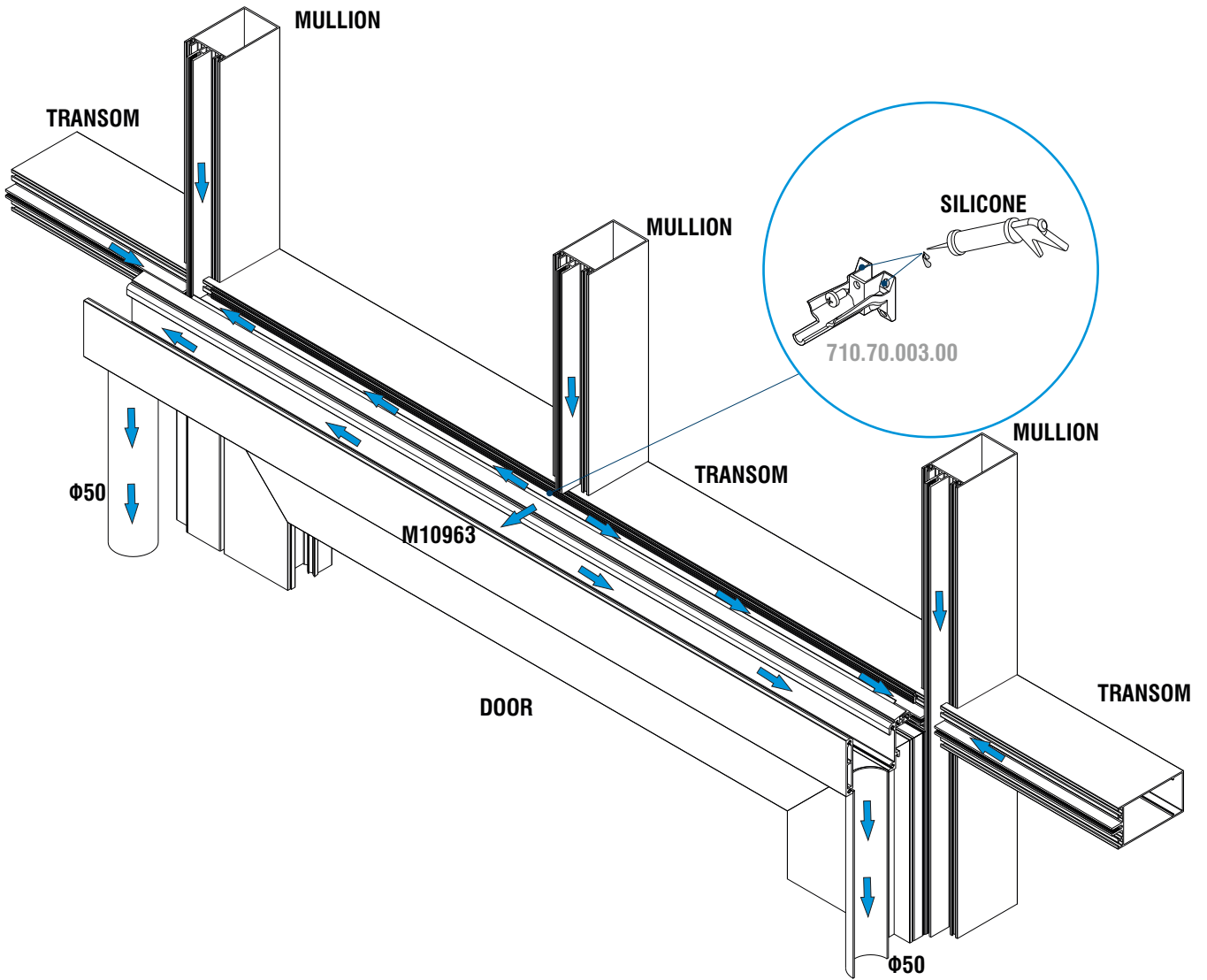


WATER EVACUATION

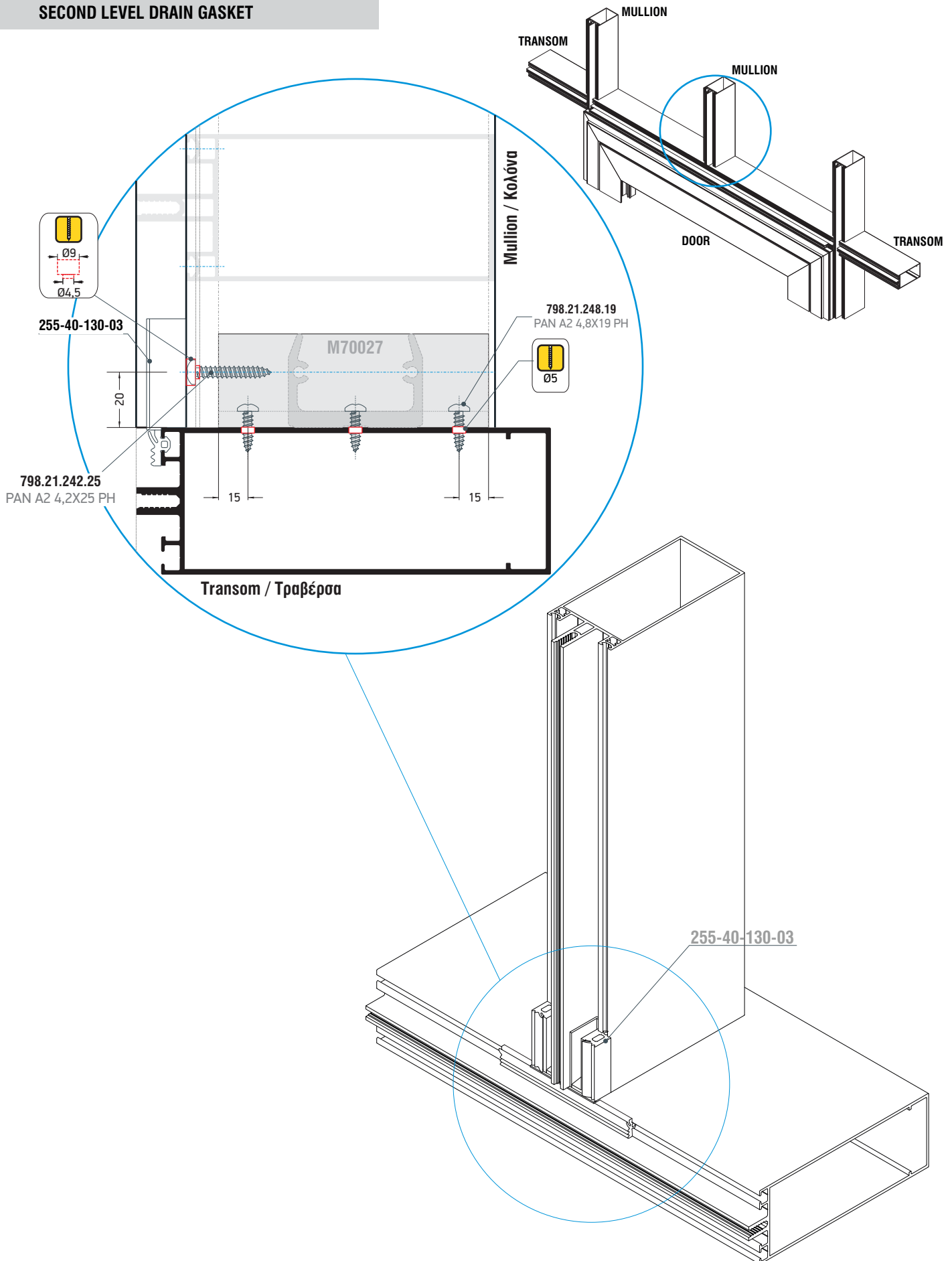


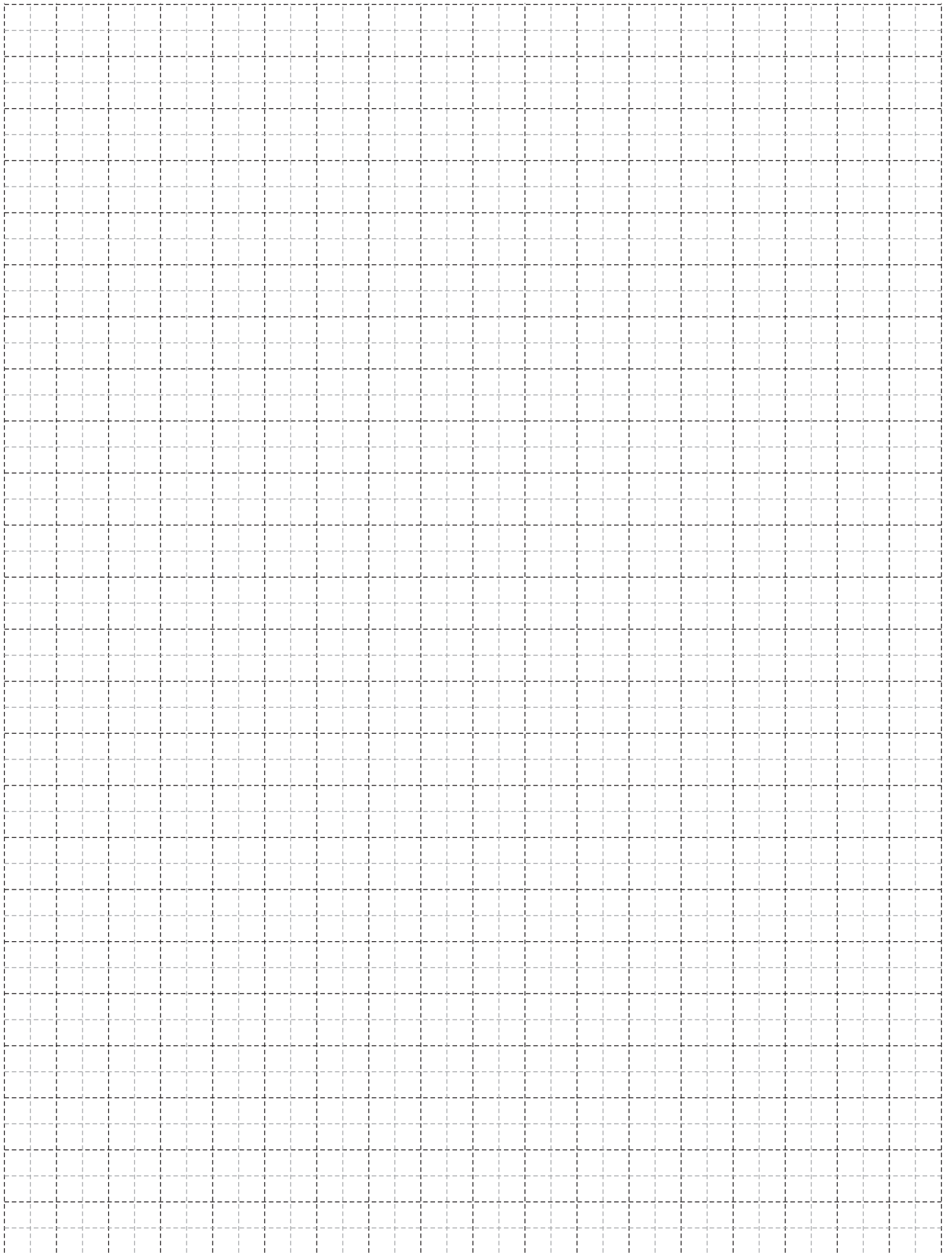


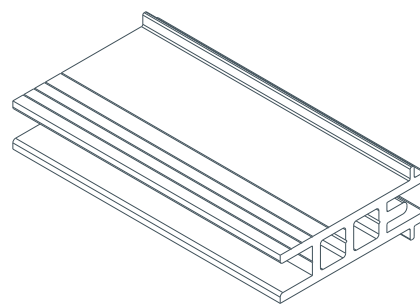




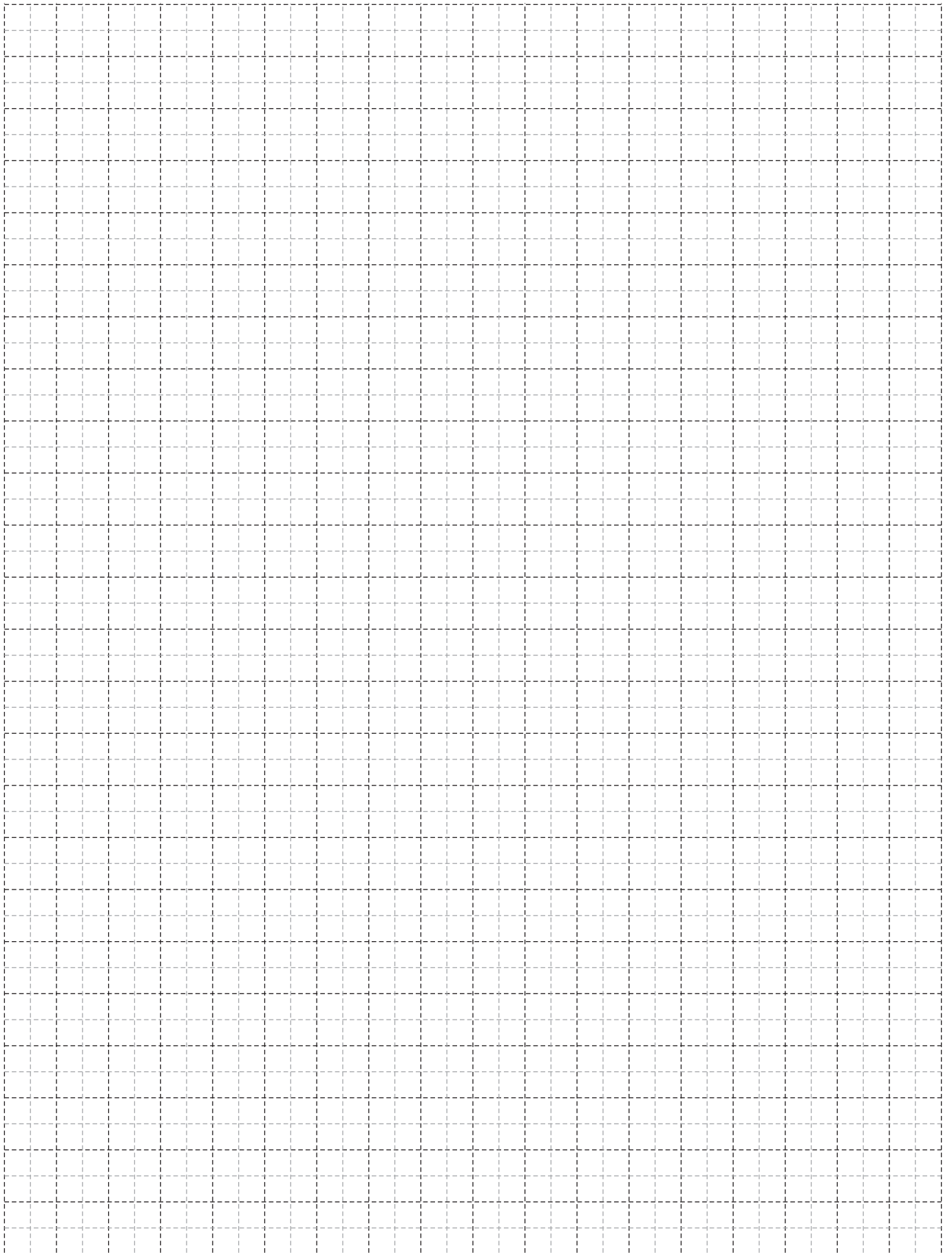
SECOND LEVEL DRAIN GASKET





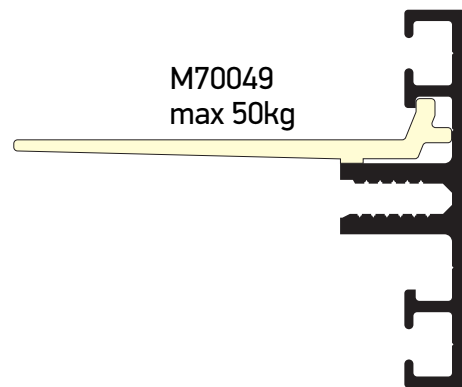
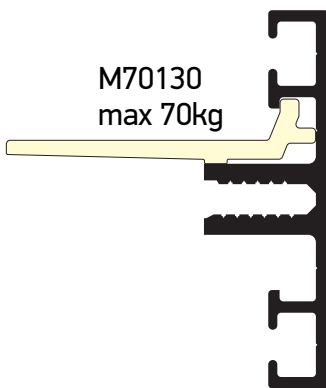
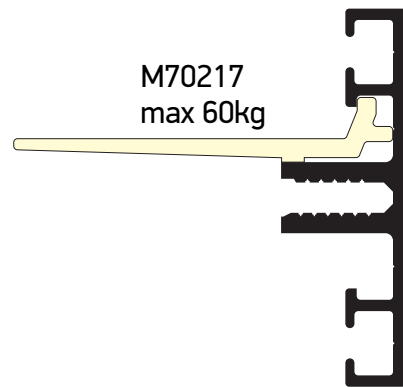
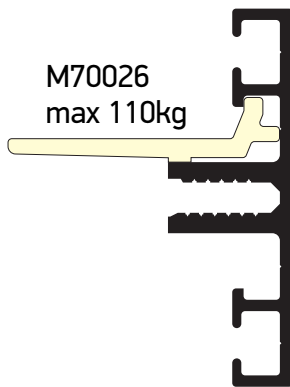
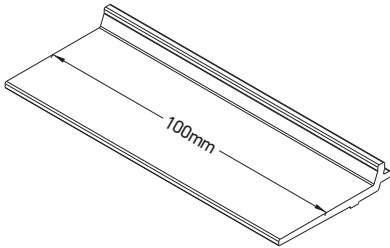


Γέφυρες τακαρίσματος
Glazing bridges

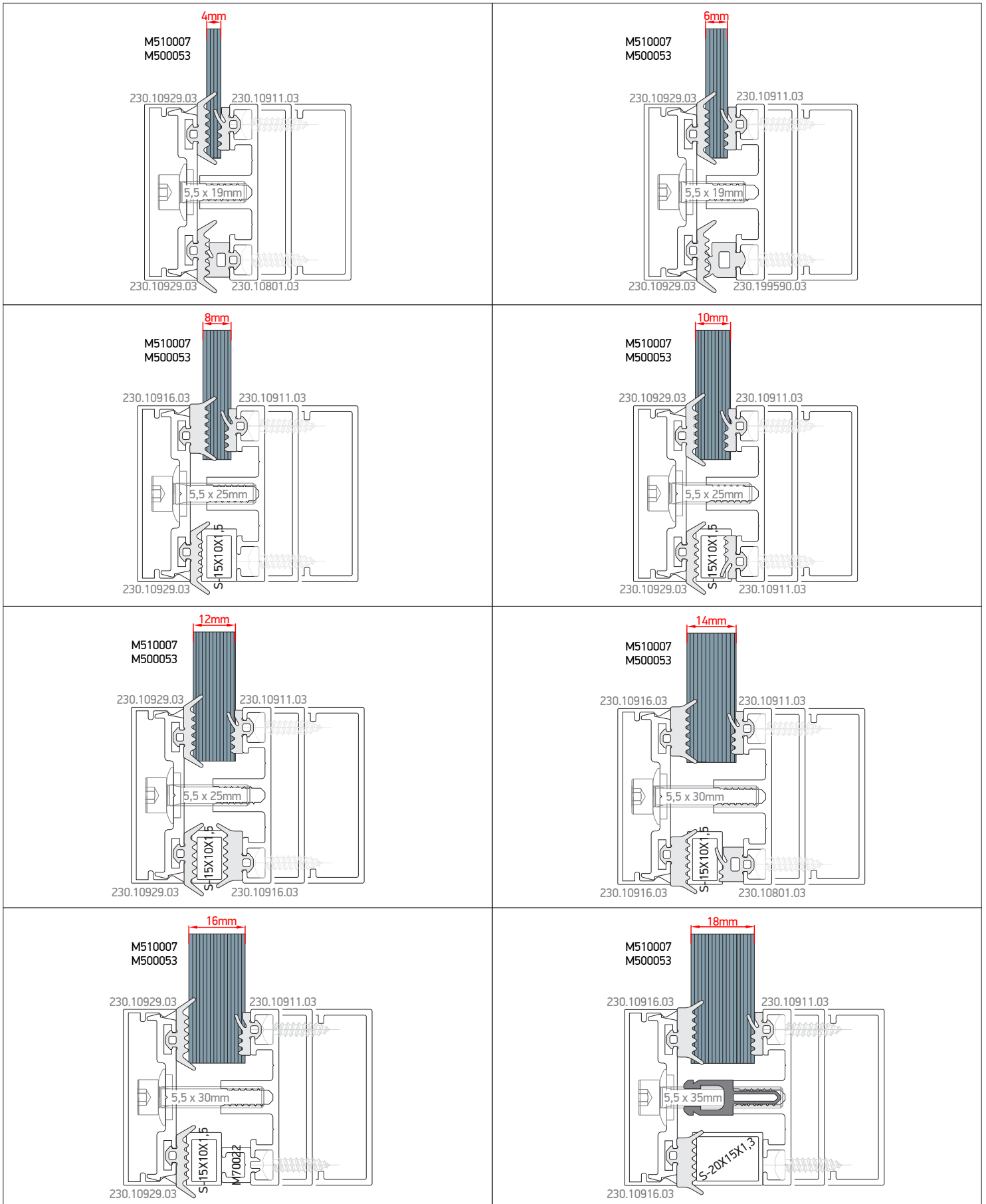


- Max 4 pieces per glass (2 on the left / 2 on the right)
- Above 200kg glass, only Heavy Duty

Standard



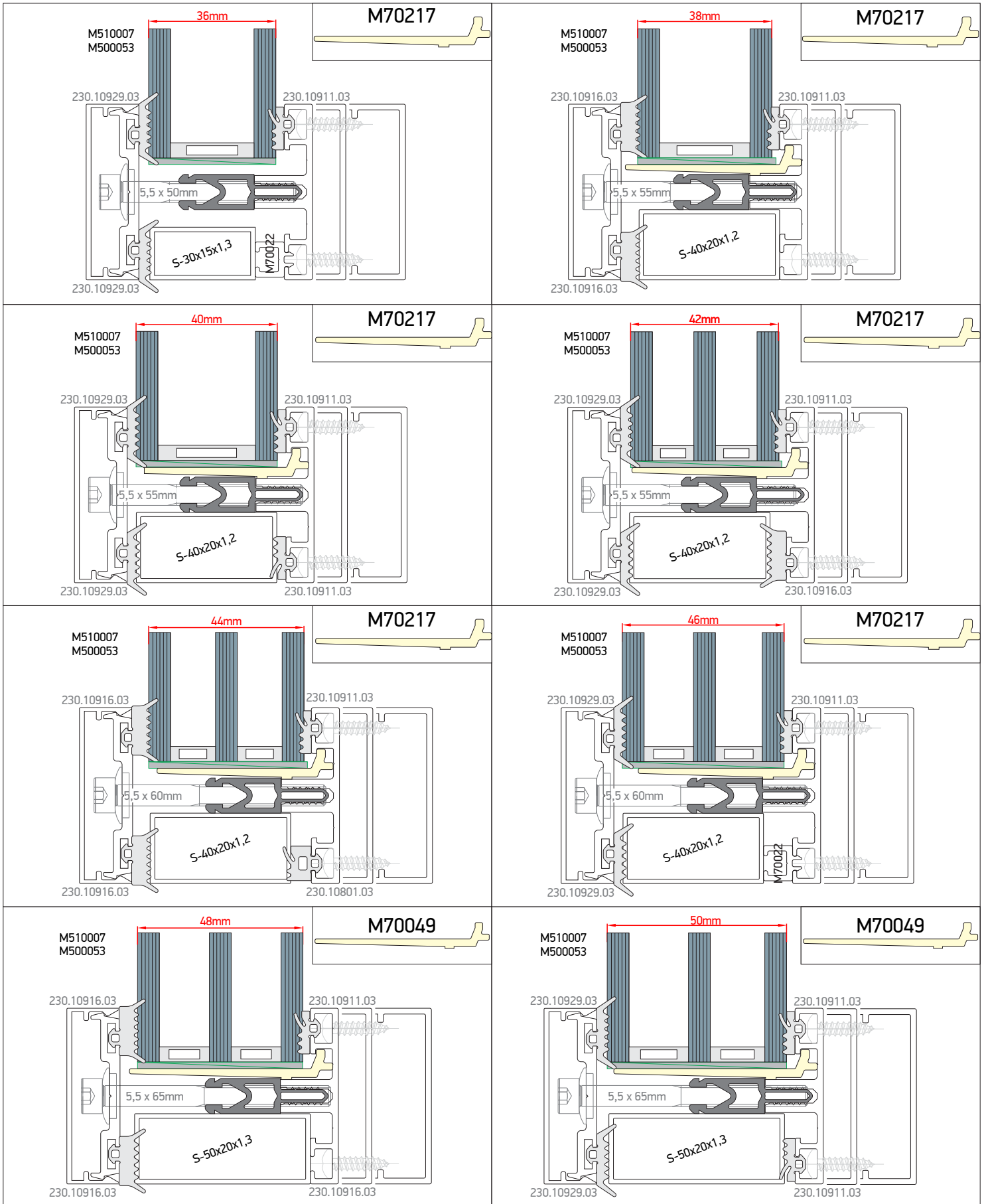
Normal Glazing



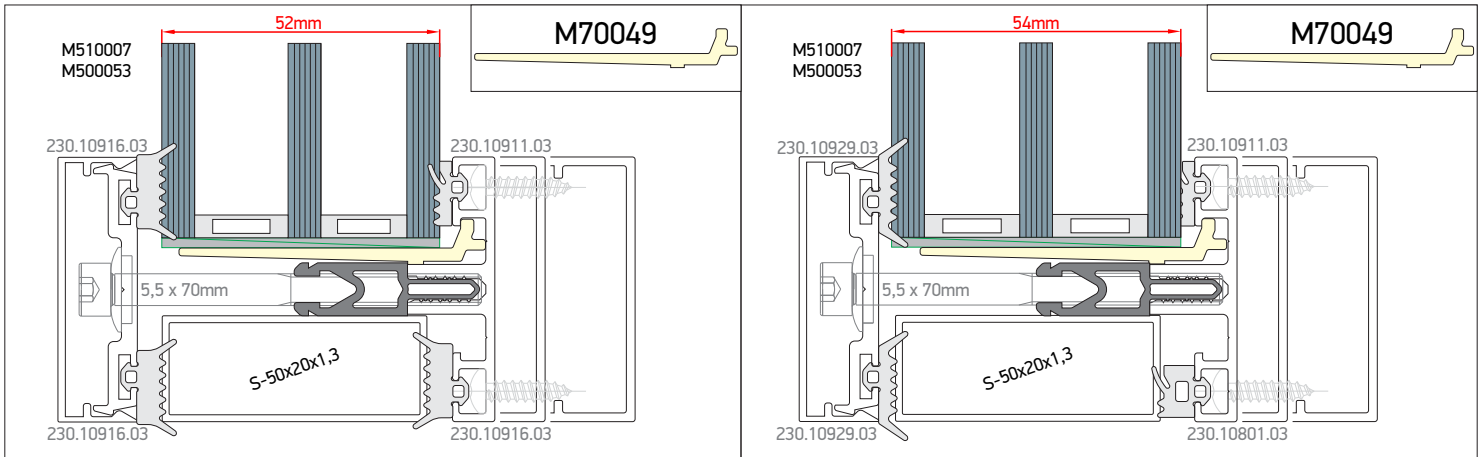
Normal Glazing



Normal Glazing

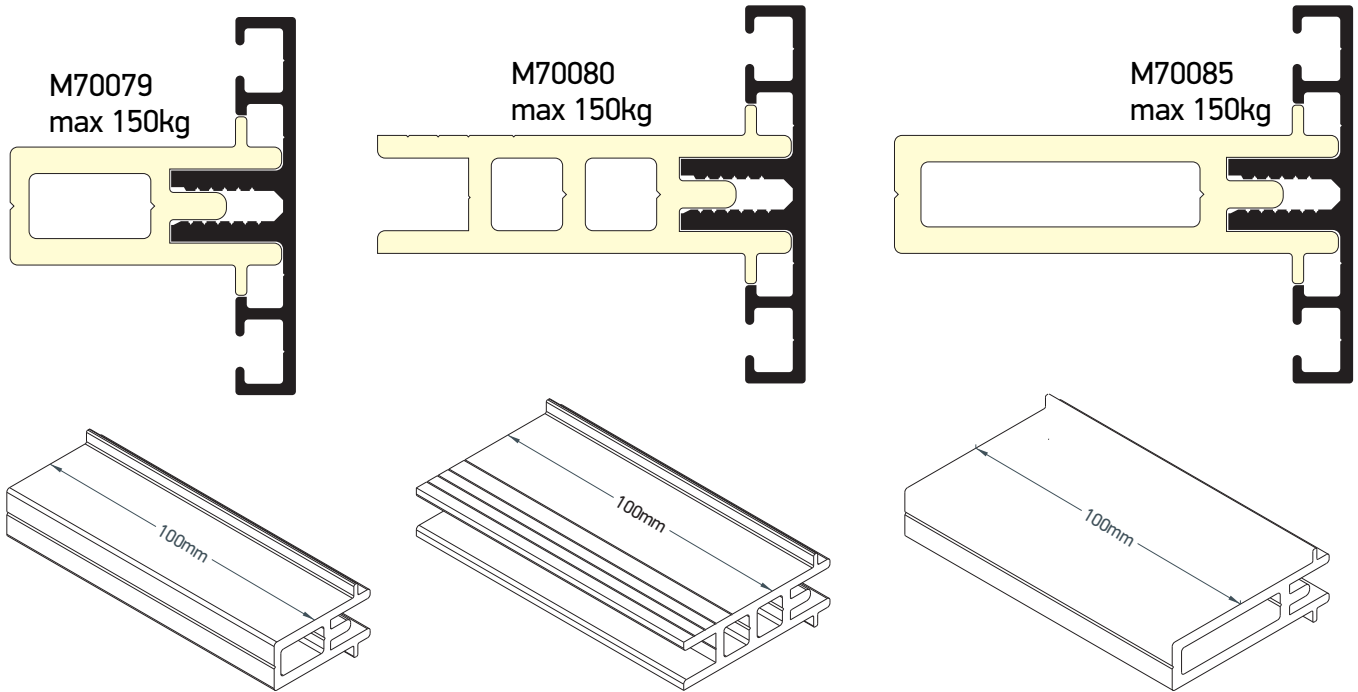


Normal Glazing

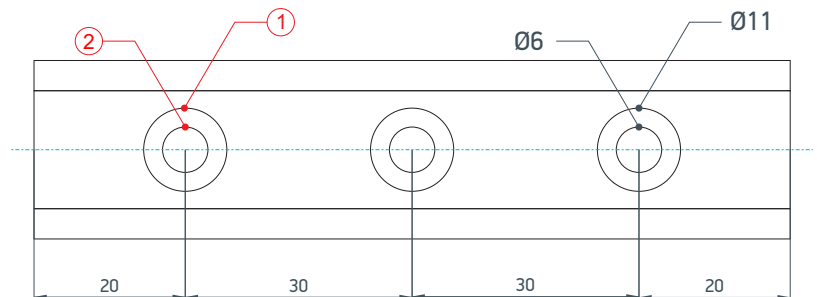
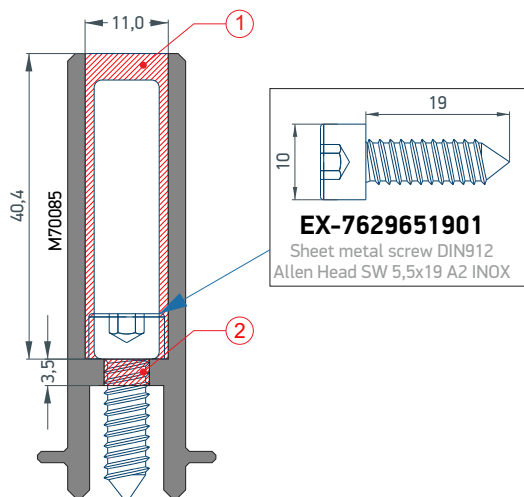


- Max 4 pieces per glass (2 on the left / 2 on the right)
- Above 200kg glass, only Heavy Duty

Heavy Duty



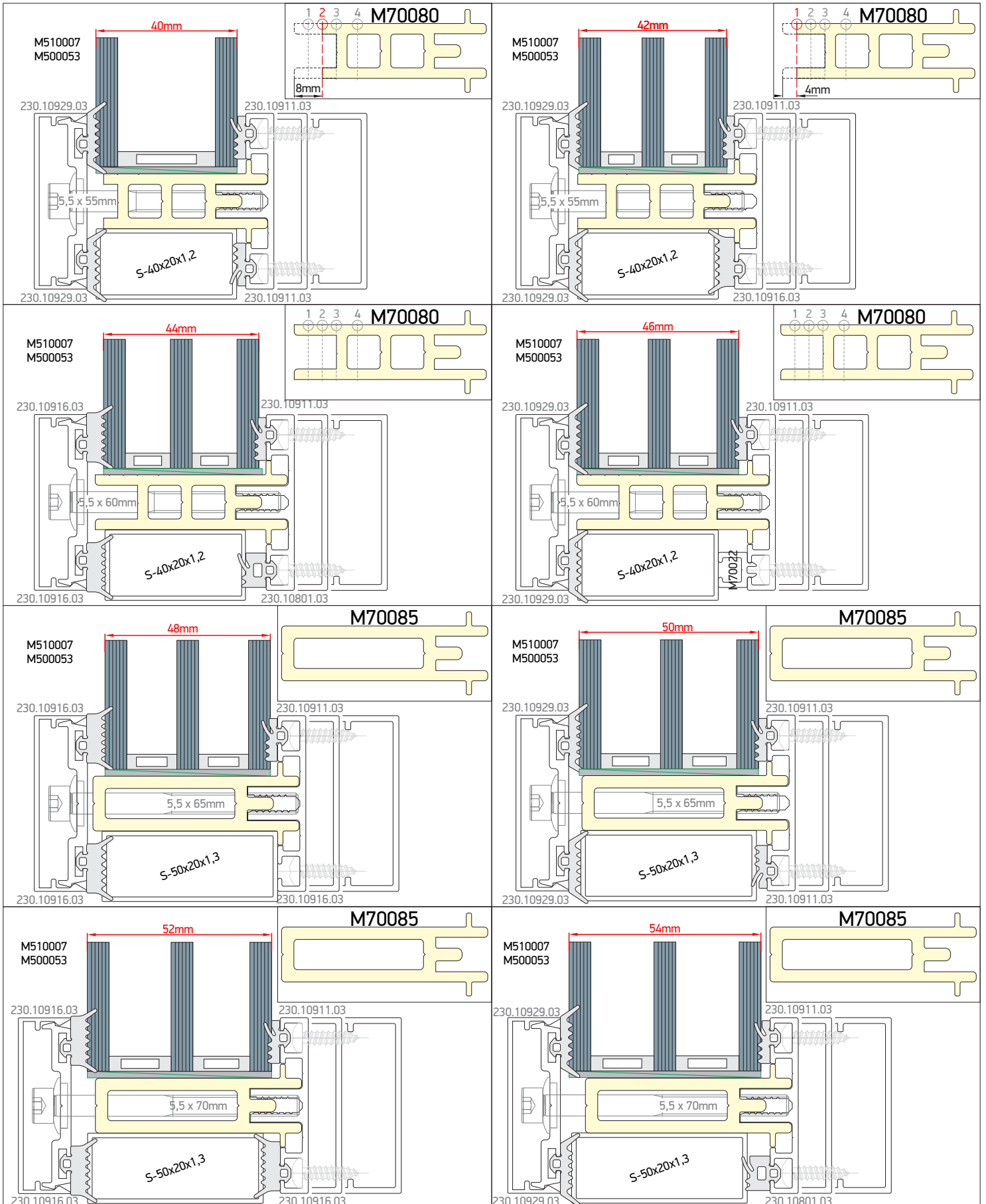
- ① Drill $\varnothing 11$ for 40,4mm x3
- ② Drill $\varnothing 6$ for 3,5mm x3



Heavy duty Glazing

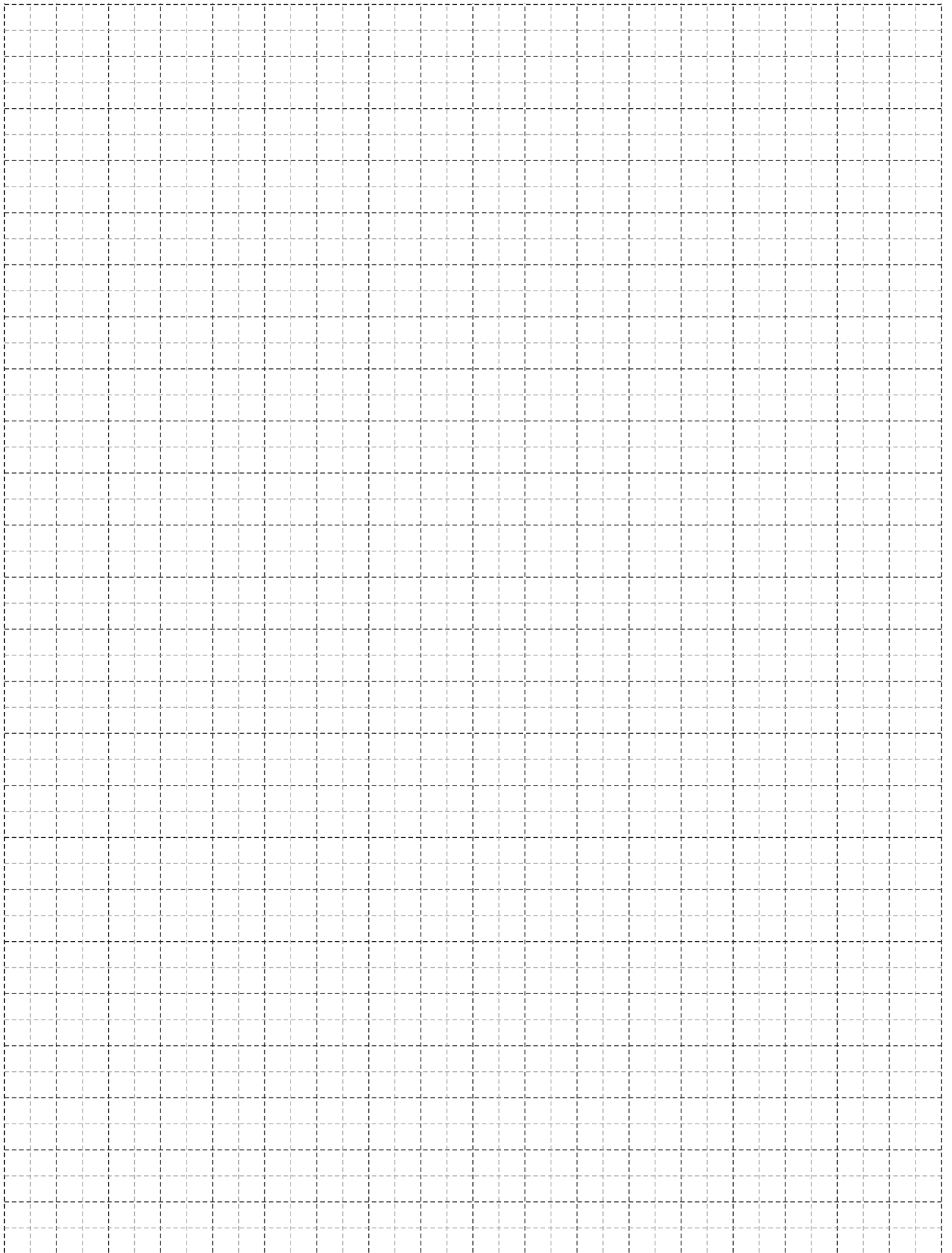


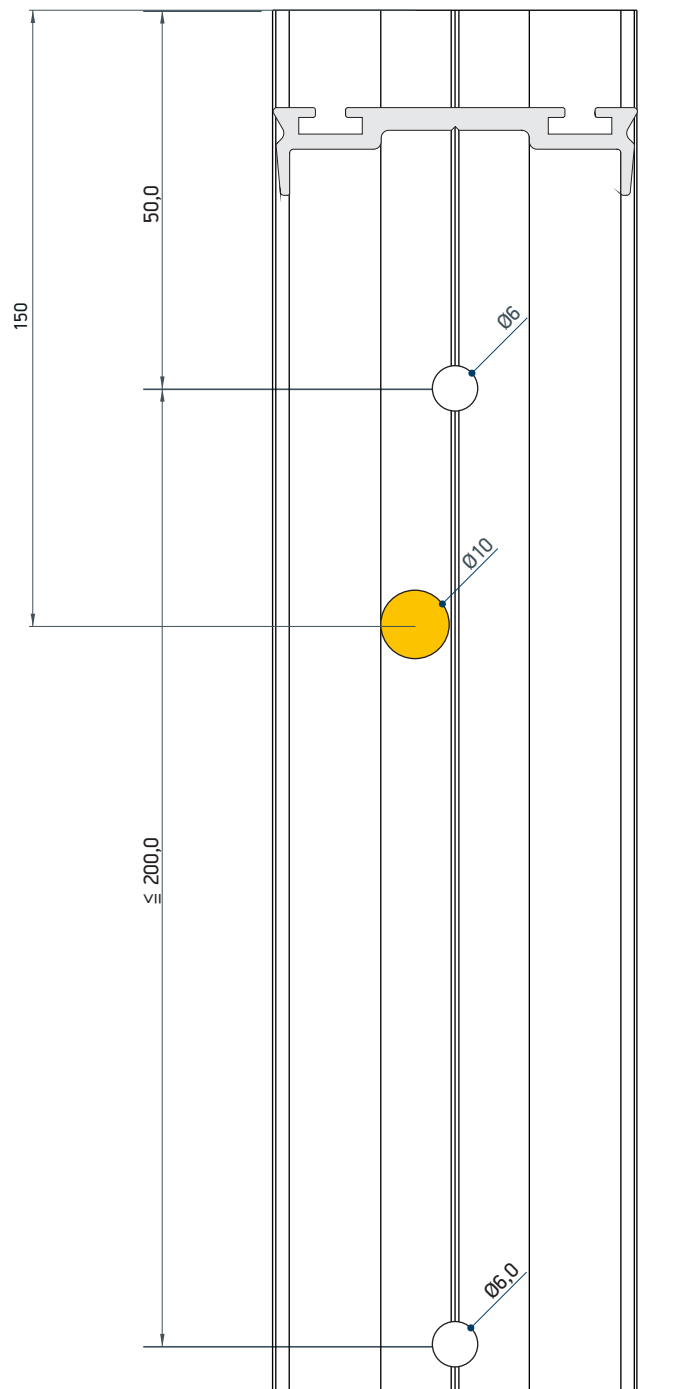
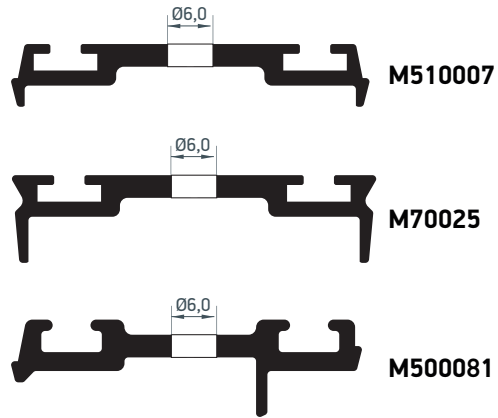
Heavy duty Glazing



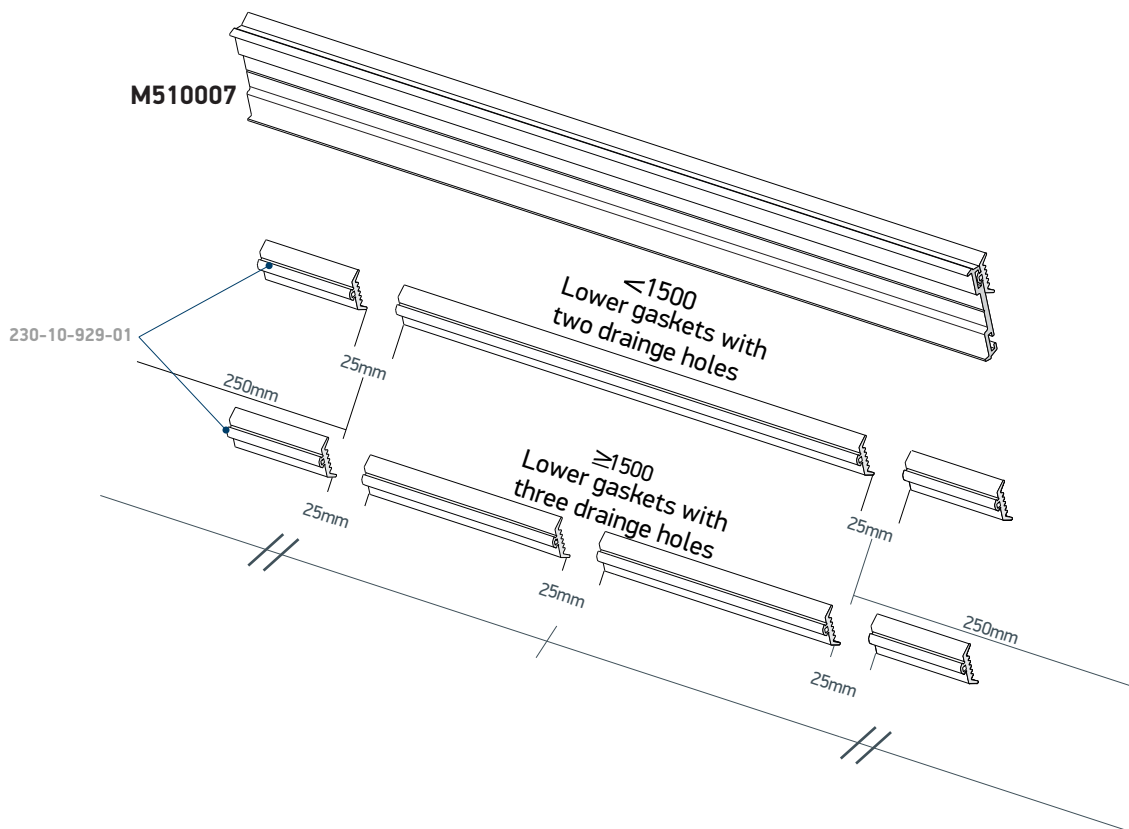
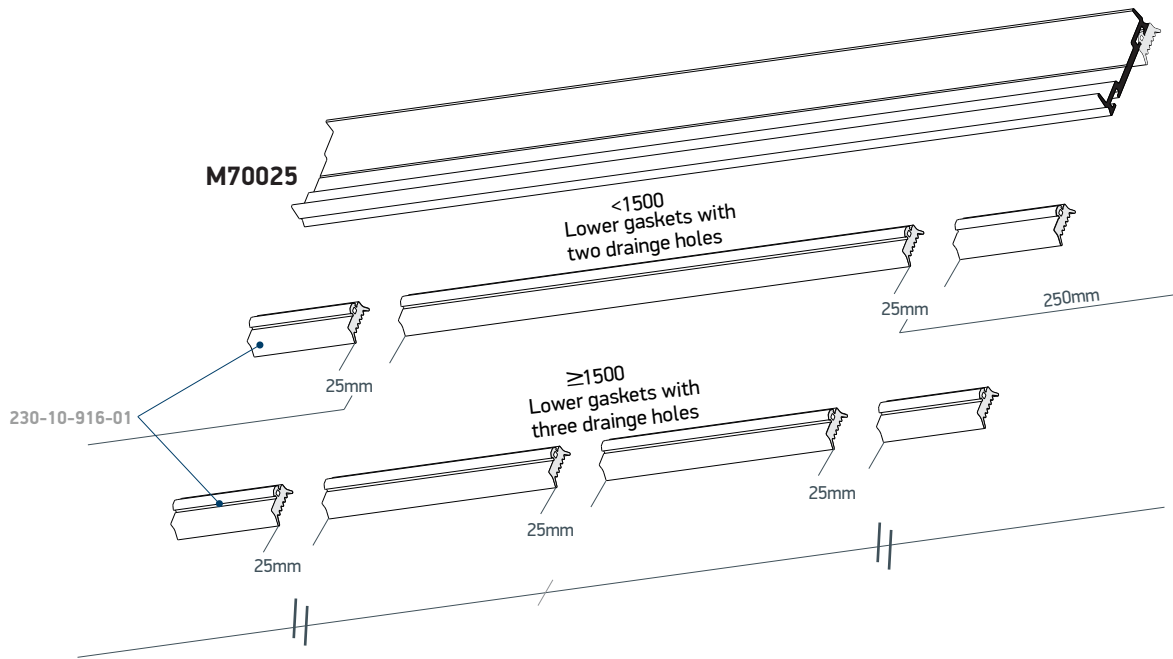


STANDARD



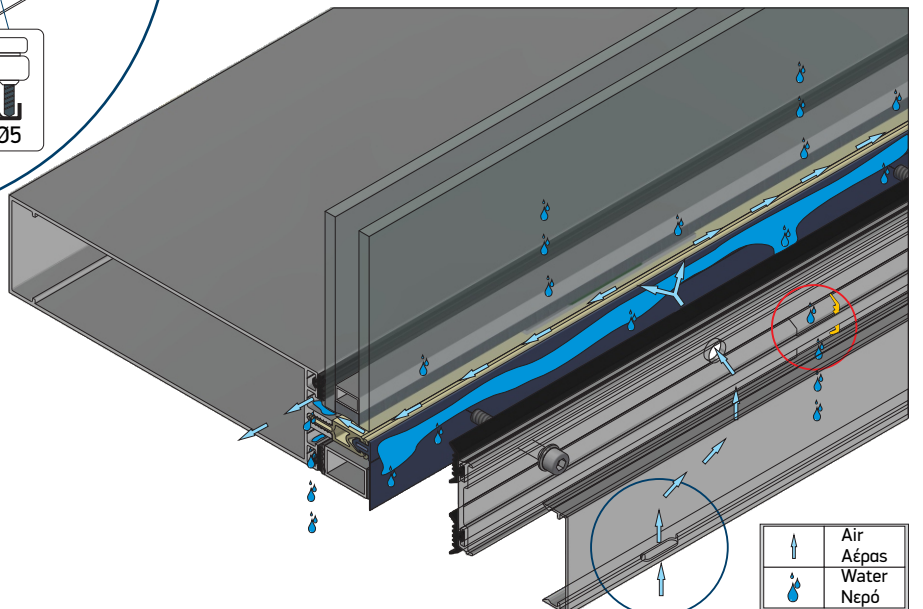
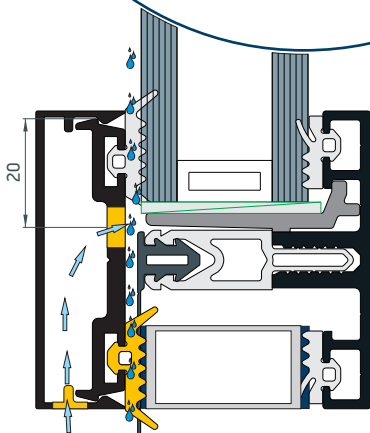
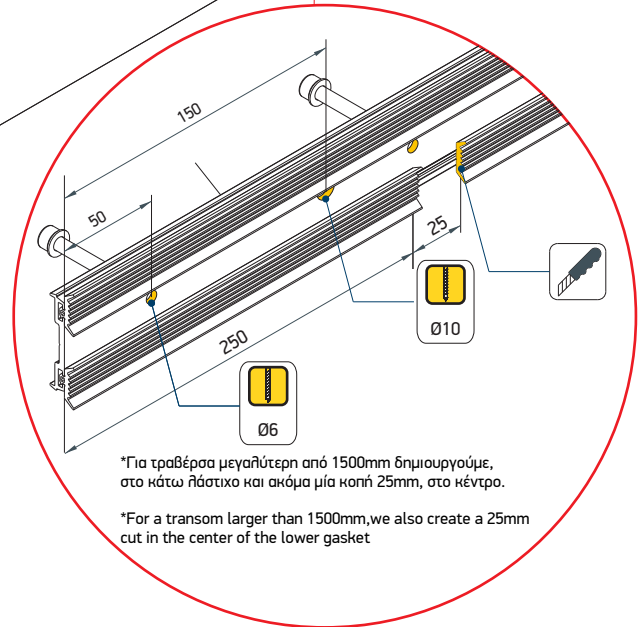
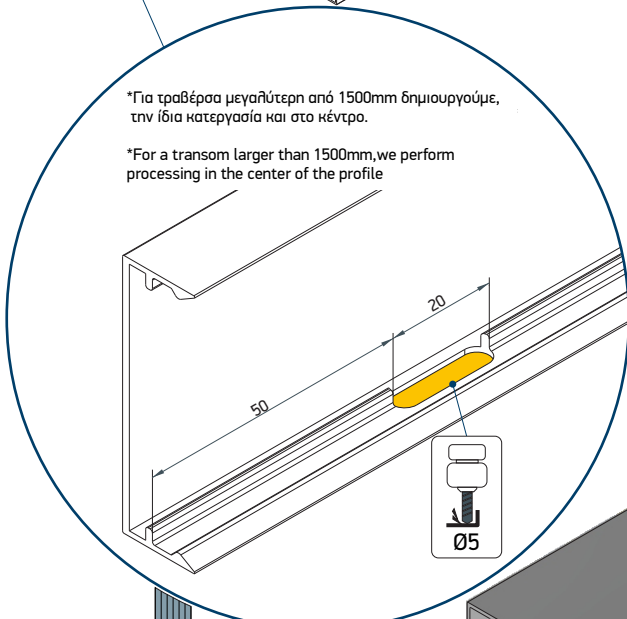
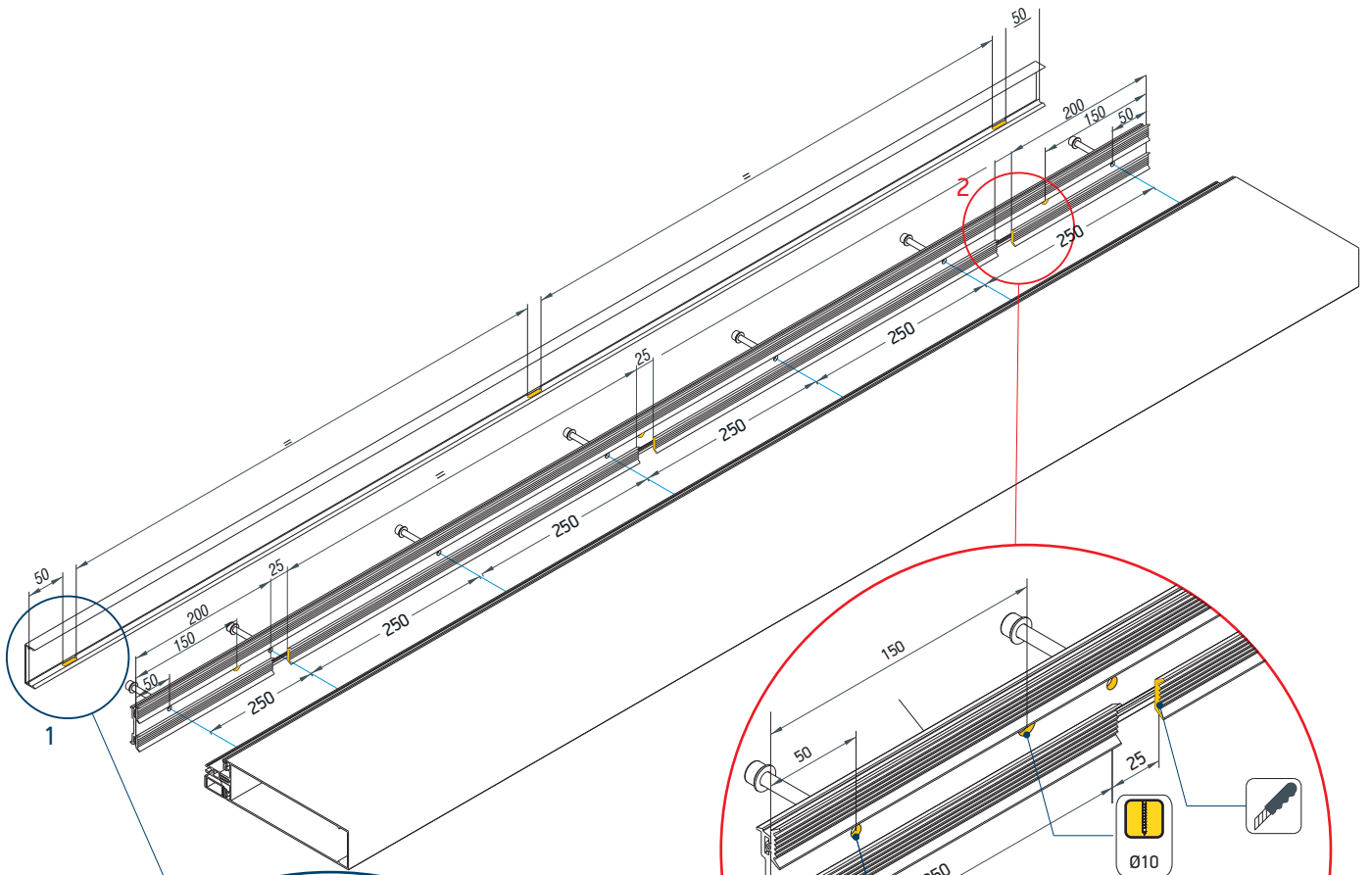


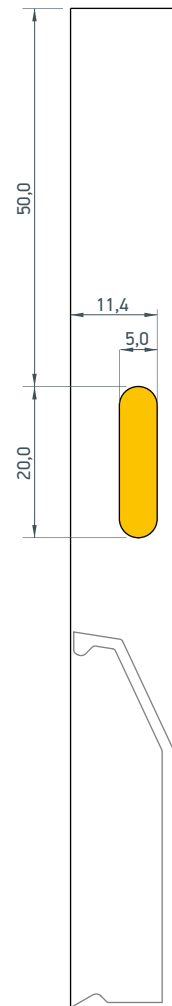
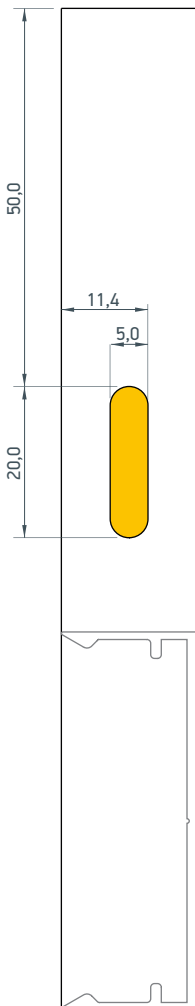
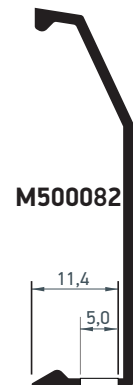
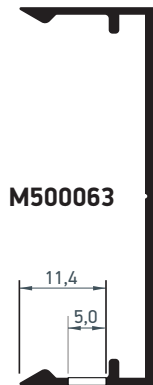
M7 pressure equalization

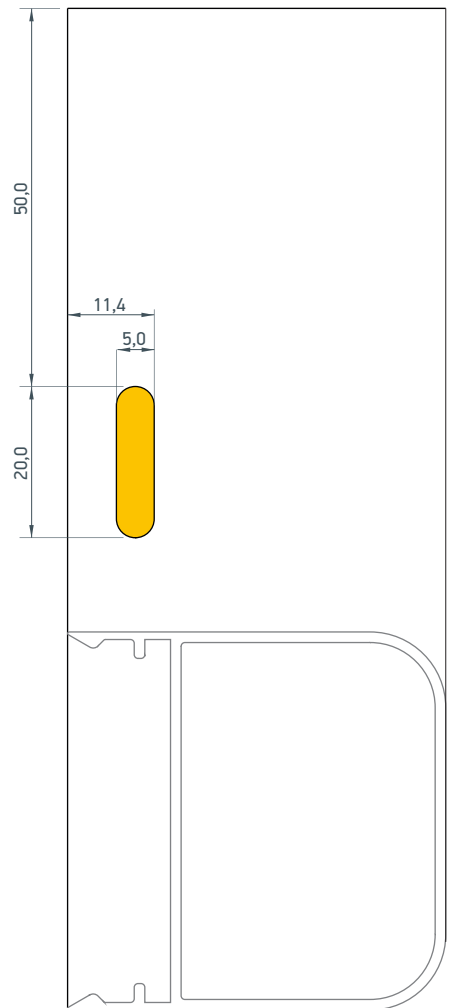
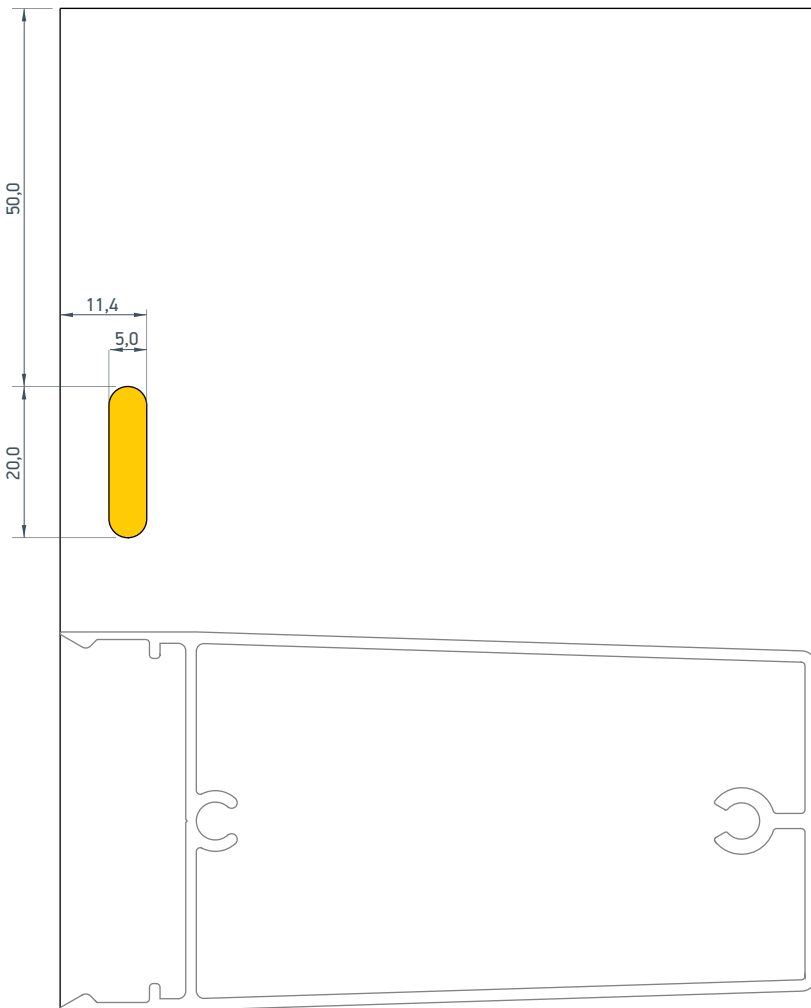
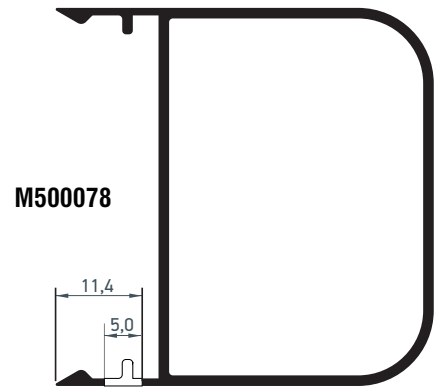
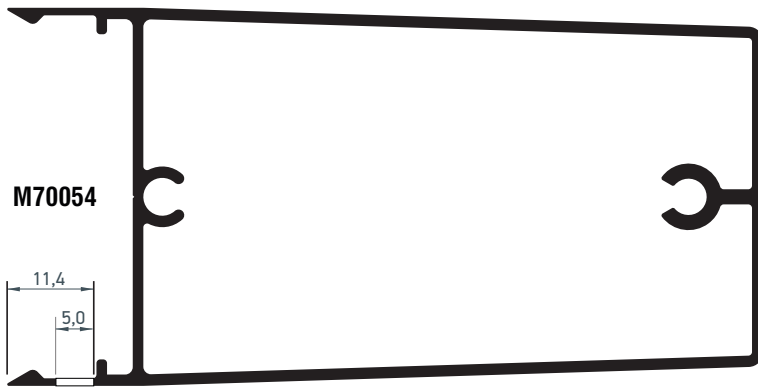
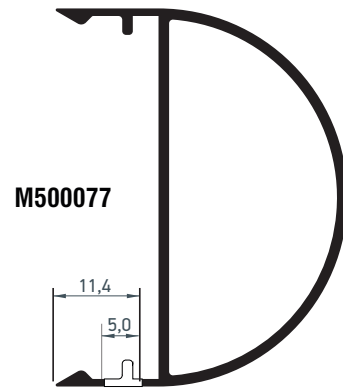
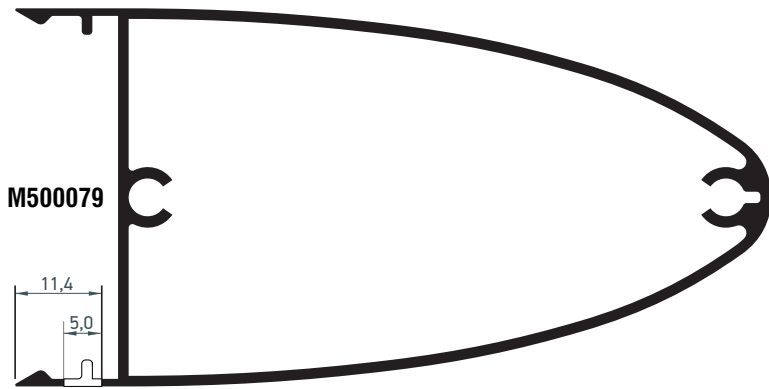


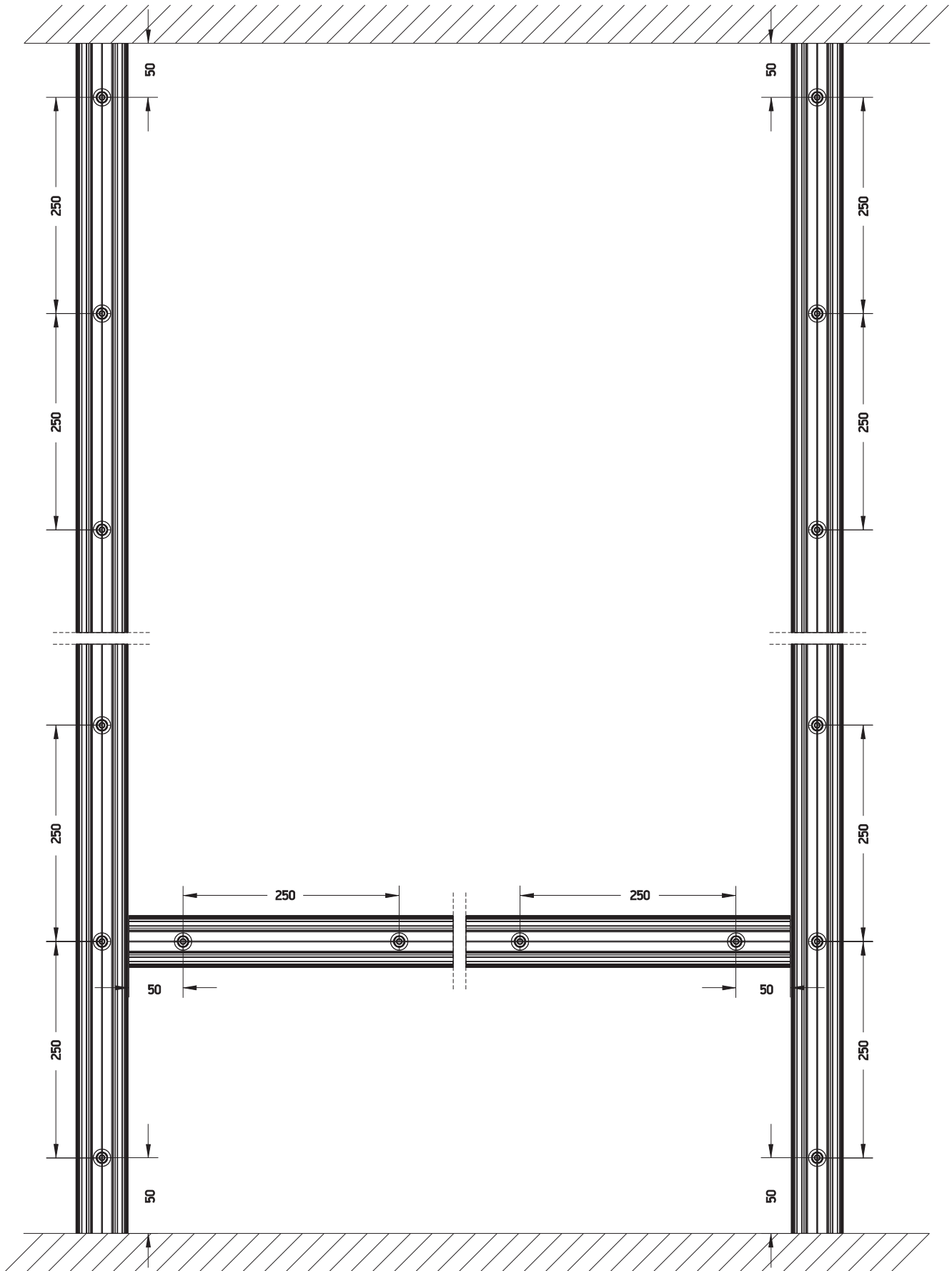
Note:

When the transom length is less than 1500mm the lower basket must be trimmed in two places, and if the transom length is equal to or greater than 1500mm the lower basket must be trimmed in three places. The upper gasket remains continuous. The pressure plate gasket may be separated into two separate gasket before installation. See milling and manufacturing section for further details.







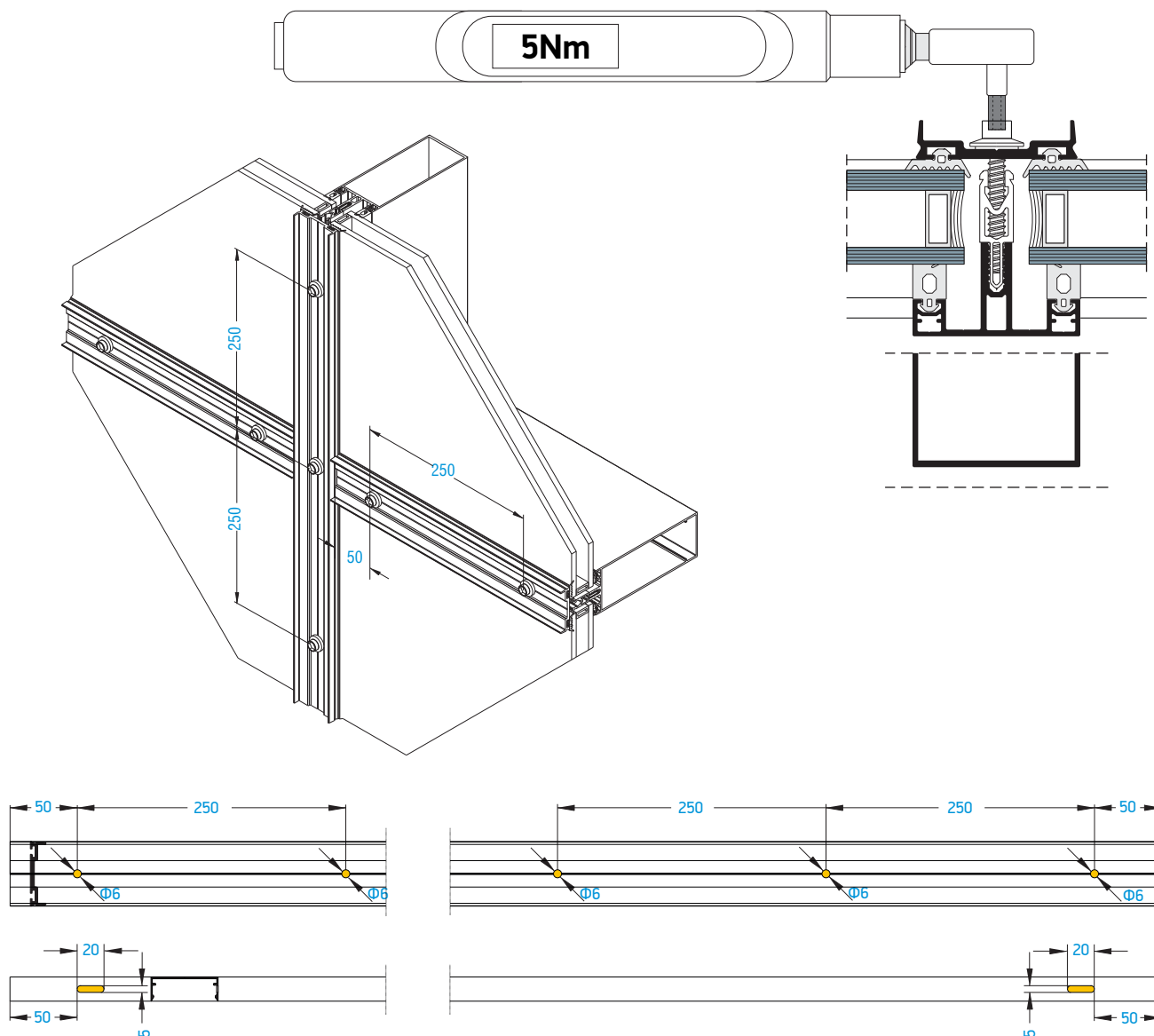


1. Βιδώστε, χωρίς να σφίξετε τέρμα τις βίδες, με το ηλεκτρικό δραπανοκατσάβιδο
2. Ρυθμίστε το δυναμόκλειδο στη σωστή τιμή, δηλαδή στα **5 Nm**
3. Τοποθετήστε την κατάλληλη μύτη βίδας
4. Χρησιμοποιώντας το δυναμόκλειδο, εφαρμόστε ομοιόμορφη και ελαφριά πίεση προς τα κάτω μέχρις ότου ακούσετε ένα κλικ. Αυτό το κλικ υποδεικνύει ότι η βίδα έχει ασφαλιστεί με τη σωστή δύναμη

Προσοχή: Μην ασκείτε περισσότερη δύναμη μετά το κλικ, καθώς μπορεί να προκληθεί υπερβολική πίεση και πιθανόν να προκληθεί ζημιά.

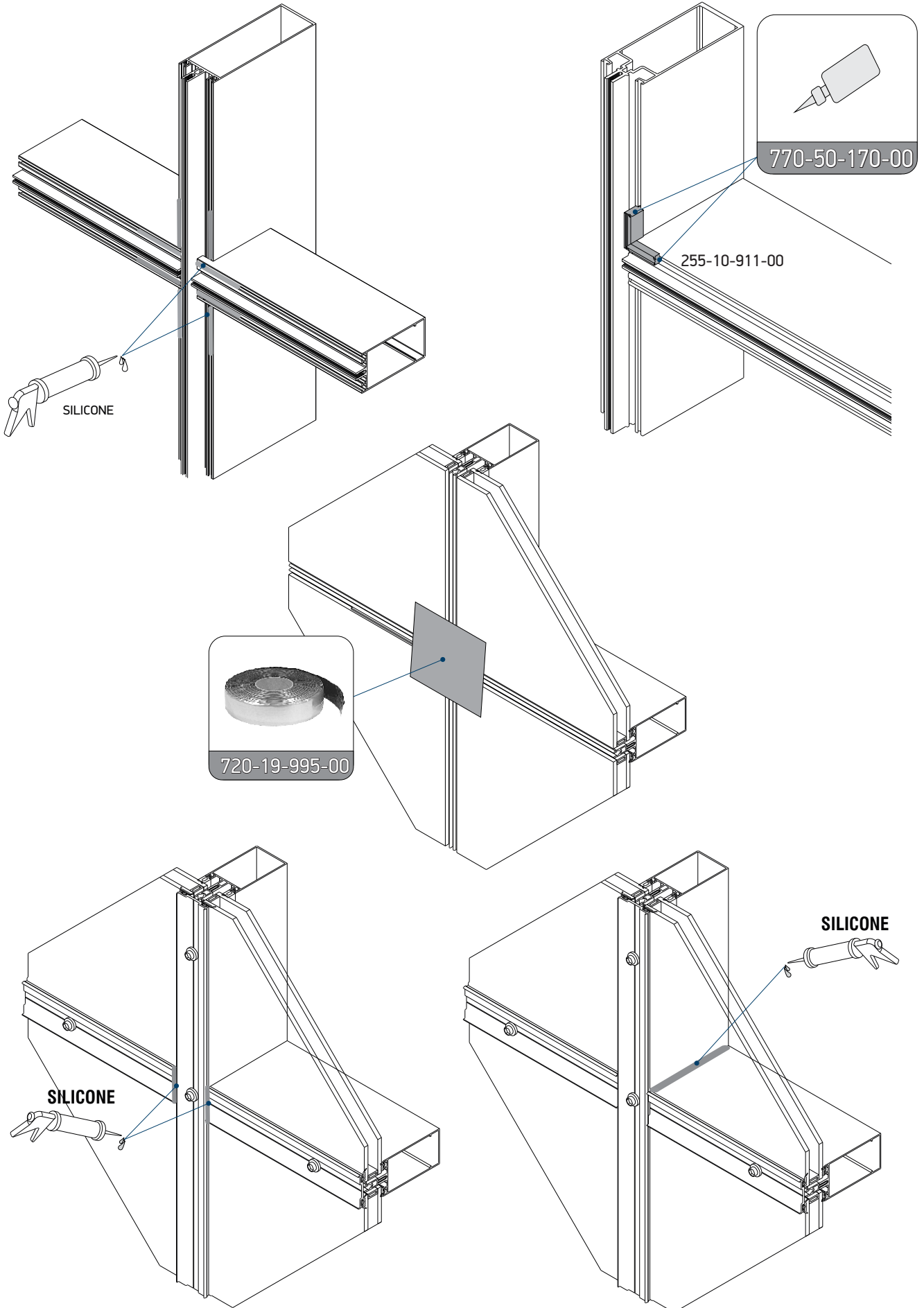
1. Screw in the screws, without fully tightening them, using the power drill
2. Set the torque wrench to the correct value, i.e., **5 Nm**.
3. Place the appropriate screwdriver bit.
4. Using the torque wrench, apply uniform pressure until you hear a click. This click indicates that the screw has been fastened with the correct force.

Note: Do not apply additional force after the click, as excessive pressure may cause damage.

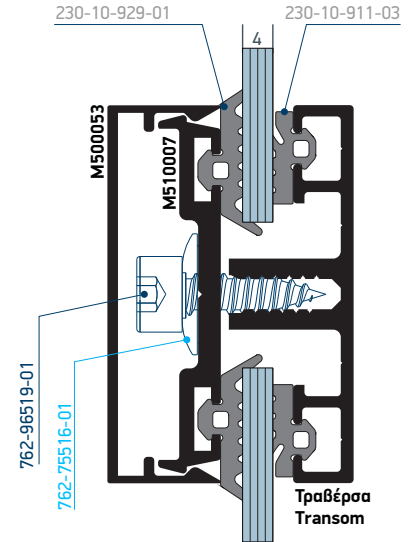
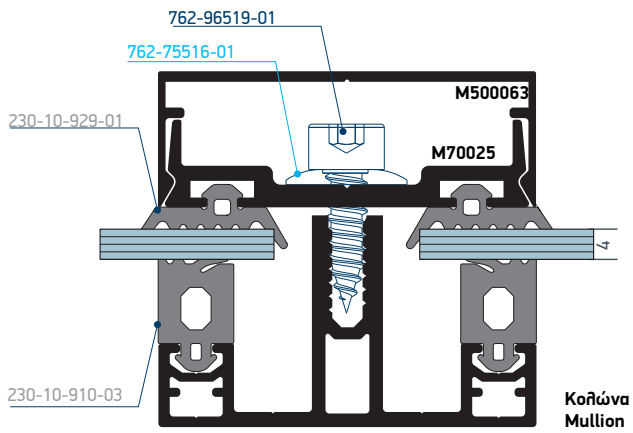


Συστήνεται να εγκατασταθεί μια βίδα στην πλάκα πίεσης της κολώνας, στο σημείο που ενώνεται η κολώνα με τη τραβέρσα, και όσο το δυνατόν πιο κοντά στο κέντρο (μέγιστη απόσταση 50 χιλιοστά από το κέντρο). Εάν η απόσταση των υπαρχόντων βιδών από το κέντρο είναι μεγαλύτερη, τότε καταφεύγουμε στο να ανοίξουμε μια τρύπα ακριβώς στο κέντρο και να τοποθετήσουμε μια βίδα εκεί.

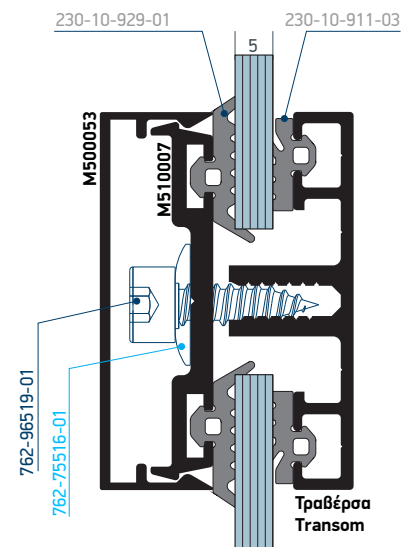
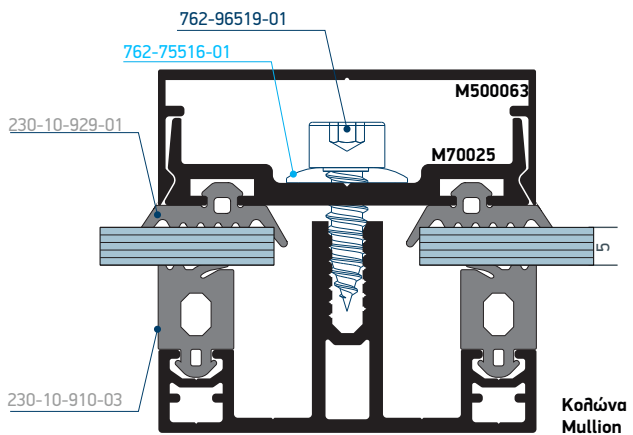
"It is recommended to install a screw on the pressure plate of the mullion, at the point where the transom joins the mullion, as close to the center as possible (maximum distance 50 millimeters from the center). If the distance of the existing screws from the center is greater, we resort to opening a hole right at the center and placing a screw there.



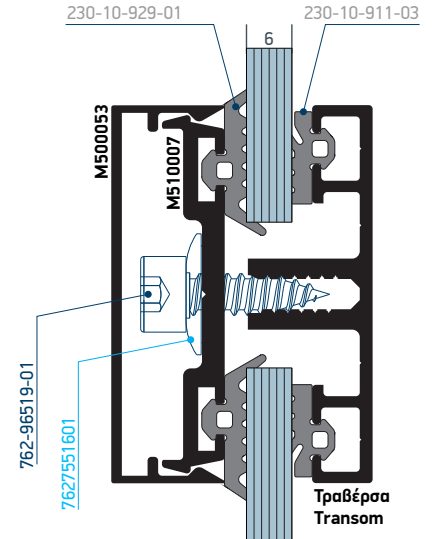
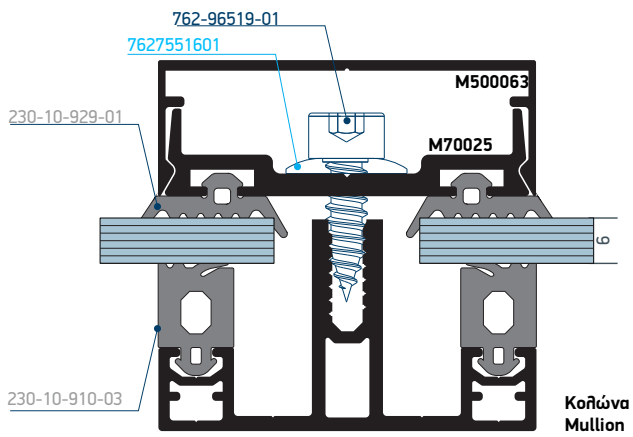
4mm Glass



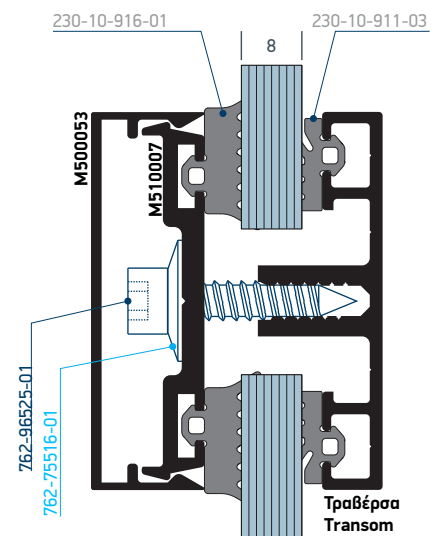
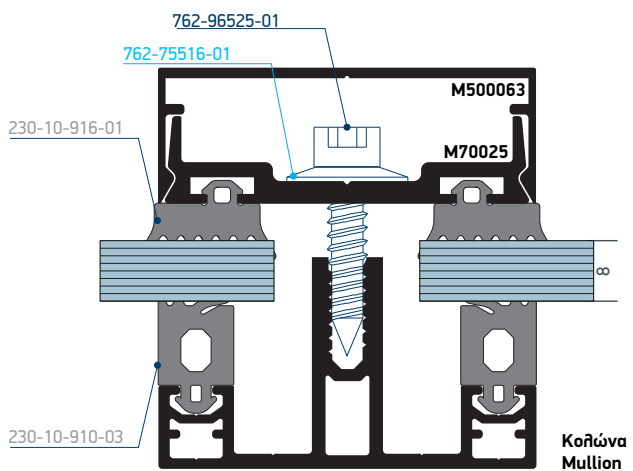
5mm Glass



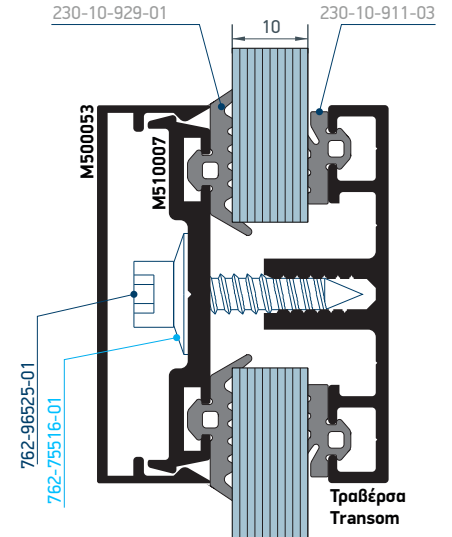
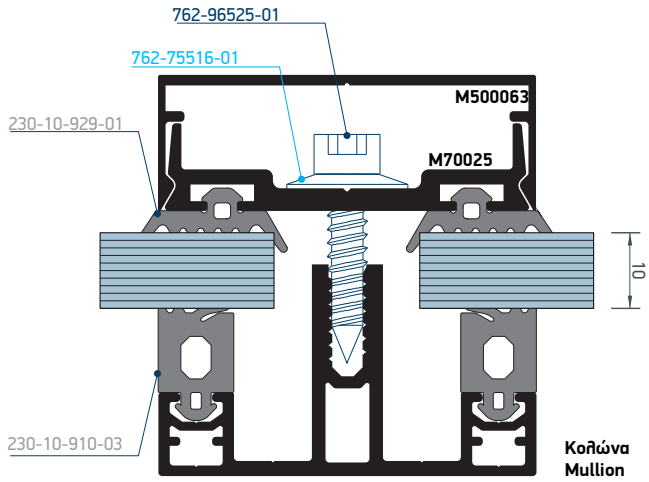
6mm Glass



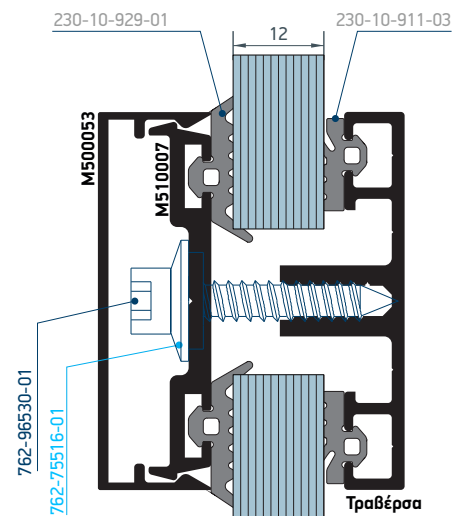
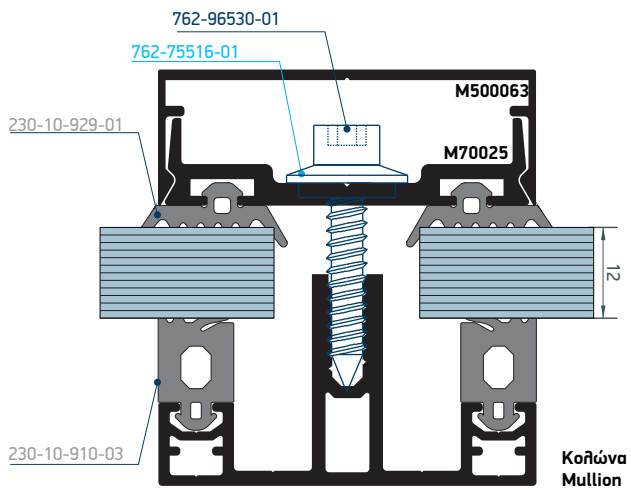
8mm Glass



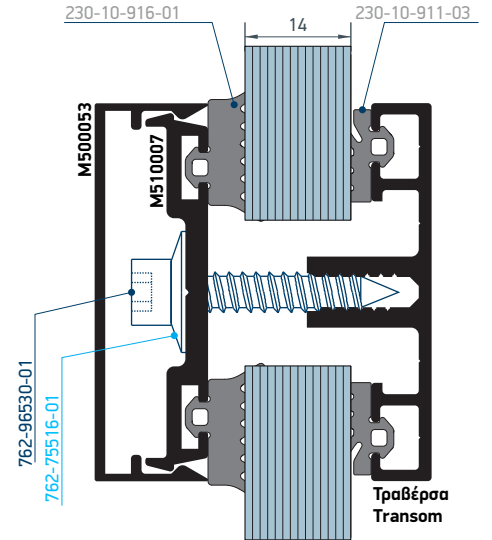
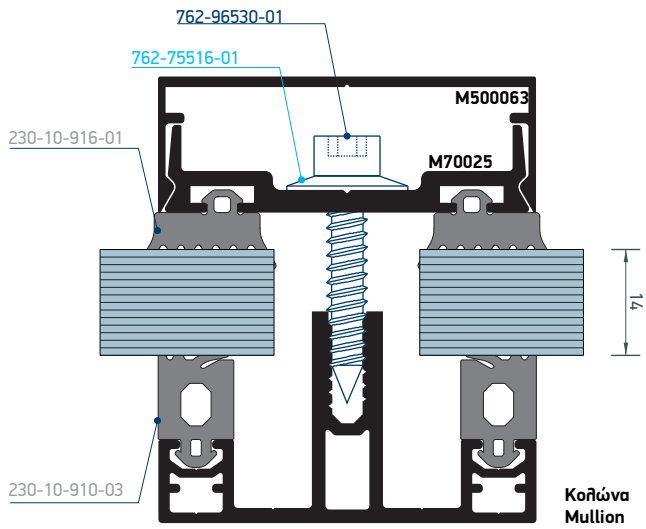
10mm Glass



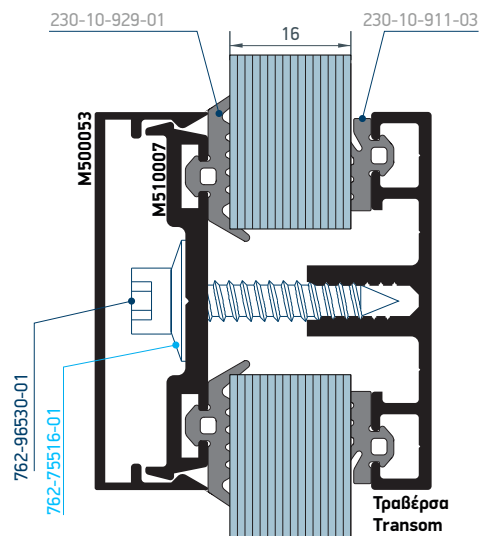
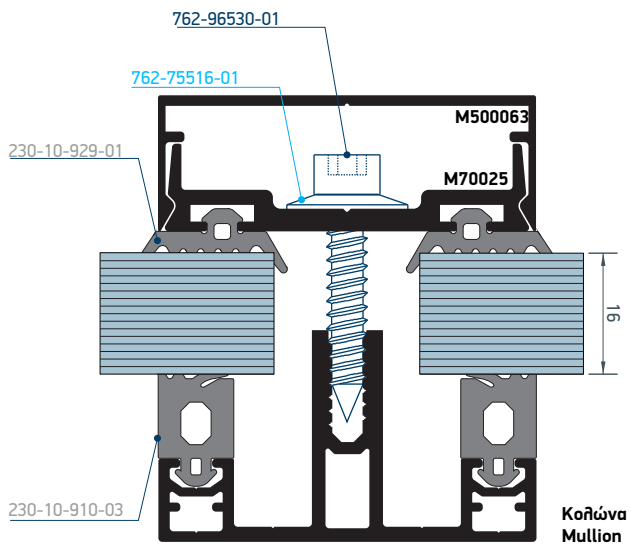
12mm Glass



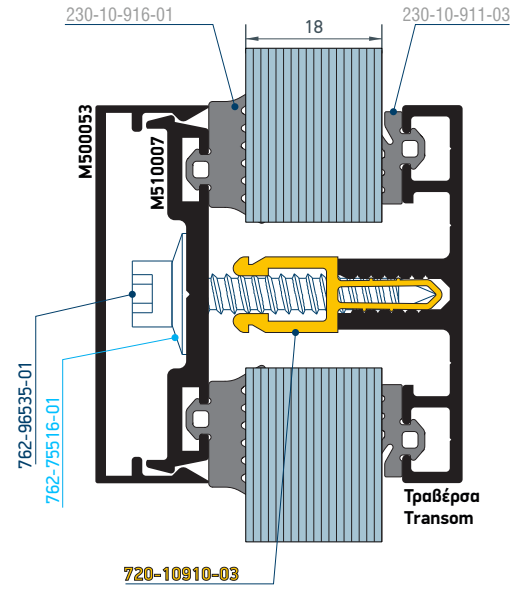
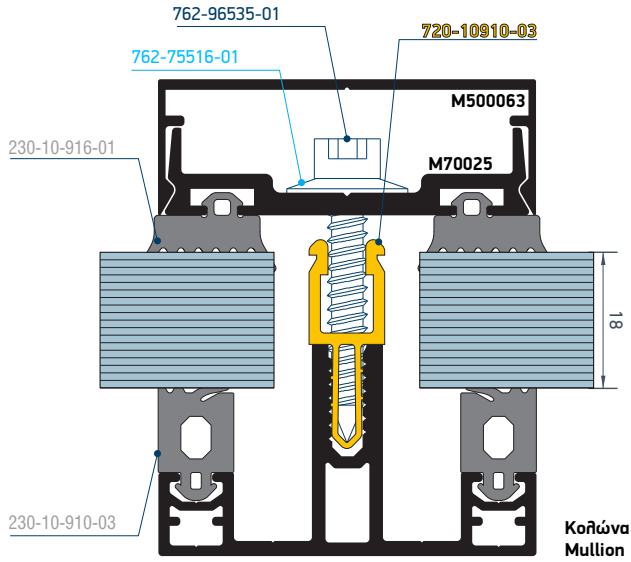
14mm Glass



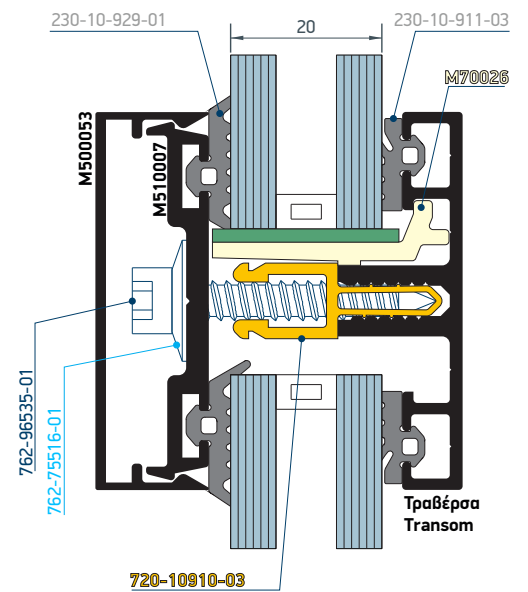
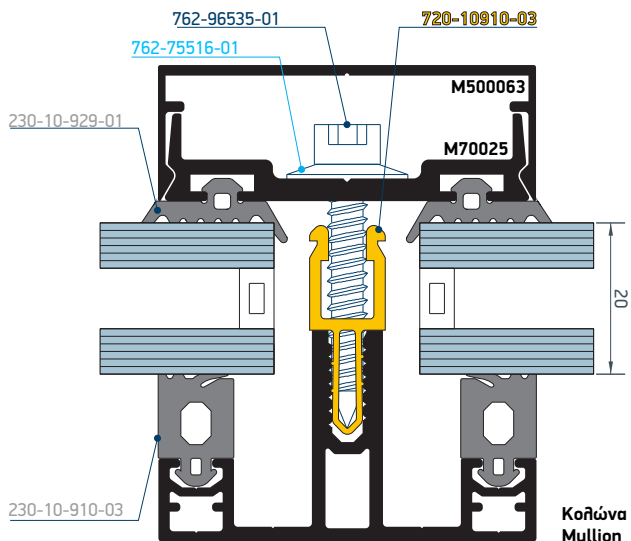
16mm Glass



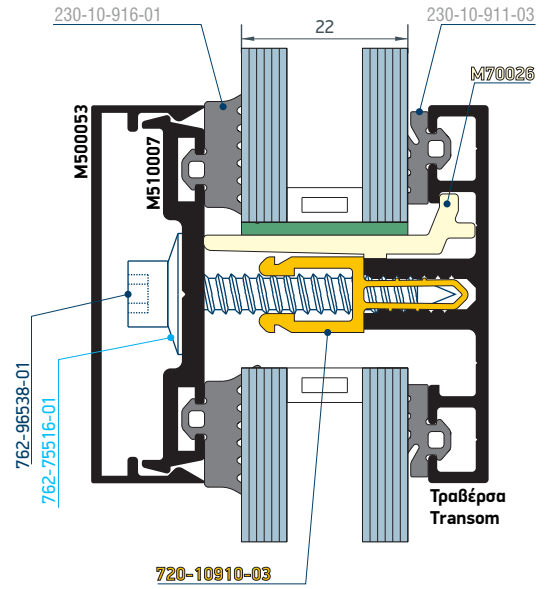
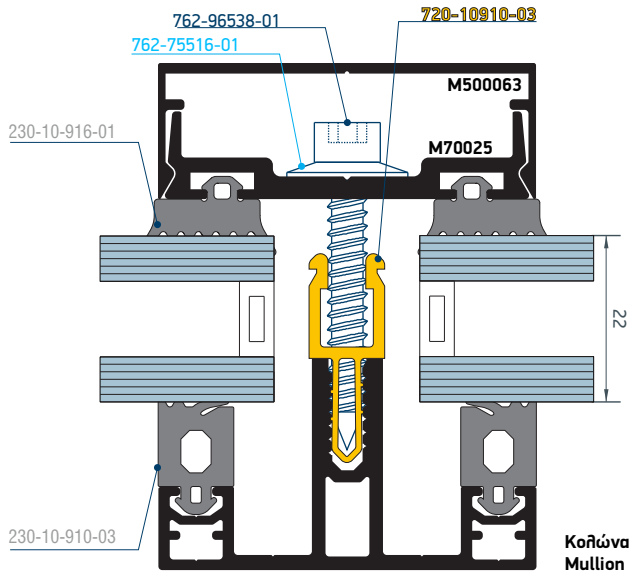
18mm Glass



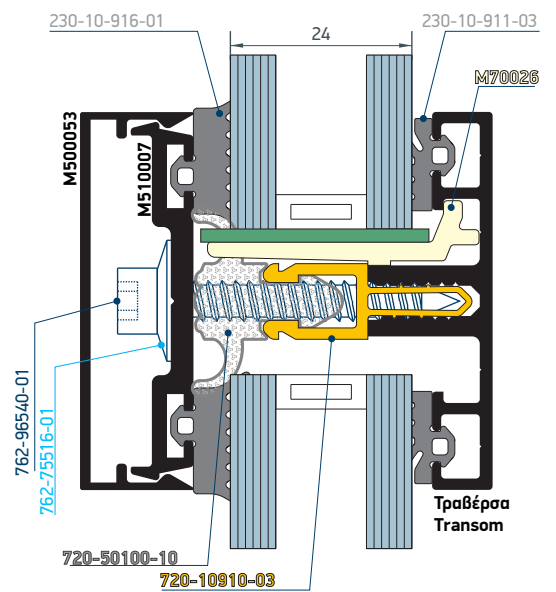
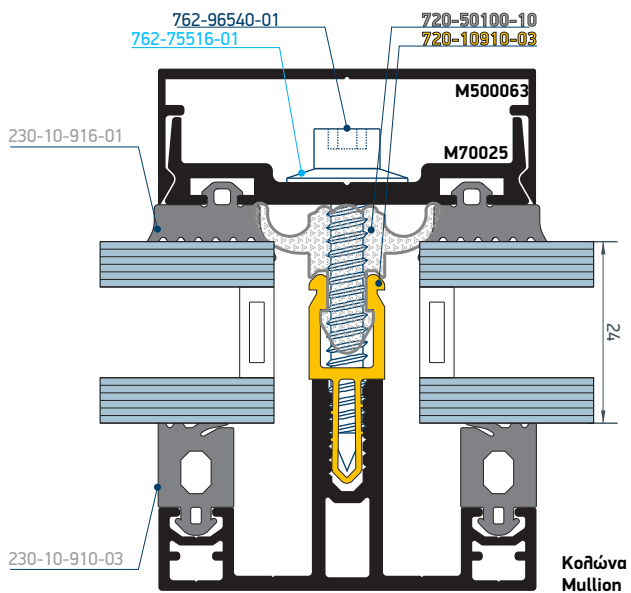
20mm Glass



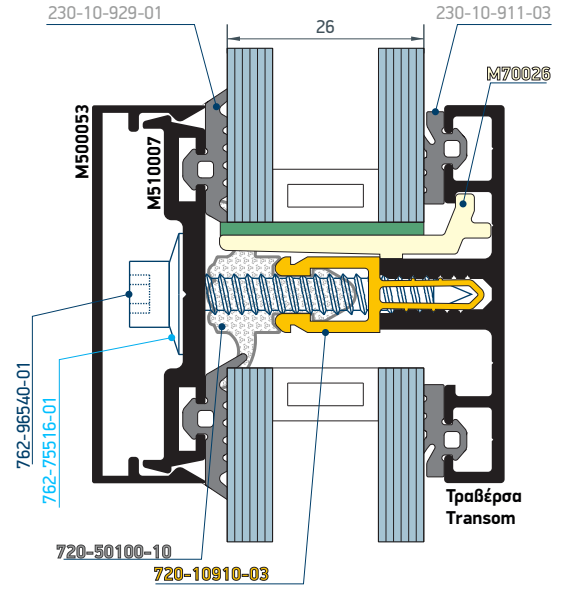
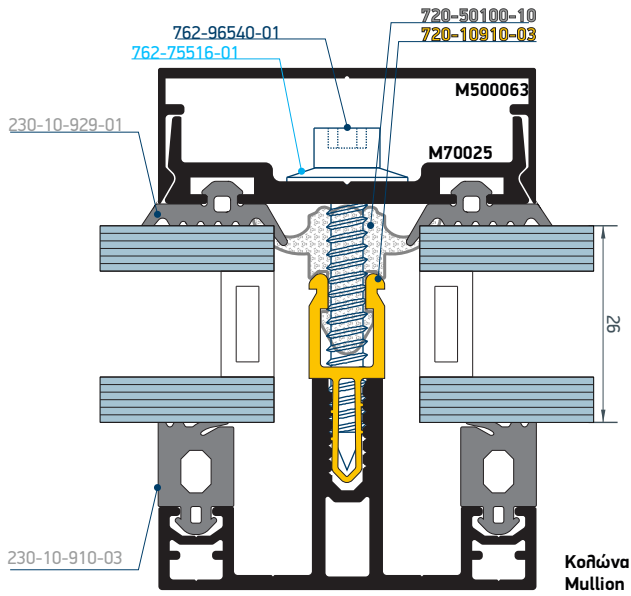
22mm Glass



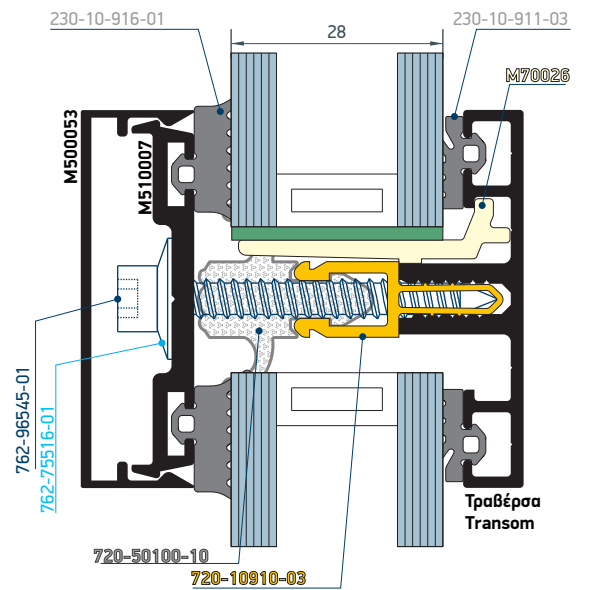
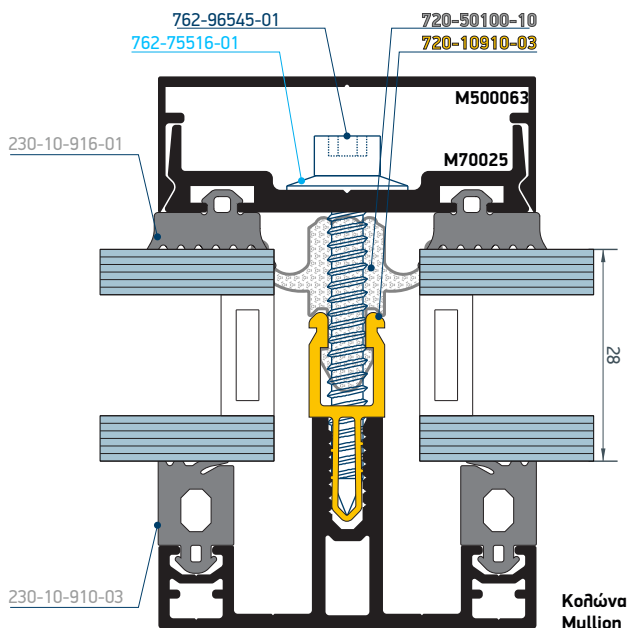
24mm Glass



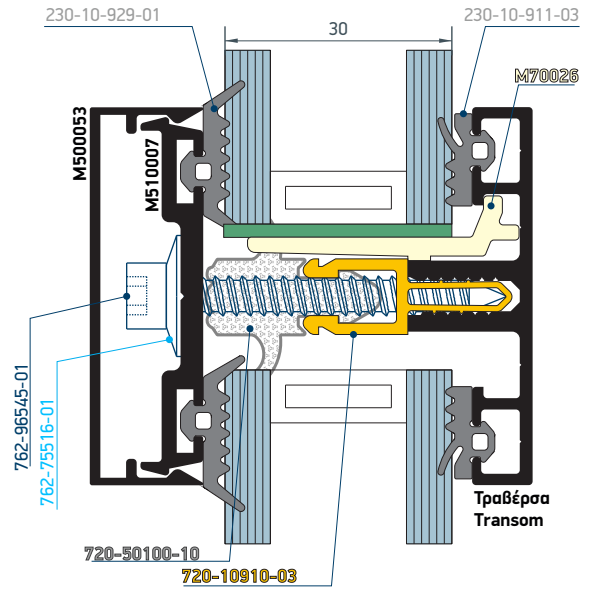
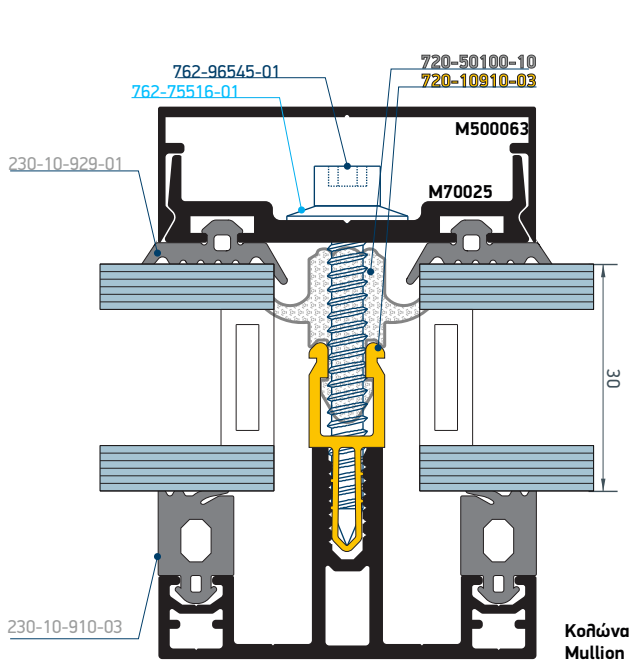
26mm Glass



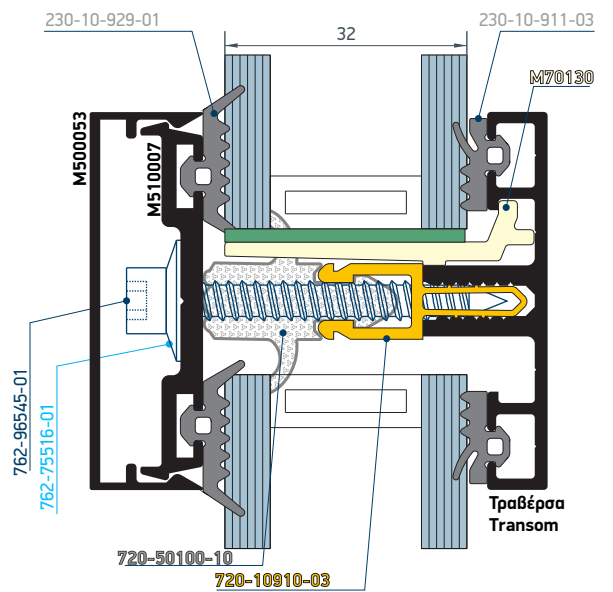
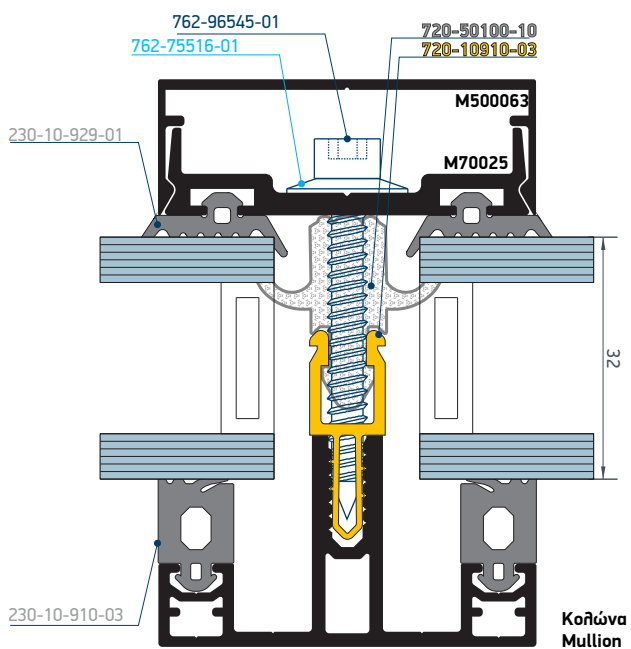
28mm Glass



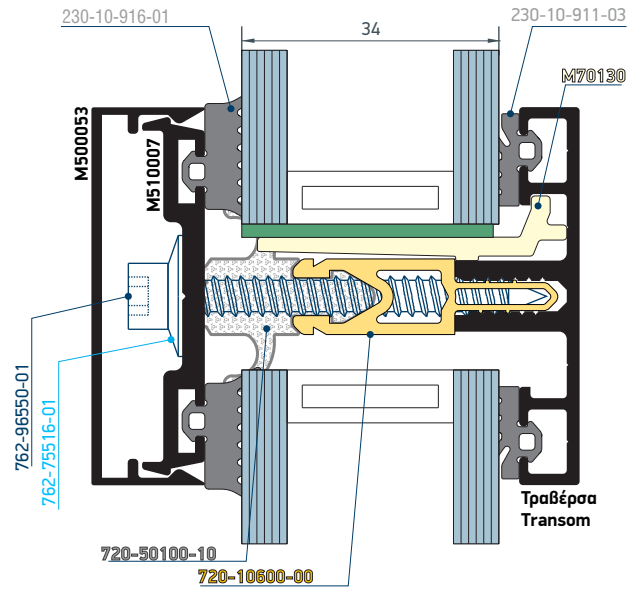
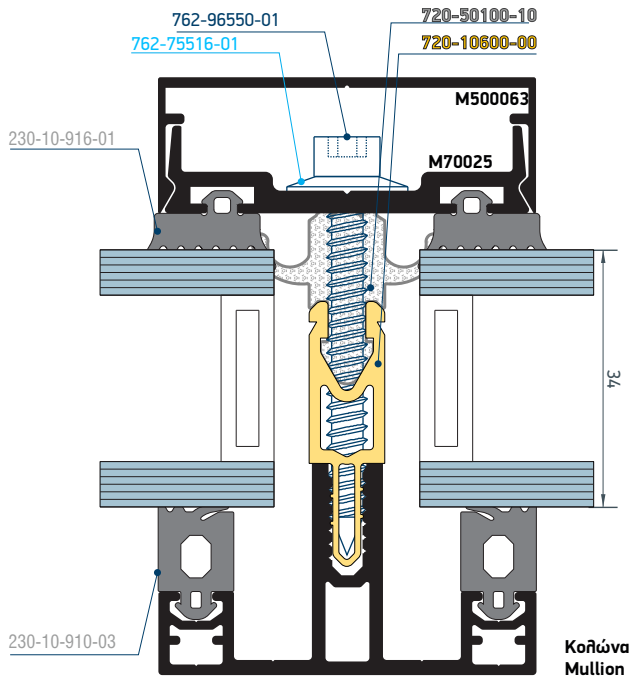
30mm Glass



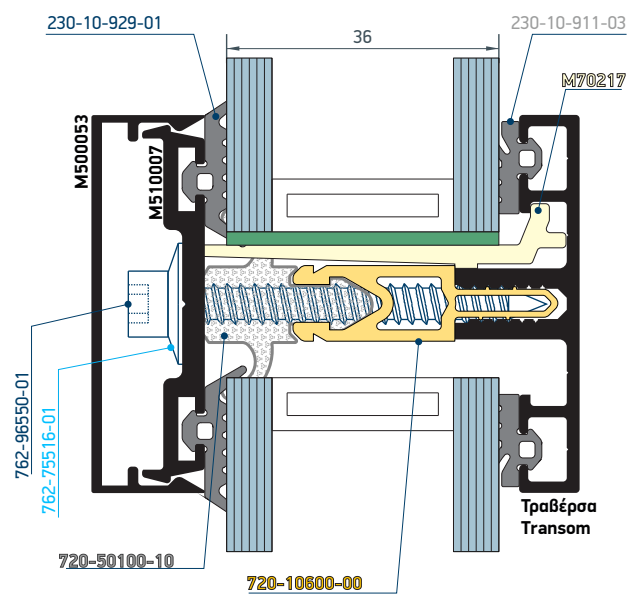
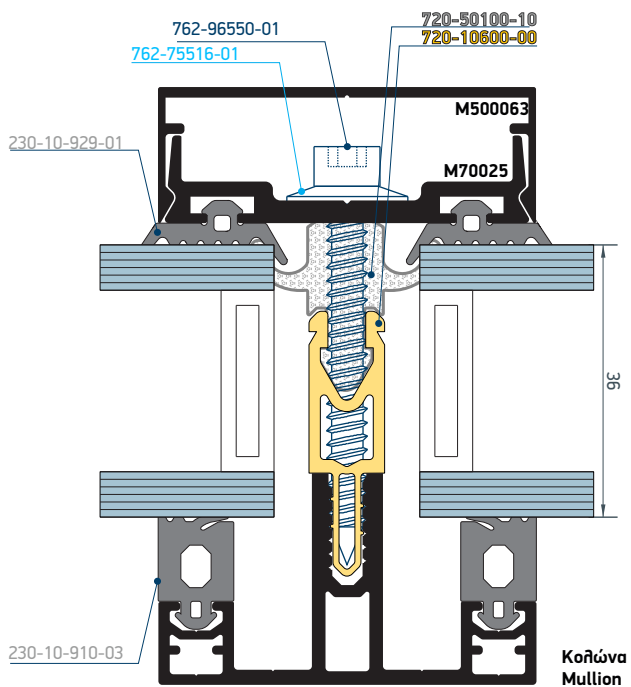
32mm Glass



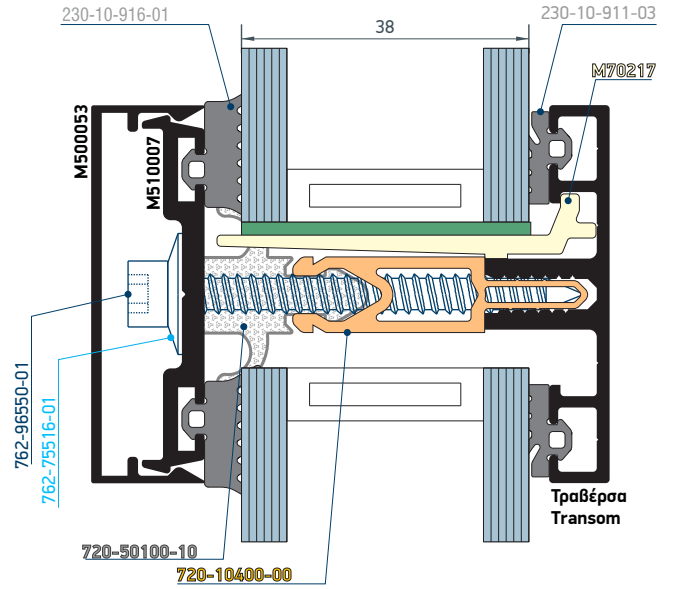
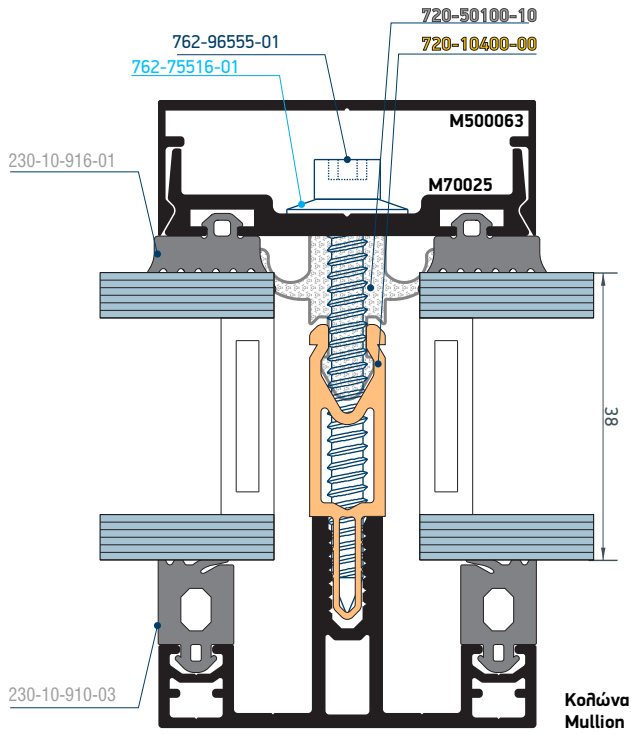
34mm Glass



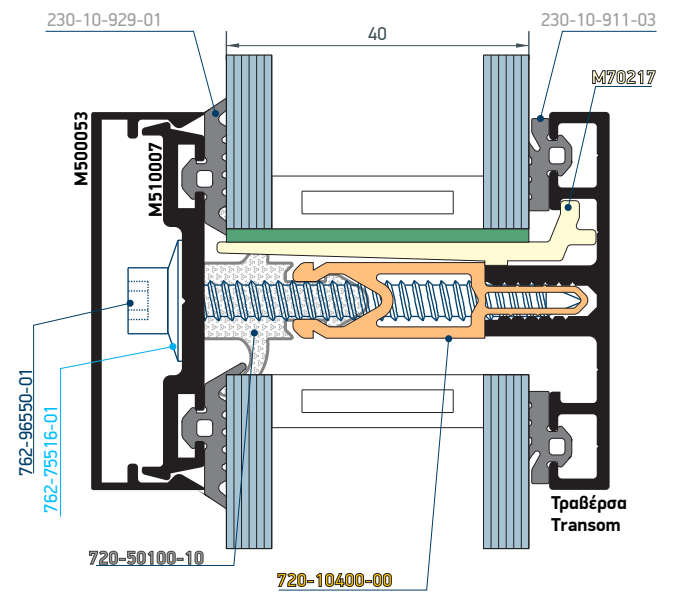
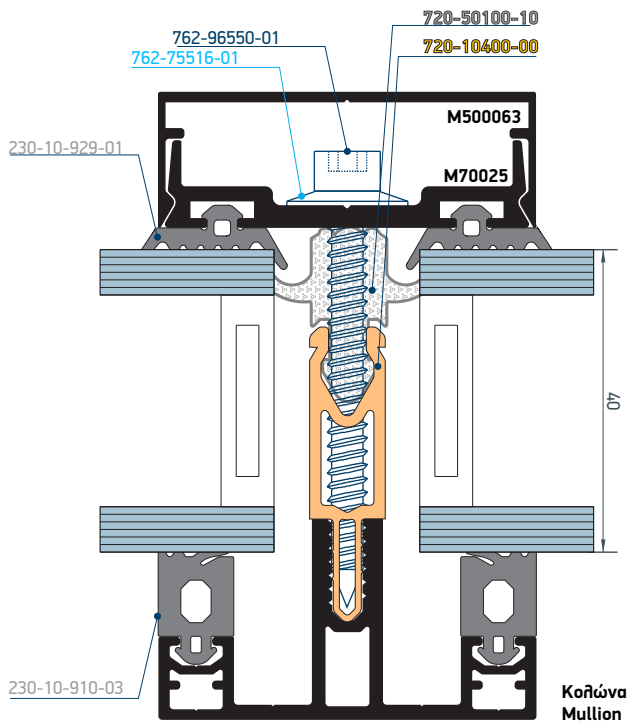
36mm Glass



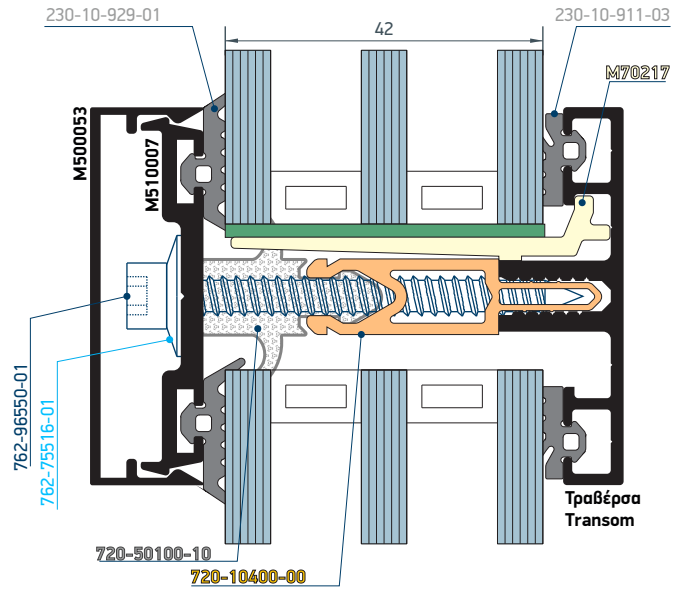
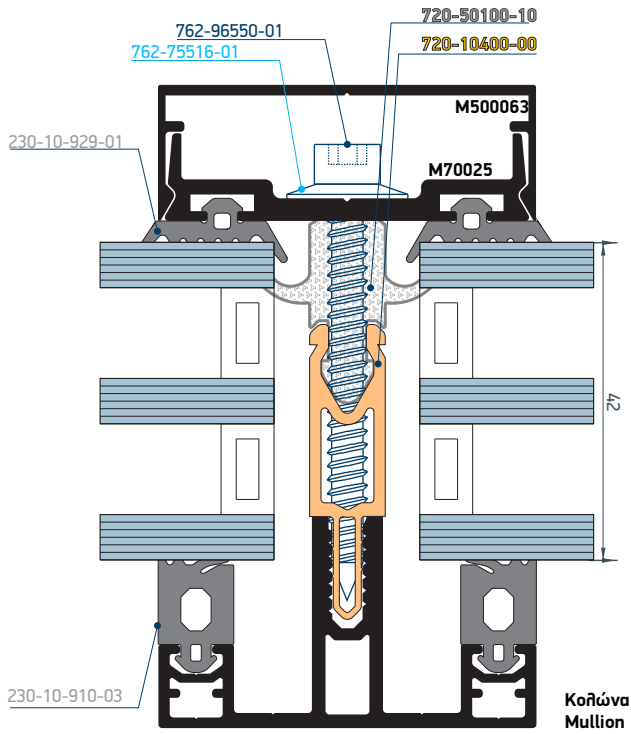
38mm Glass



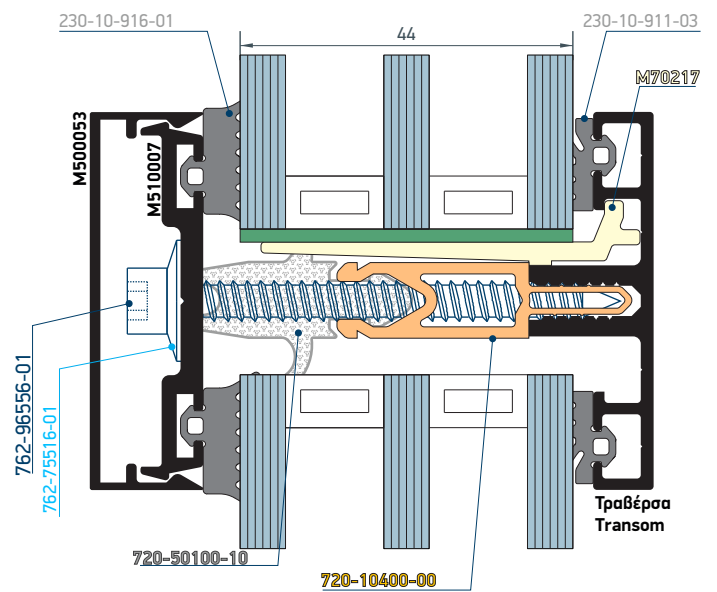
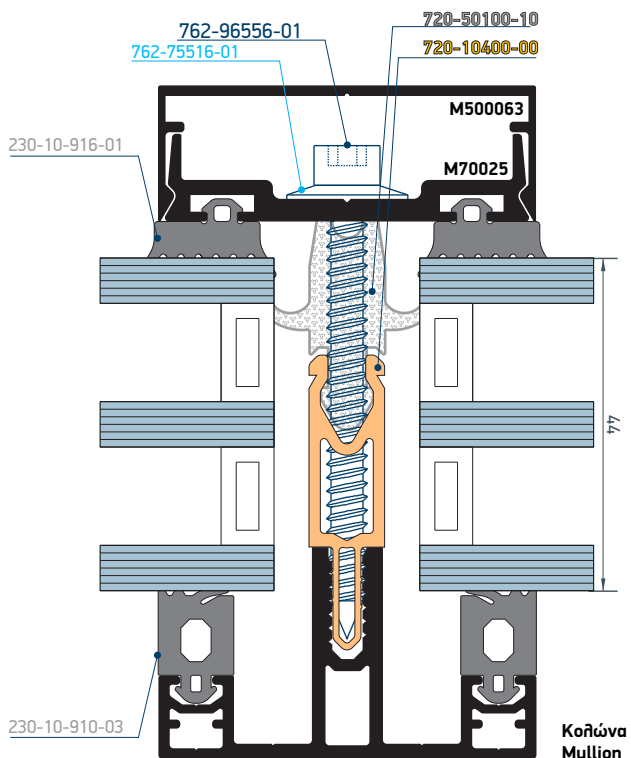
40mm Glass



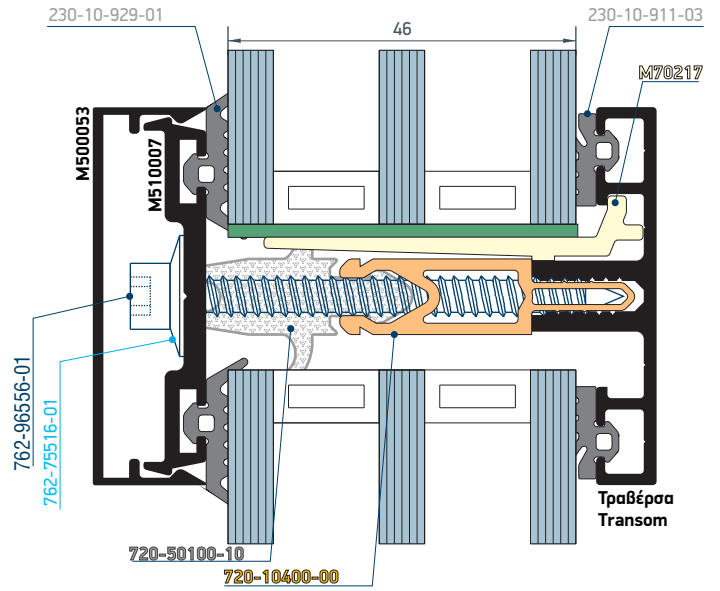
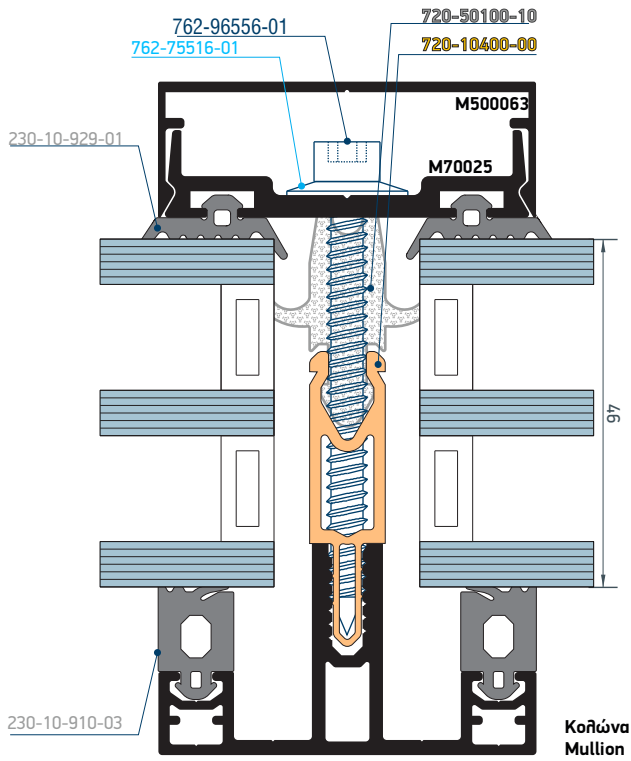
42mm Glass



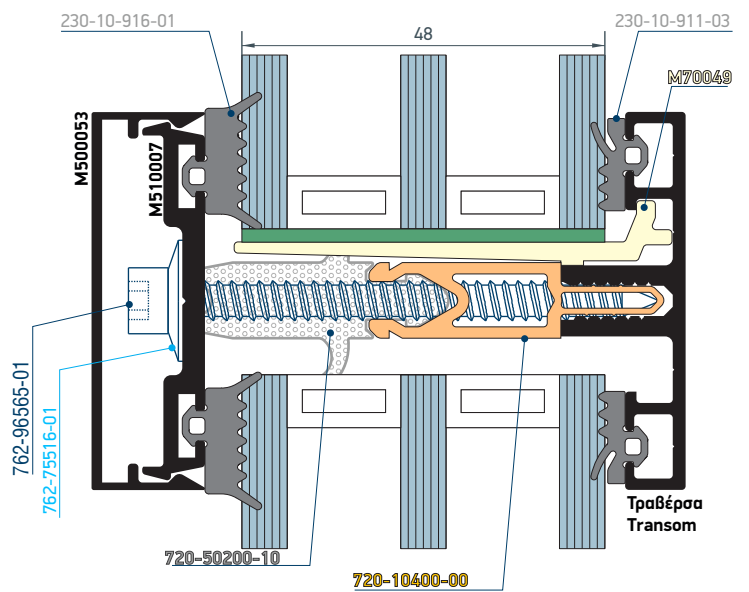
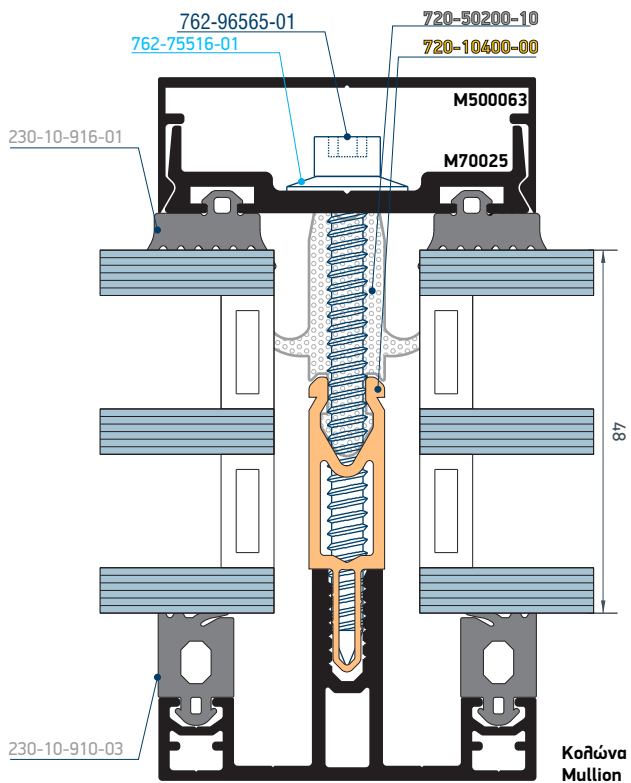
44mm Glass



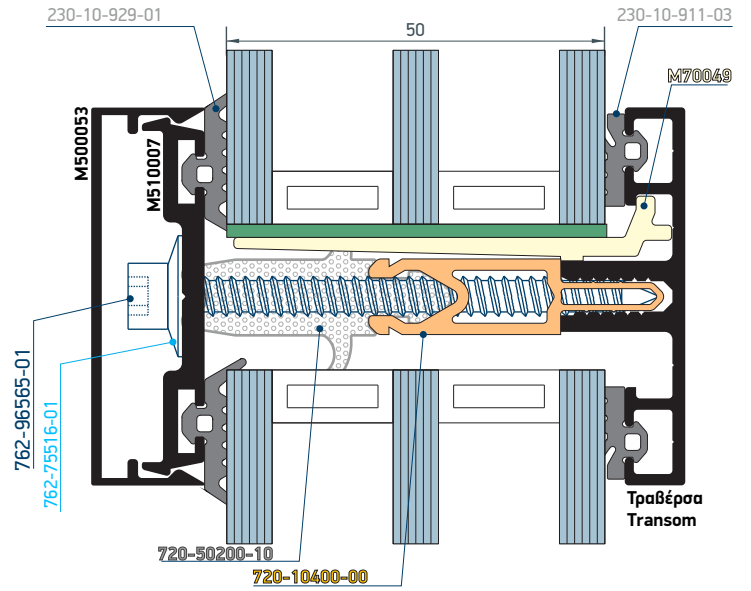
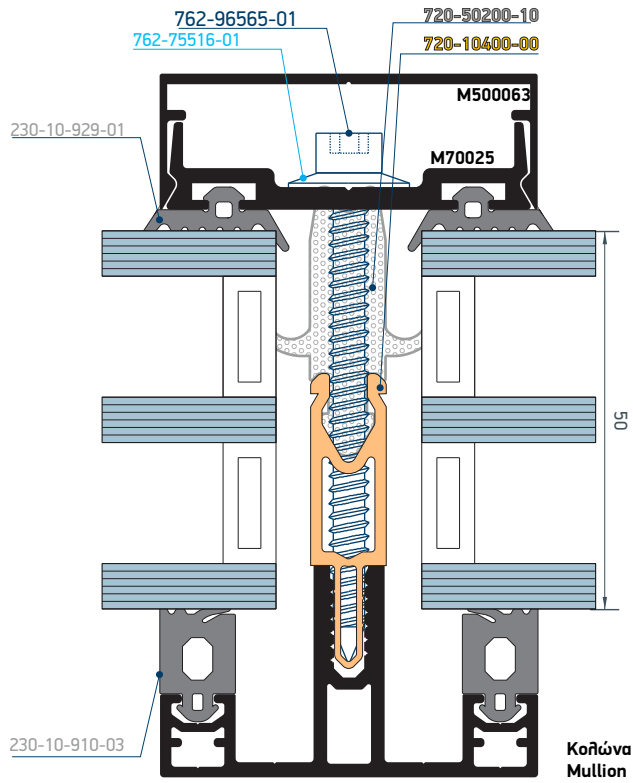
46mm Glass



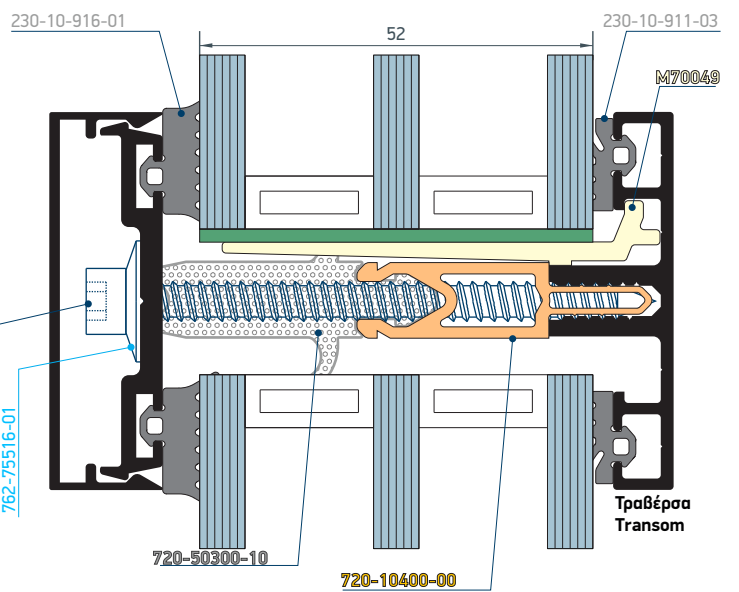
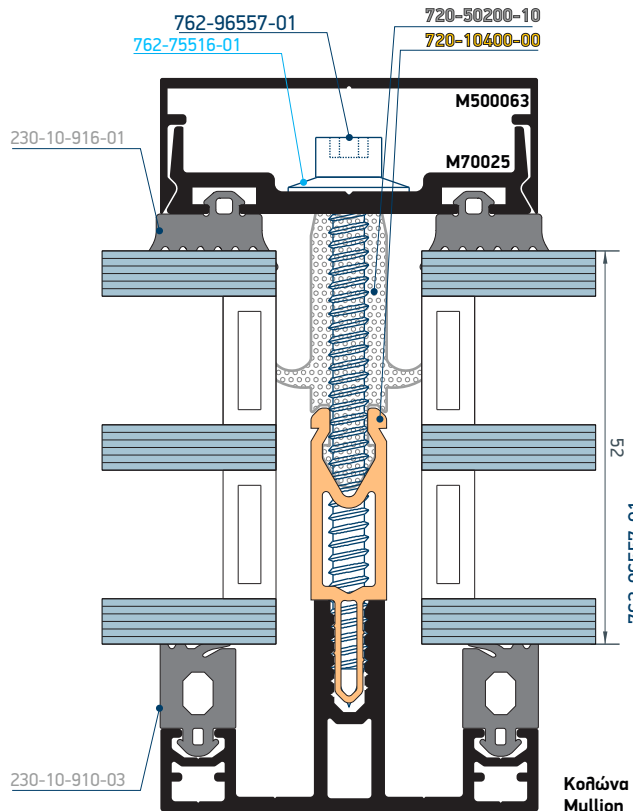
48mm Glass

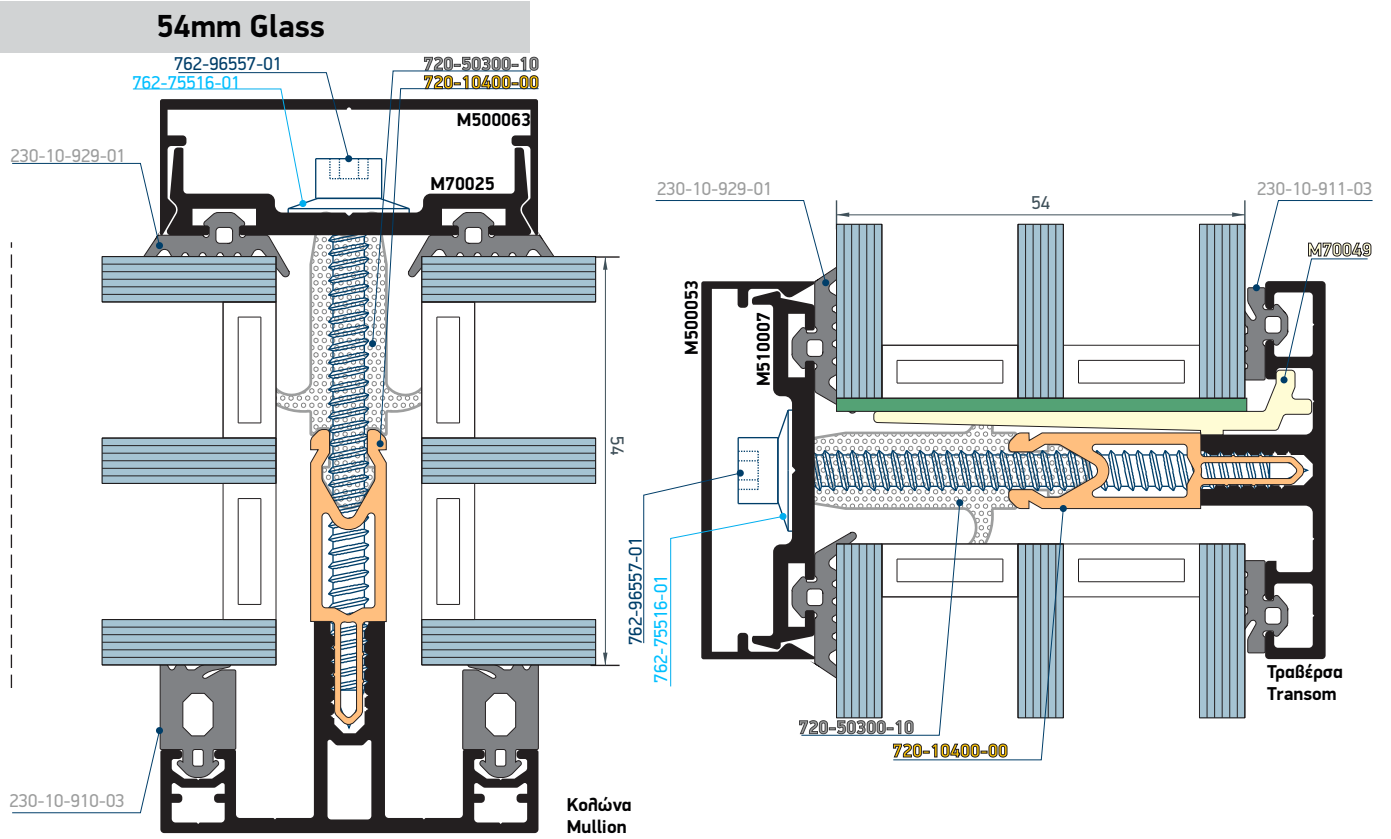


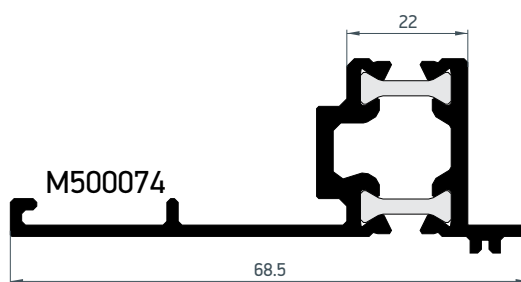
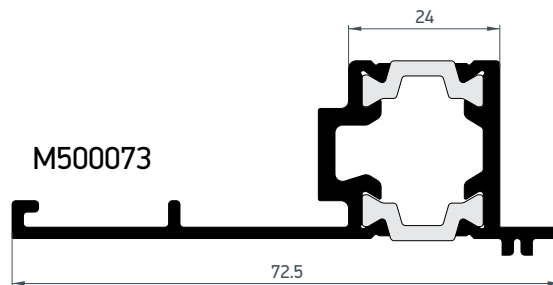
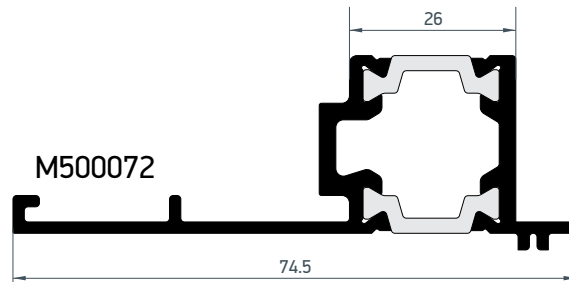
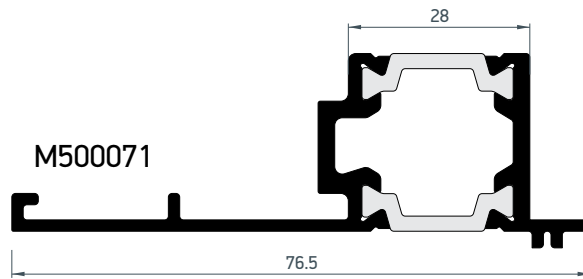
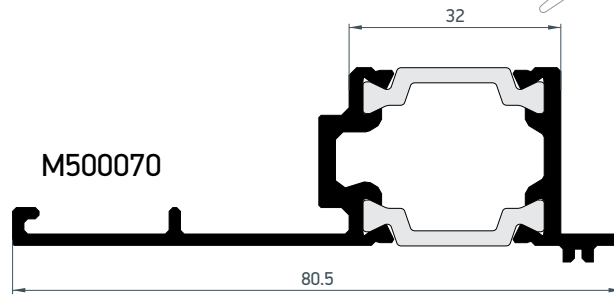
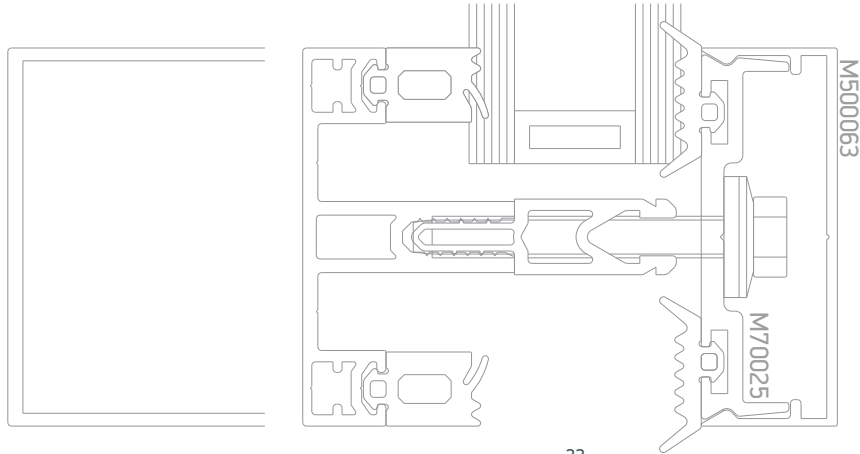
50mm Glass



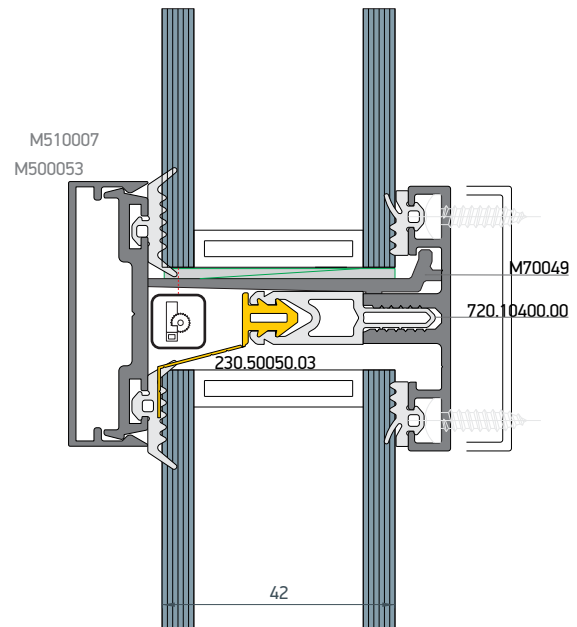
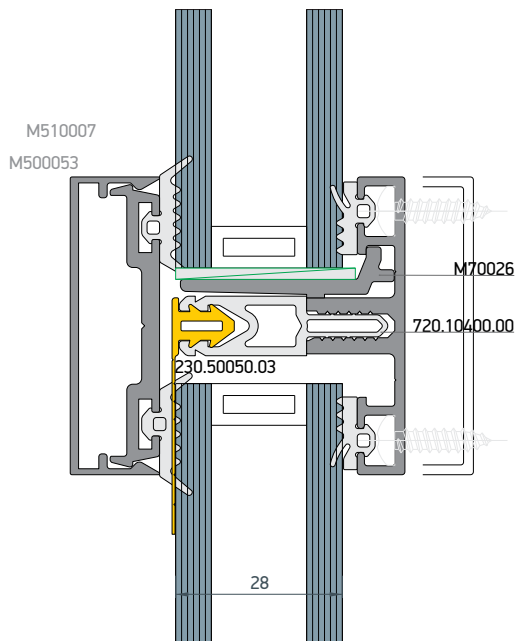
52mm Glass



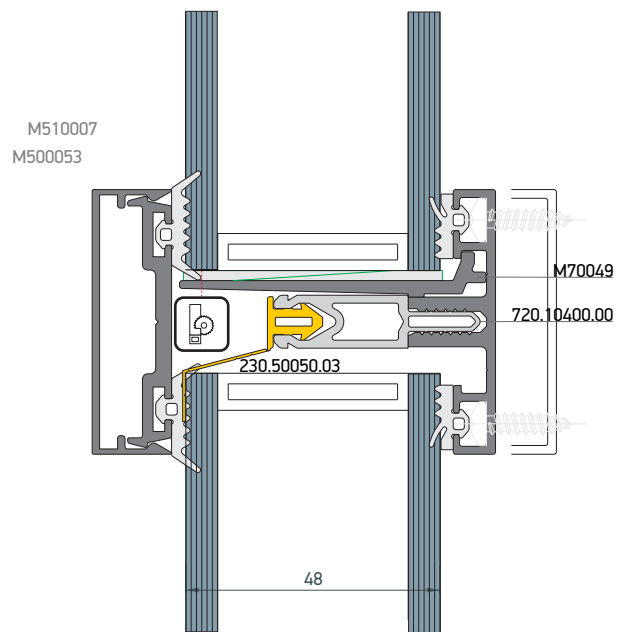
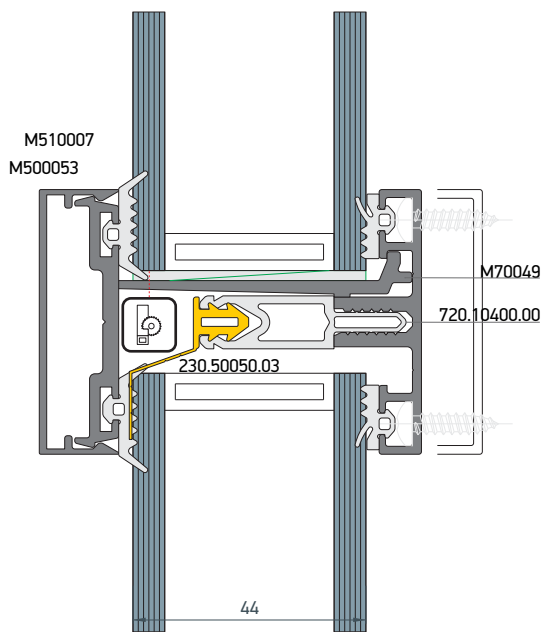




**Transom barrier gasket for 44-48mm glass-
Λάστιχο φραγμού υδατοστεγάνωσης τραβέρσας για 44-48mm υαλοπέτασμα**



* For 28-42mm glass with PVC 720.10600.00 Insulating bar for curtain walls 21,4mm/3m
Για 28-42mm υαλοπέτασμα με PVC 720.10600.00 Βέργα θερμοδιακοπής υαλοπετάσματος 21,4mm/3m

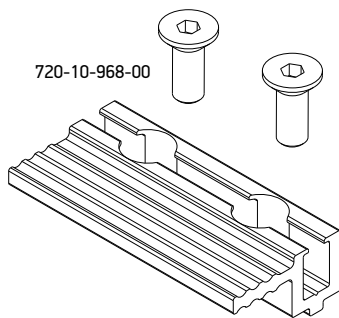
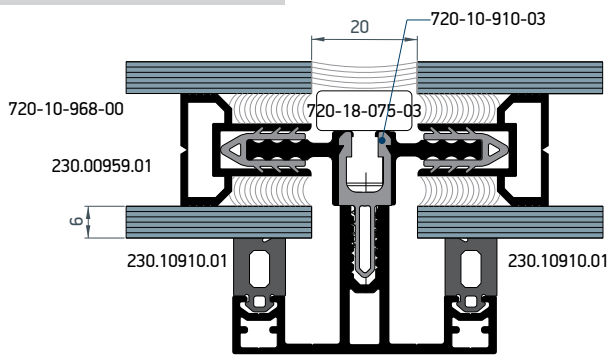


* For 44-48mm glass with PVC 720.10400.00 Insulating bar for curtain walls 25mm/3m
Για 44-48mm υαλοπέτασμα με PVC 720.10400.00 Βέργα θερμοδιακοπής υαλοπετάσματος 25mm/3m

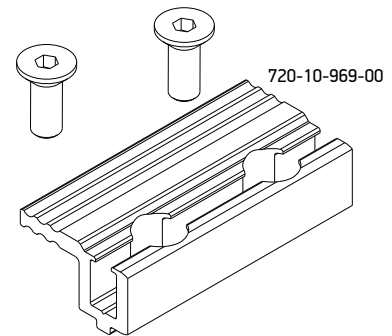
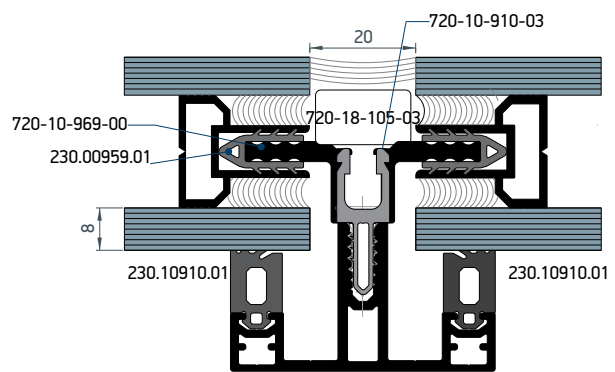


STRUCTURAL

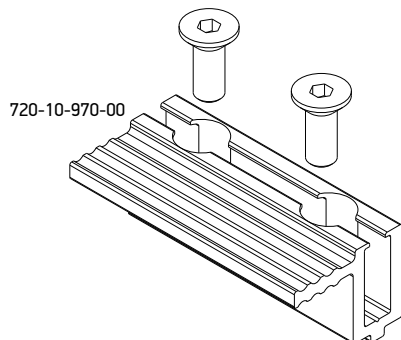
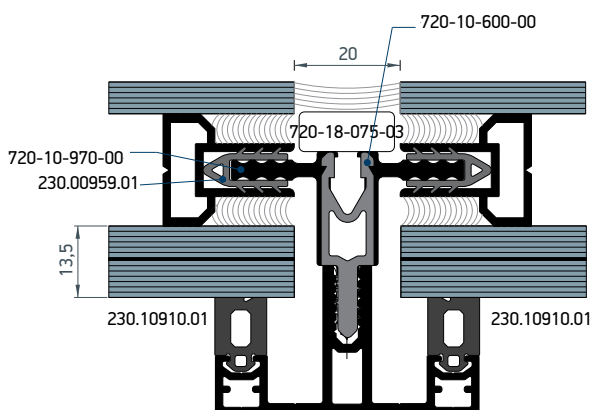
6mm inner glass

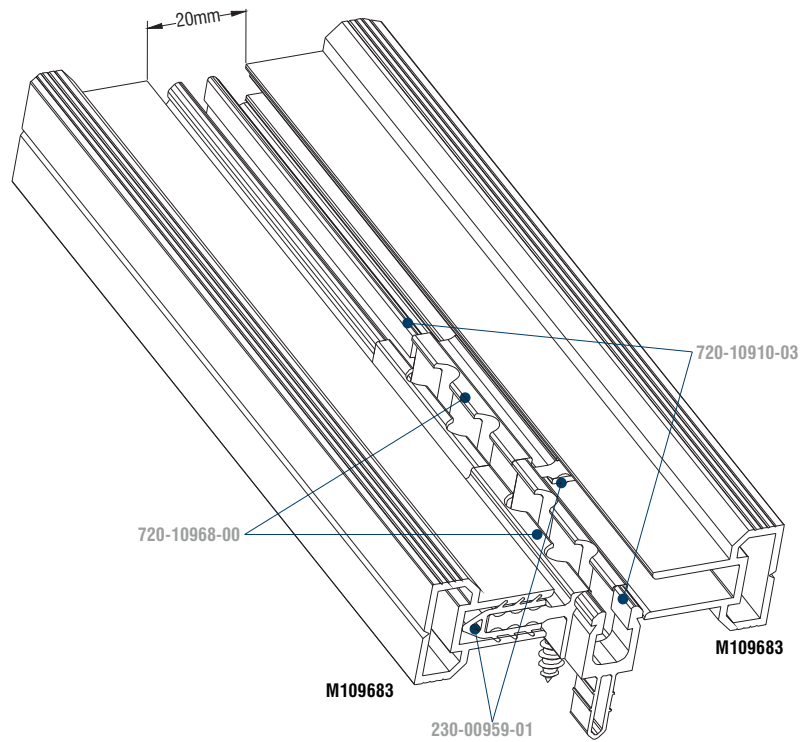


8mm inner glass

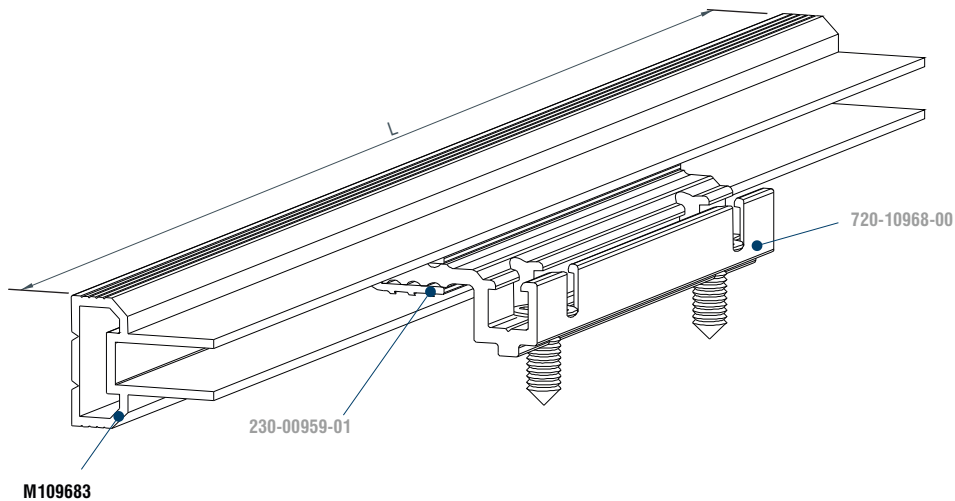


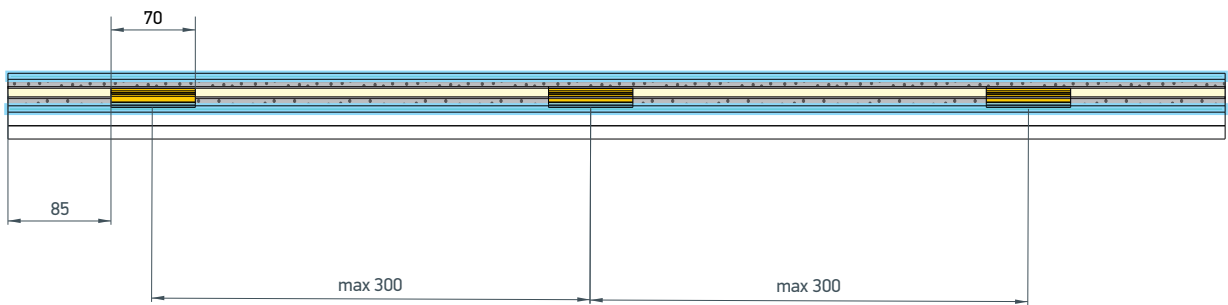
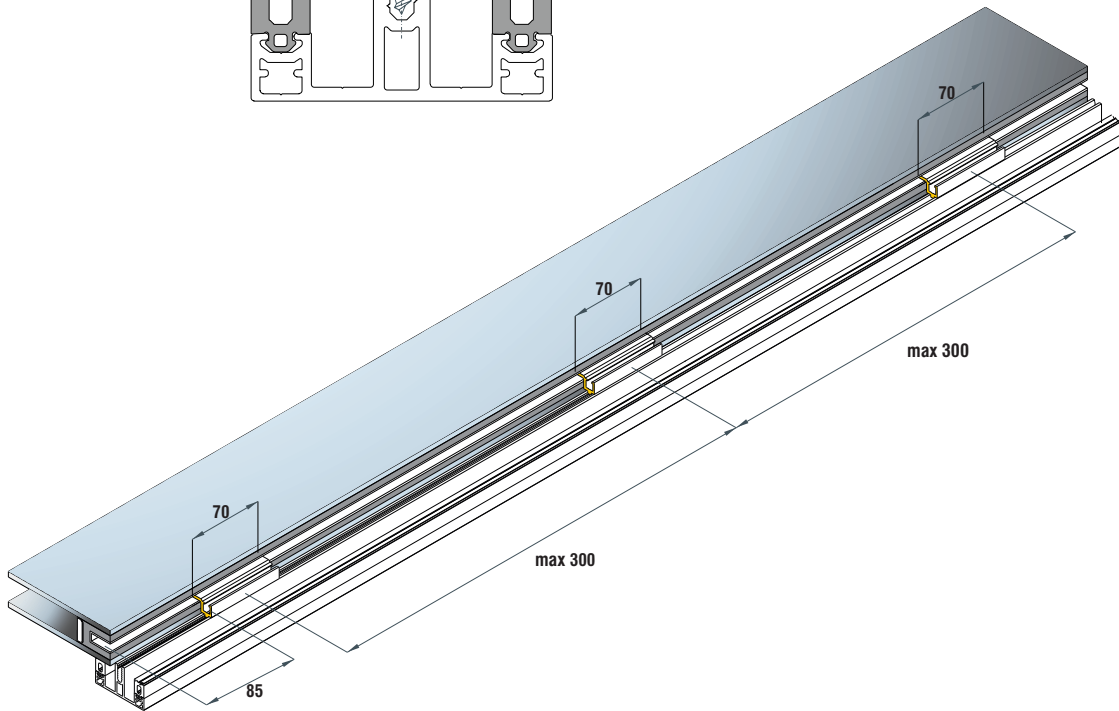
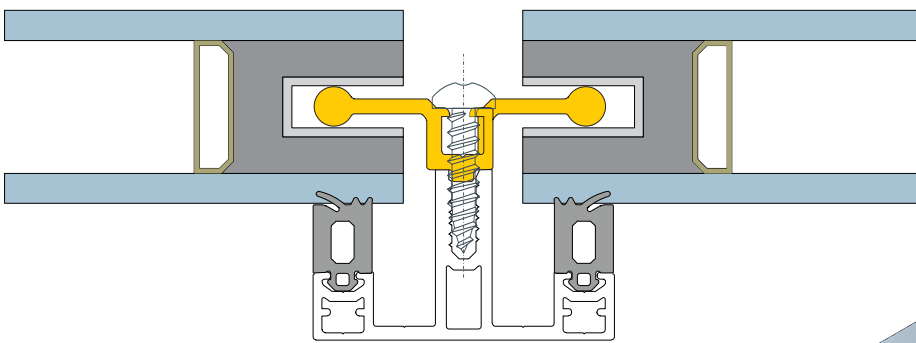
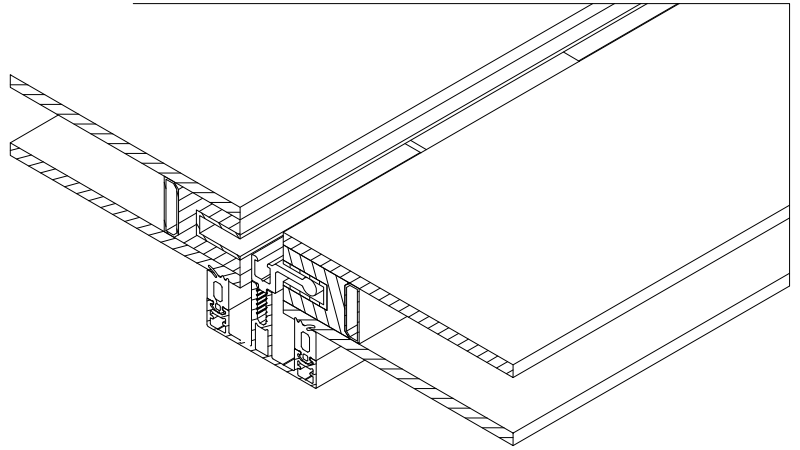
6+6 inner glass



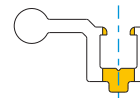
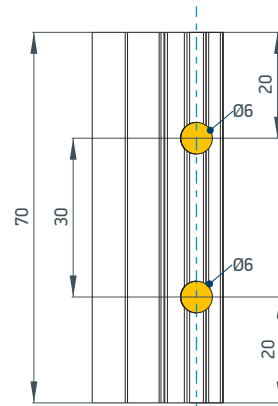
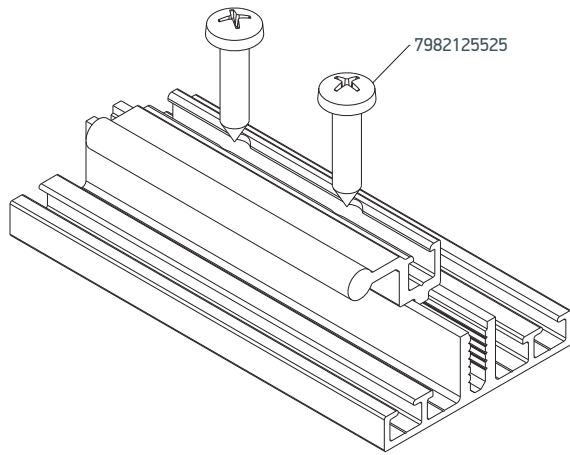


M109683 - L < 90cm	➔	3 pcs 720.10968.00
M109683 - L = 90cm - 120cm	➔	4 pcs 720.10968.00
M109683 - L = 120cm - 150cm	➔	5 pcs 720.10968.00
M109683 - L = 150cm - 180cm	➔	6 pcs 720.10968.00
M109683 - L = 180cm - 210cm	➔	7 pcs 720.10968.00
M109683 - L = 210cm - 240cm	➔	8 pcs 720.10968.00
M109683 - L > 240cm	➔	9 pcs 720.10968.00 (or more)

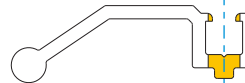
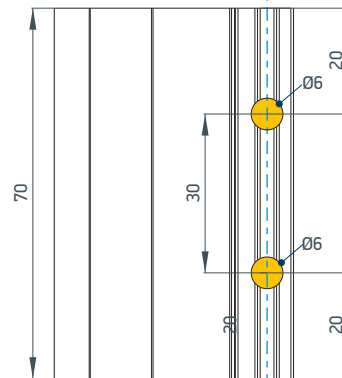
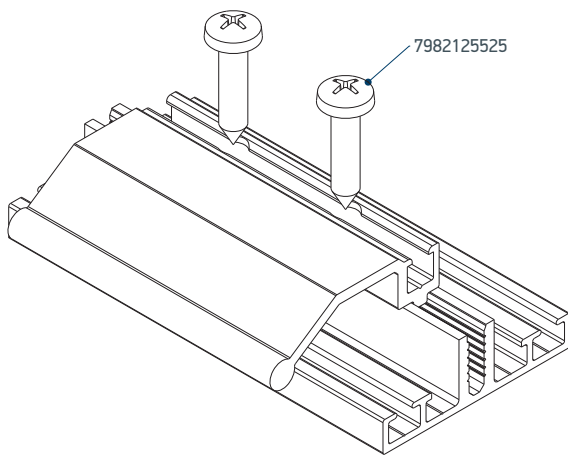




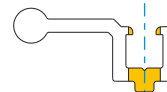
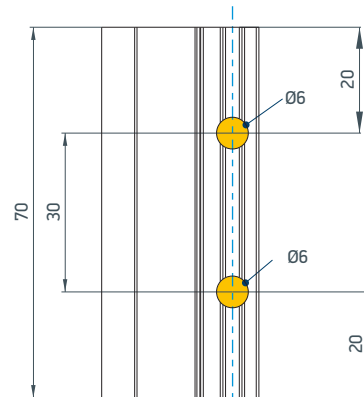
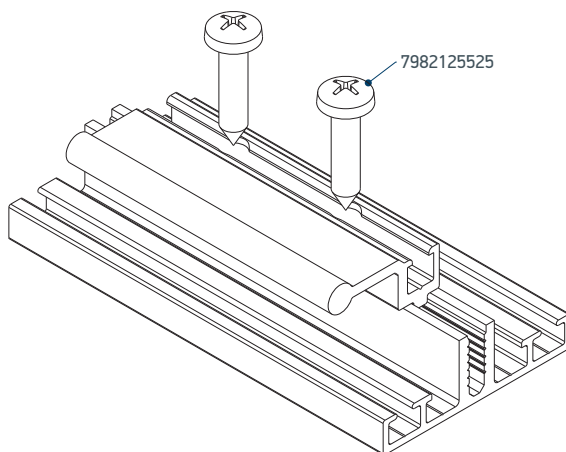
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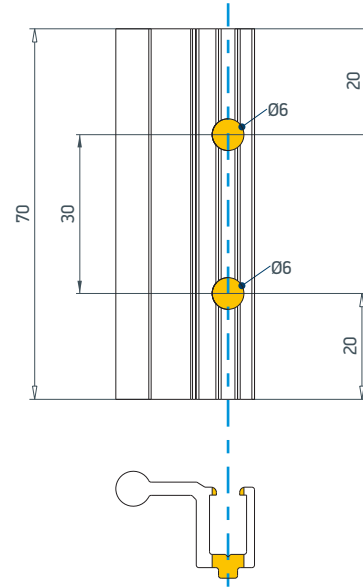
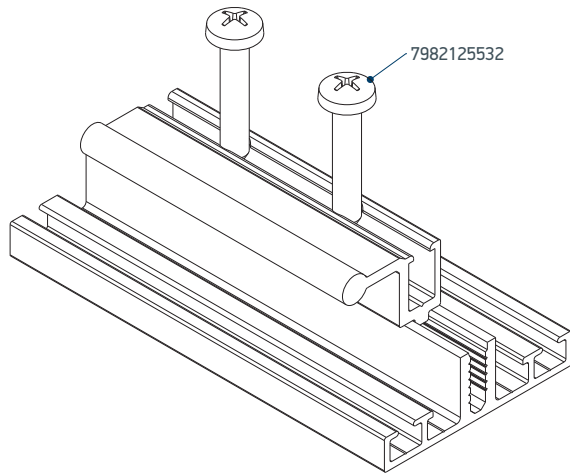
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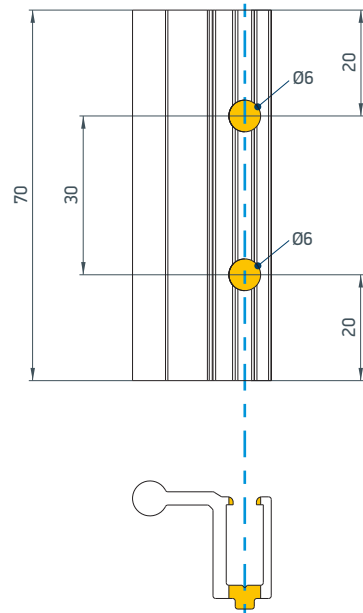
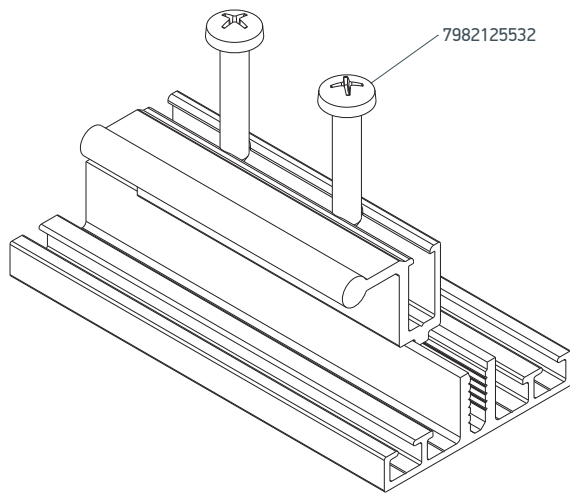
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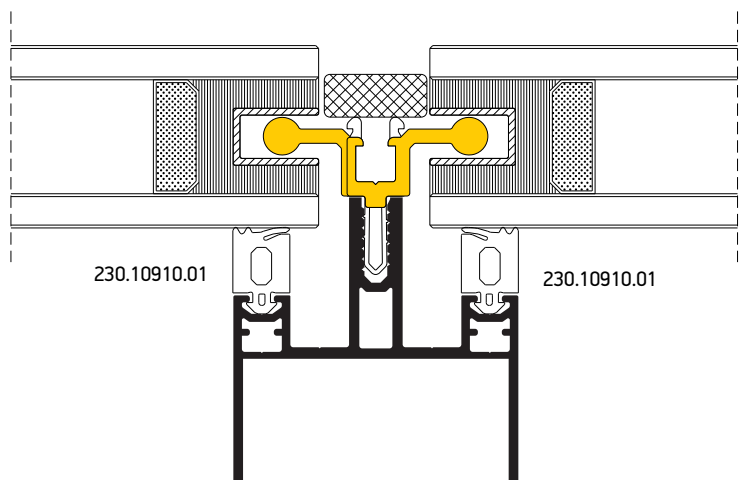
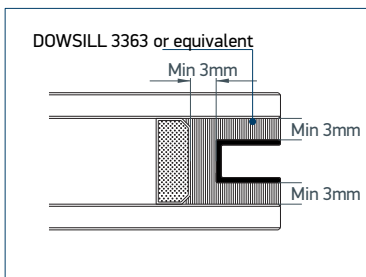
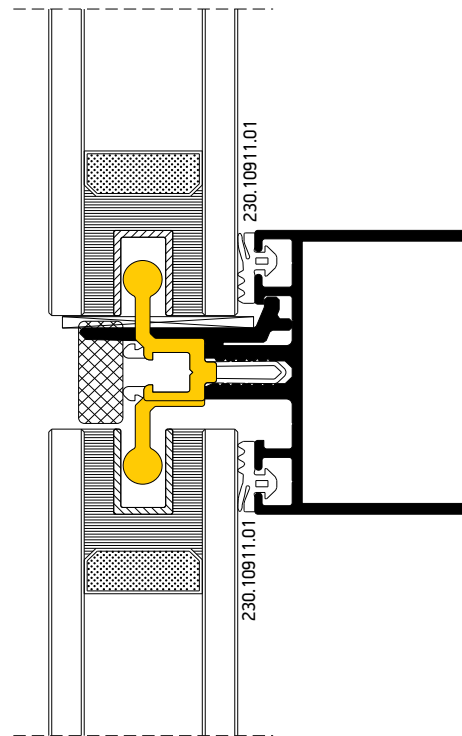
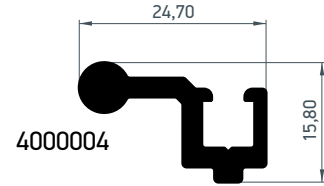
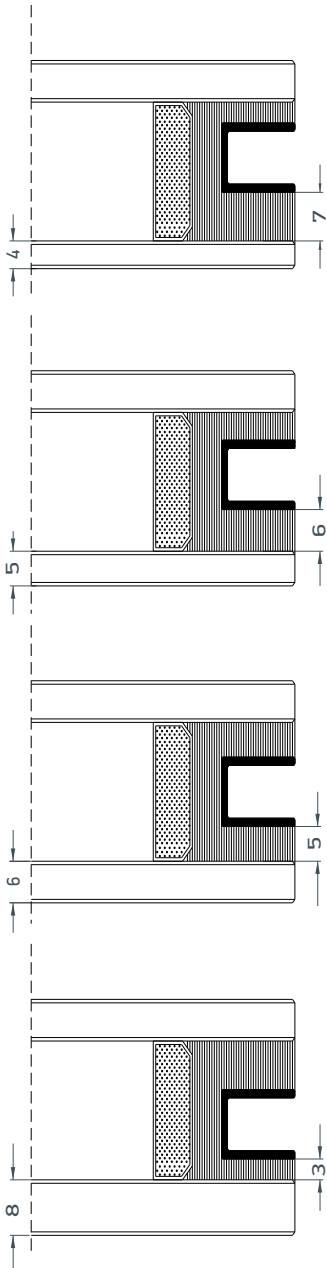
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4000023



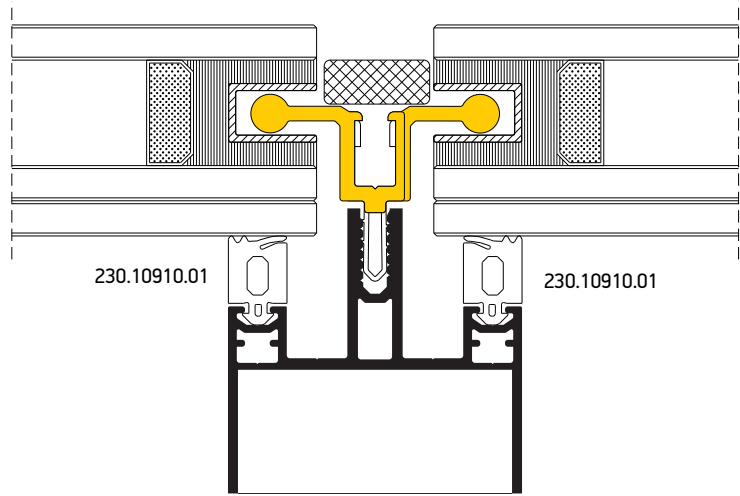
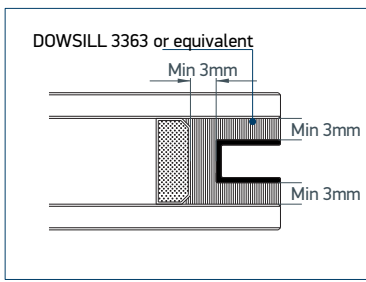
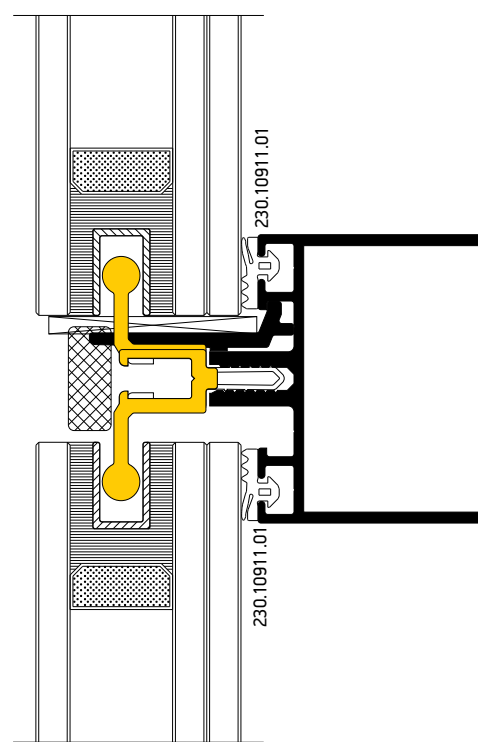
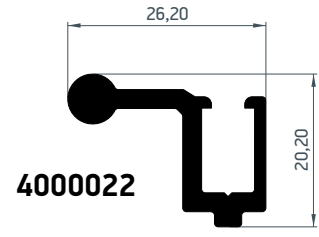
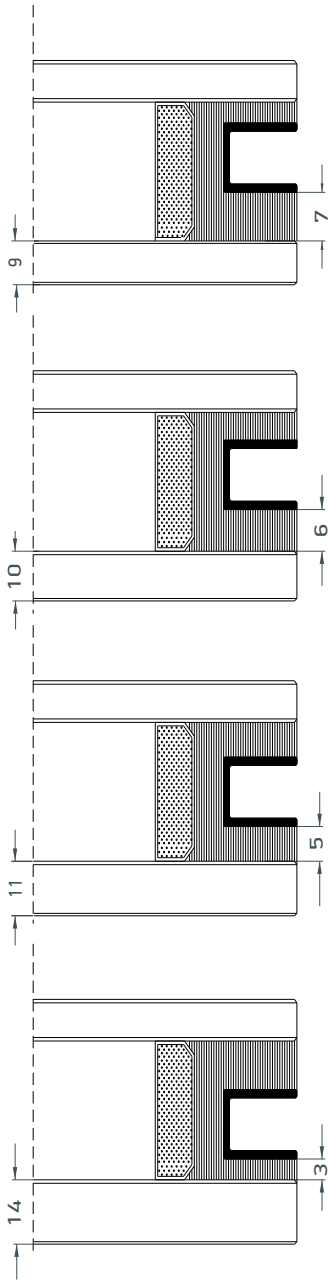
4mm - 8mm Inside Glazing



GLAZING	MULLION		TRANSOM				COMMON ARTICLES				
	INSIDE GASKET (1)	INSIDE GASKET (2)	GLASS SUPPORT (3)	WEDGE (4)	GLAZING SPACER (5)	GLASS FASTENER (6)	FASTENER SCREW (7)	PVC PROFILE (8)	OUTSIDE GASKET (9)		
30	230-10-910-03	230-10-911-03	M70026	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03		
31	230-10-910-03	230-10-911-03	M70026	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03		
32	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03		
33	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03		
34	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03		
35	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03		
36	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03		
37	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
38	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
39	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
40	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
41	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
42	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
43	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
44	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
45	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-105-03		
46	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03 + 720-18-105-03		
47	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03 + 720-18-105-03		
48	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03 + 720-18-105-03		
49	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03 + 720-18-105-03		
50	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03 + 720-18-105-03		
51	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	720-18-075-03 + 720-18-105-03		
52	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	770-30-607-00		
53	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	770-30-607-00		
54	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000004	798-12-255-25	720-10-910-03	770-30-607-00		

U10X15X1.2	Glass Perimeter
4000004	Glass Perimeter
798-12-255-25	Glass Perimeter
	1pcs/300 - Segment 70mm - Edge 85mm
	2pcs per Fastener

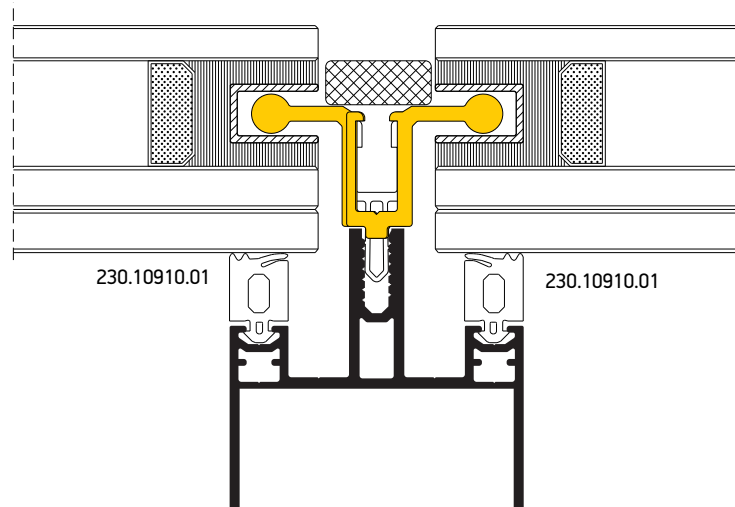
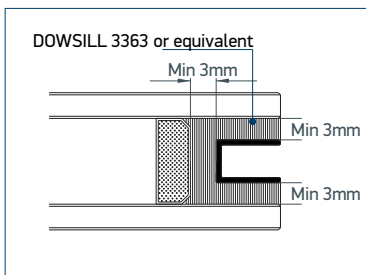
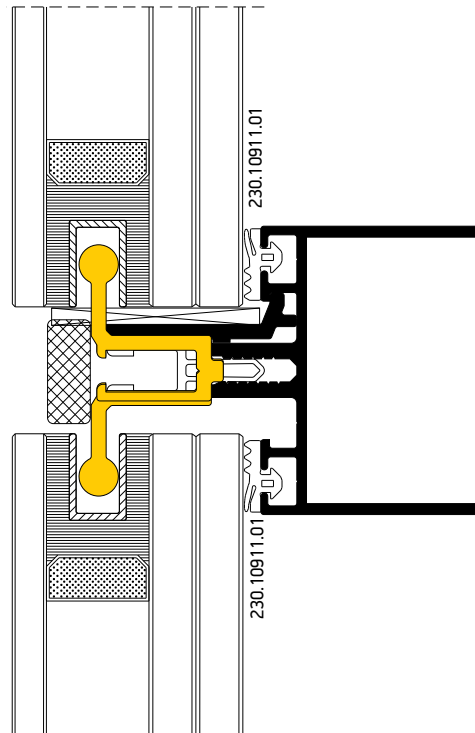
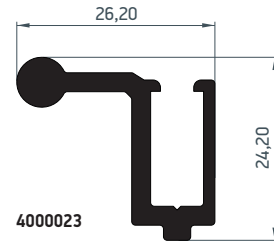
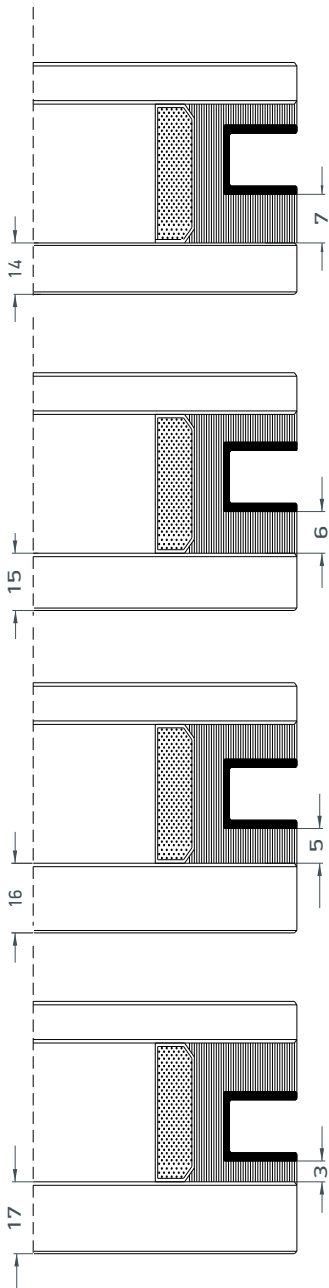
9mm - 13mm Inside Glazing



GLAZING	MULLION			TRANSOM				COMMON ARTICLES					
	INSIDE GASKET (1)	INSIDE GASKET (2)	GLASS SUPPORT (3)	WEDGE (4)	GLAZING SPACER (5)	GLASS FASTENER (6)	FASTENER SCREW (7)	PVC PROFILE (8)	OUTSIDE GASKET (9)				
34	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03				
35	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03				
36	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03				
37	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
38	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
39	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
40	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
41	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
42	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03				
43	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
44	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
45	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
46	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
47	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-105-03				
48	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03 + 720-18-105-03				
49	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03 + 720-18-105-03				
50	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03 + 720-18-105-03				
51	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	720-18-075-03 + 720-18-105-03				
52	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	770-30-607-00				
53	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	770-30-607-00				
54	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000022	798-12-255-32	720-10-910-03	770-30-607-00				

U10X15X1.2	Glass Perimeter
4000022	Glass Perimeter
798-12-255-25	Glass Perimeter
1pcs/300 - Segment 70mm - Edge 85mm	
2pcs per Fastener	

14mm - 17mm Inside Glazing

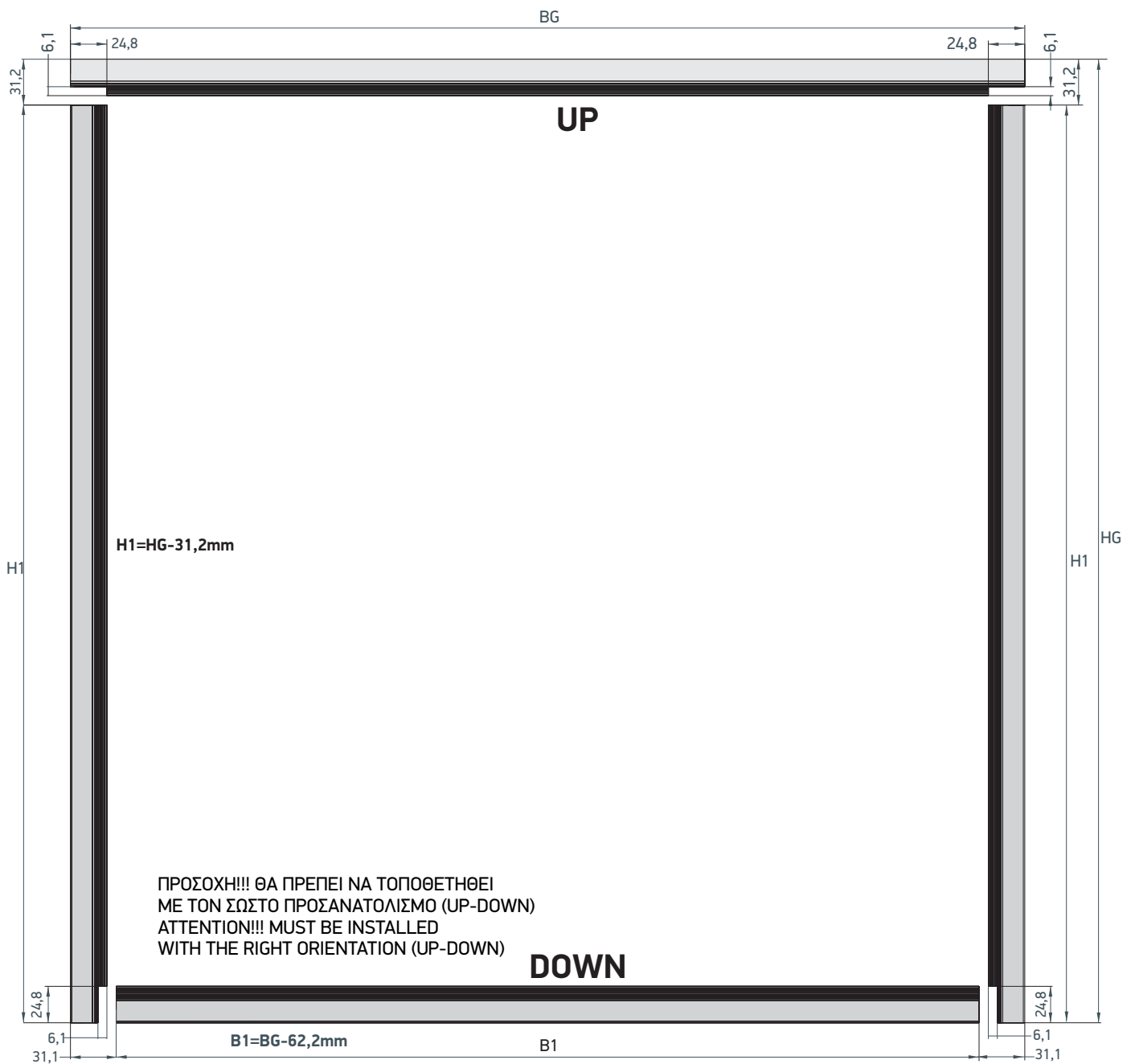
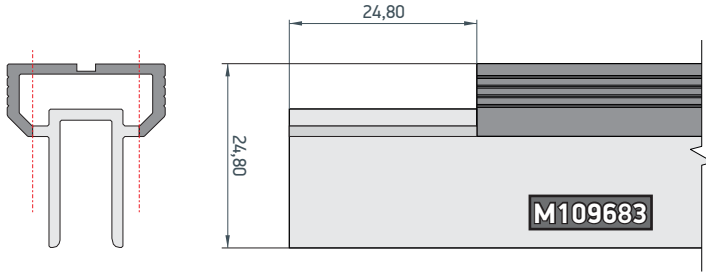


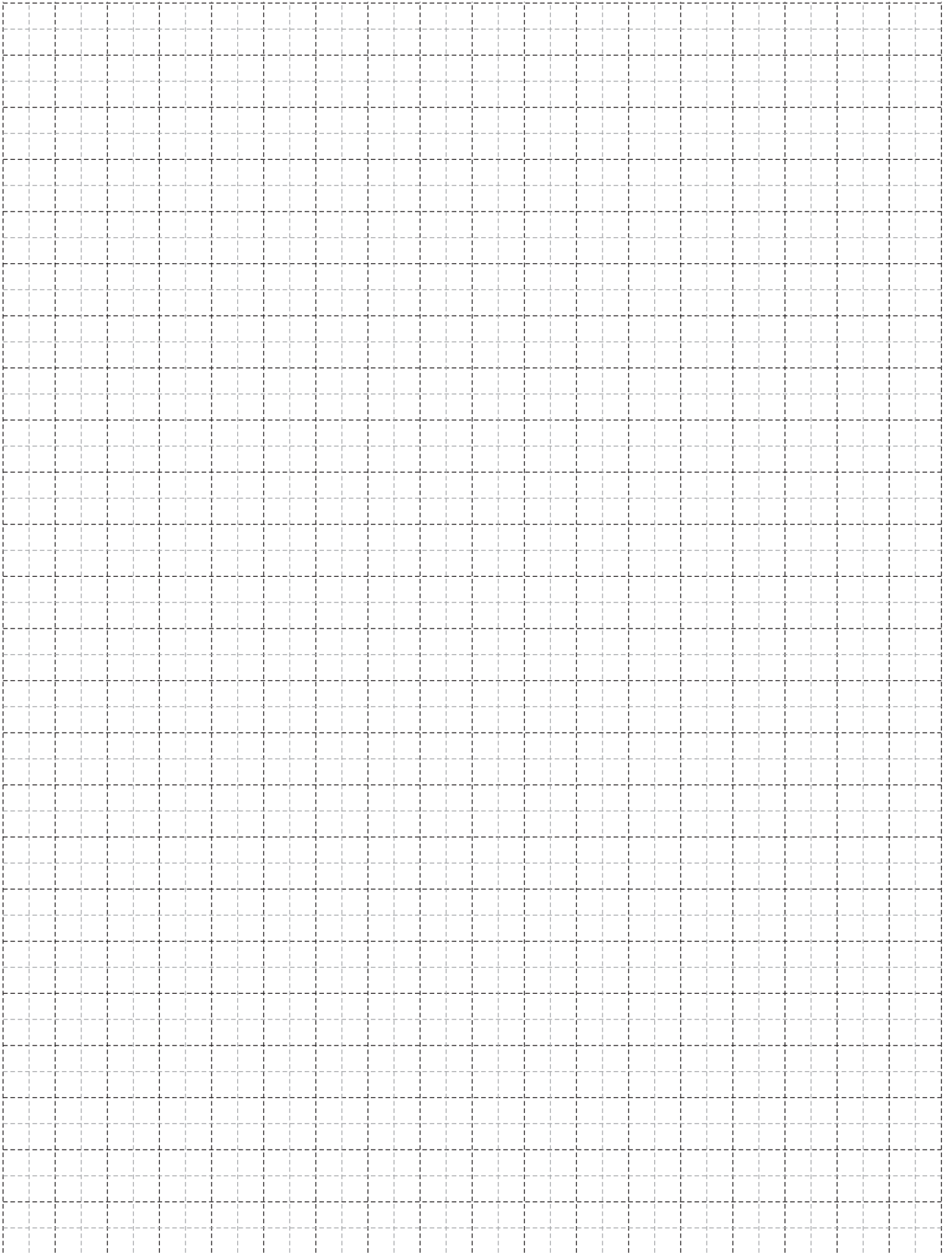
MULLION		TRANSOM			COMMON ARTICLES								
GLAZING	INSIDE GASKET (1)	INSIDE GASKET (2)	GLASS SUPPORT (3)	WEDGE (4)	GLAZING SPACER (5)	GLASS FASTENER (6)	FASTENER SCREW (7)	PVC PROFILE (8)	OUTSIDE GASKET (9)				
38	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
39	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
40	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
41	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
42	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
43	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
44	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
45	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
46	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
47	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-075-03				
48	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-105-03				
49	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-105-03				
50	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-105-03				
51	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-105-03				
52	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-105-03				
53	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-105-03				
54	230-10-910-03	230-10-911-03	M70049	290-00-002-00	U10X15X1.2	4000023	798-12-255-32	720-10-600-00	720-18-105-03				

U10X15X1.2	Glass Perimeter
4000023	Glass Perimeter 1pcs/300 - Segment 70mm - Edge 85mm
798-12-255-32	Glass Perimeter 2pcs per Fastener

Cuttings for M109683

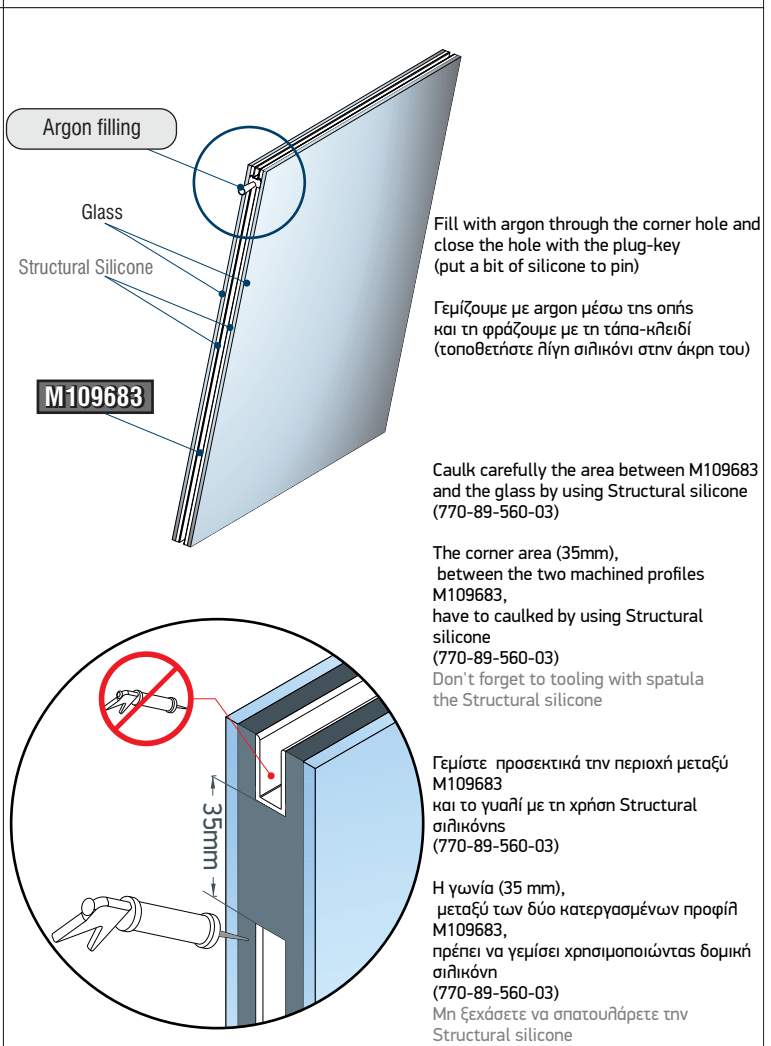
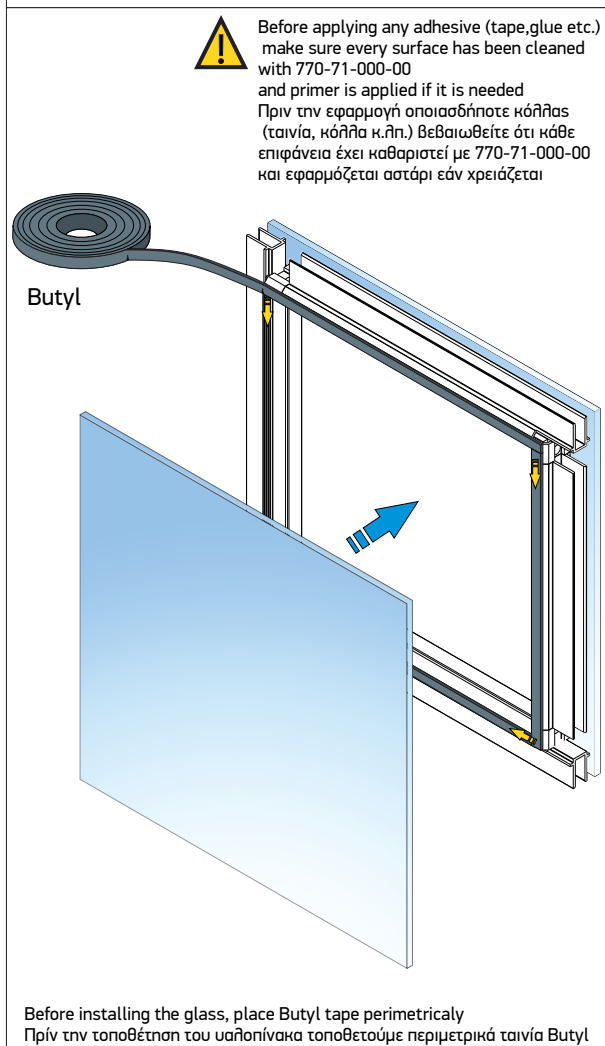
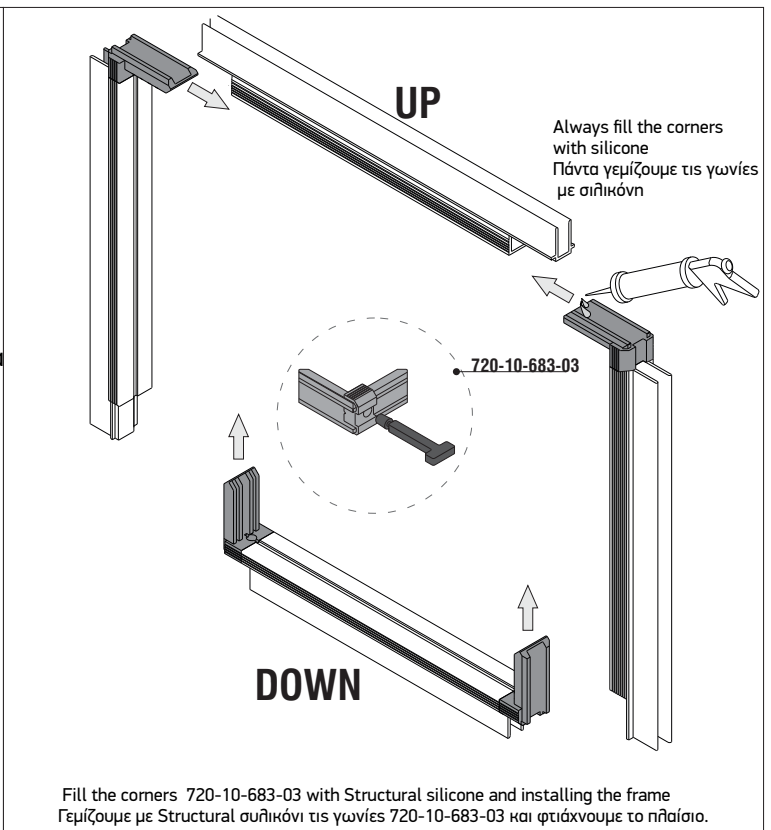
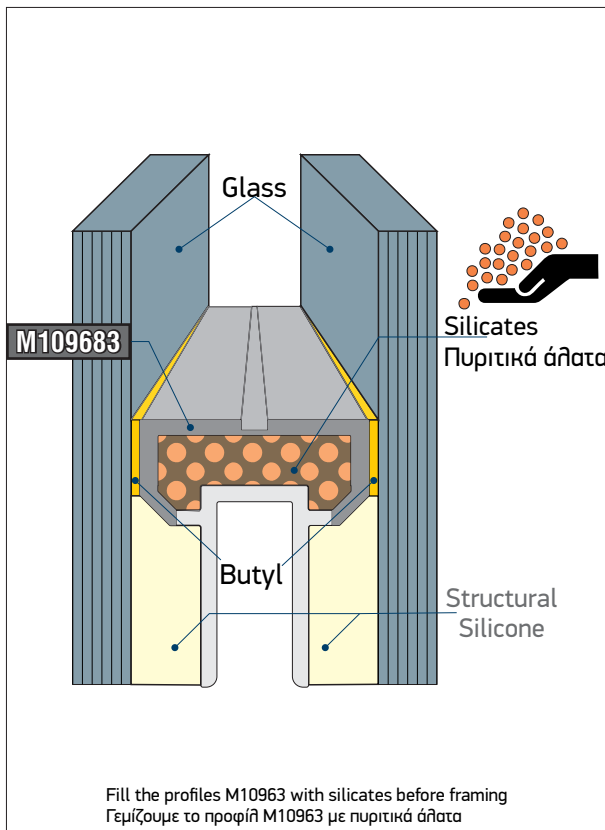
M109683







ΠΑΡΑΘΥΡΑ
WINDOWS

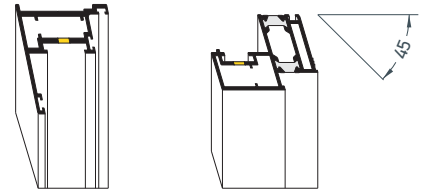
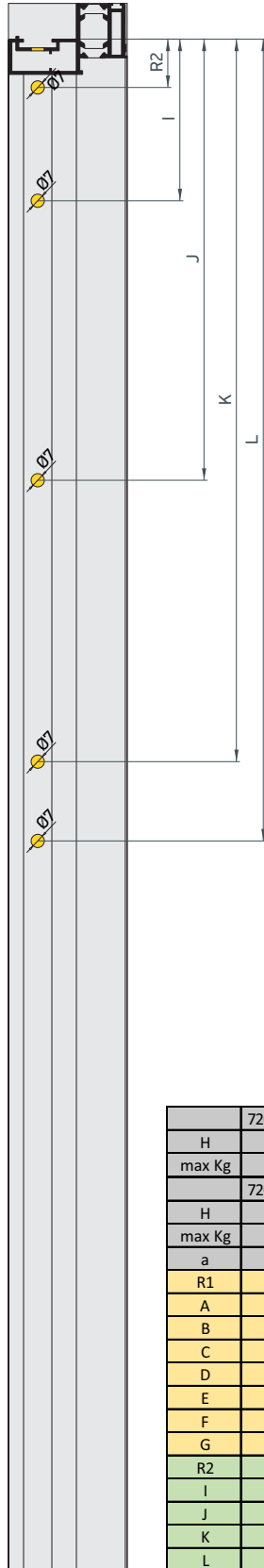


Standard curtain wall stay arms installation

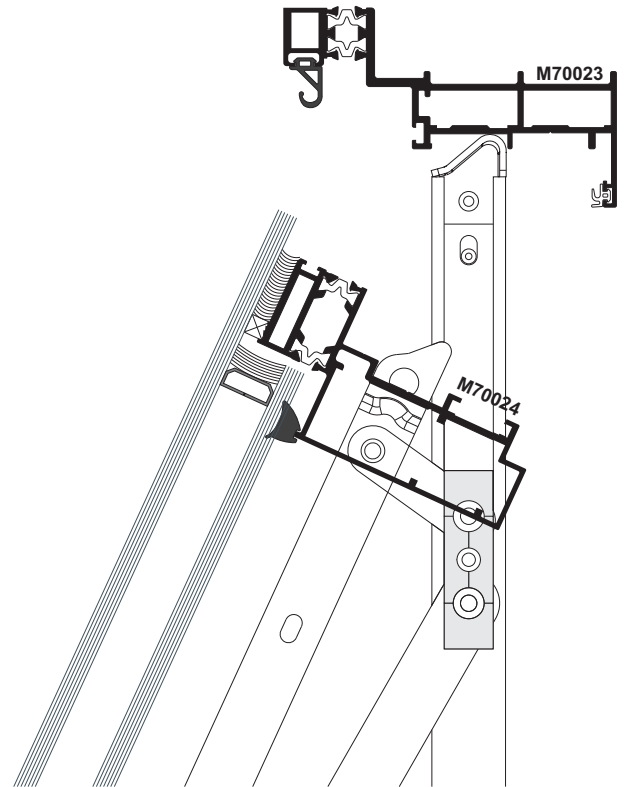
Frame jambs



Sash jambs



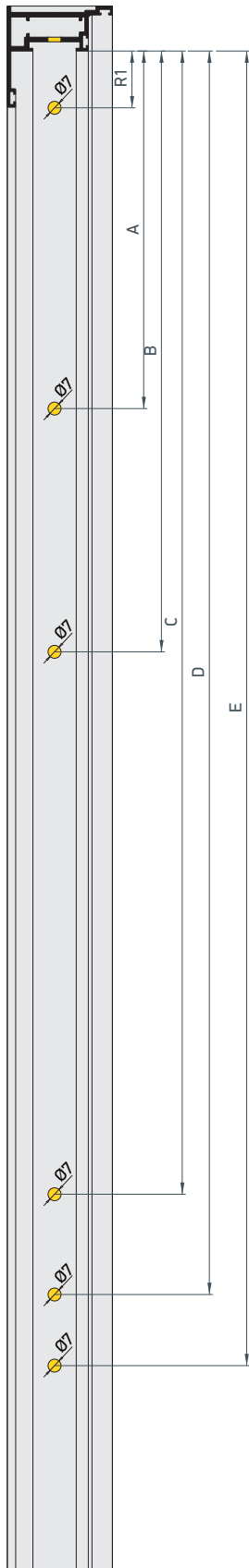
Frame jambs 45° Sash jambs 45°



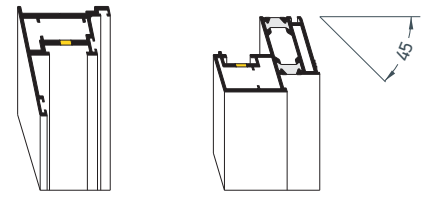
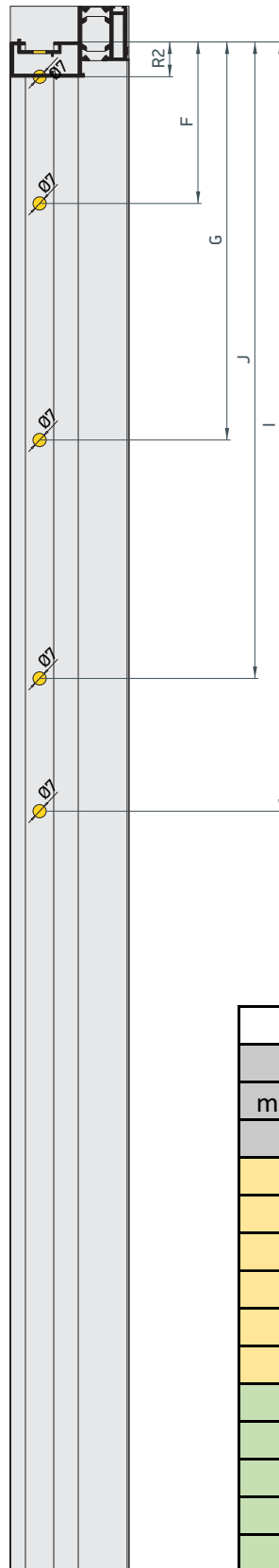
	720-32-501-00	720-32-502-00	720-32-503-00	720-13-250-00	720-32-506-00	720-03-250-00
H	1000	1200	1400	1600	1800	2000
max Kg	65	85	100	110	120	130
	720-32-501-00	720-32-502-00	720-32-503-00	720-13-250-00	720-32-506-00	720-03-250-00
H	1000	1200	1400	1600	1800	2000
max Kg	65	85	100	110	120	130
a	30/35	25/30	25/30	20/25	15/20	15/20
R1	31	31	31	31	31	31
A	177,5	170	177	158,5	166	174
B	201,5	203	210	188,5	195	206
C	243	244,5	251,5	312	401,5	499,5
D	299	361	406	459,5	549	647
E	344	405	450	504	594	699
F	386,5	447,5	492,5	546,5	636,5	741,5
G	396,5	457,5	502,5	556,5	646,5	751,5
R2	26	26	26	26	26	26
I	86	86	86	86	86	86
J	145	187	213	246	309	383
K	187	229	255	288	351	425
L	-	-	-	-	-	234

Heavy duty curtain wall stay arms installation

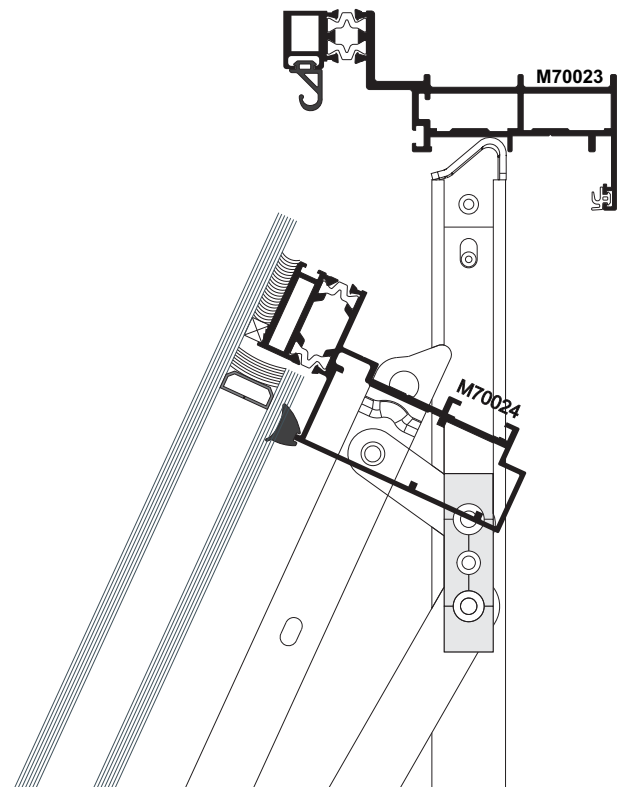
Frame jambs



Sash jambs

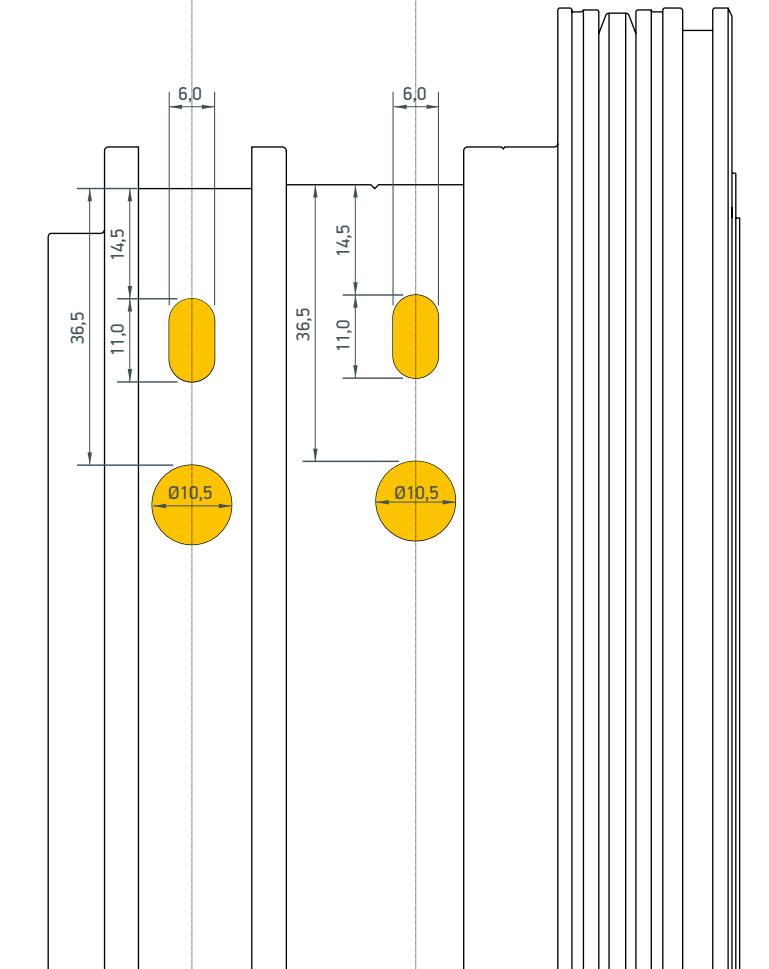
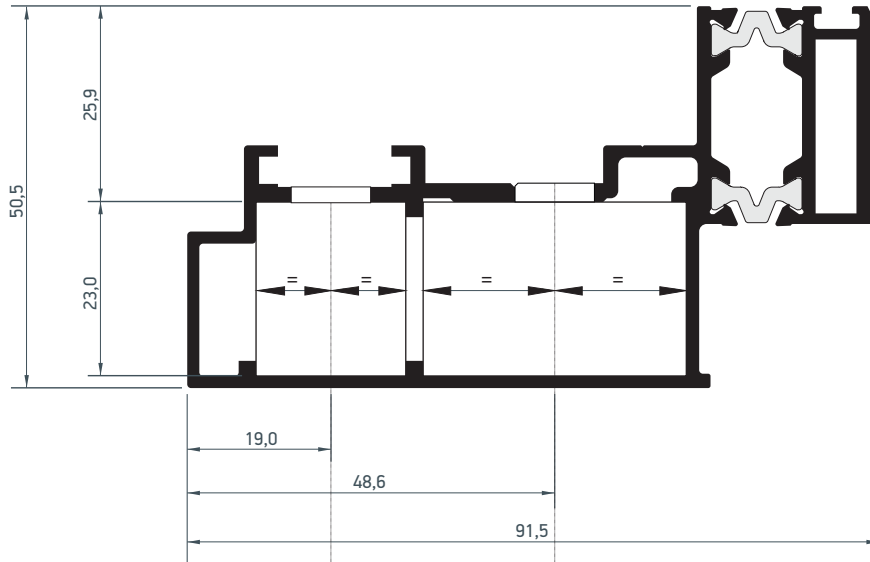


Frame jambs 45° Sash jambs 45°

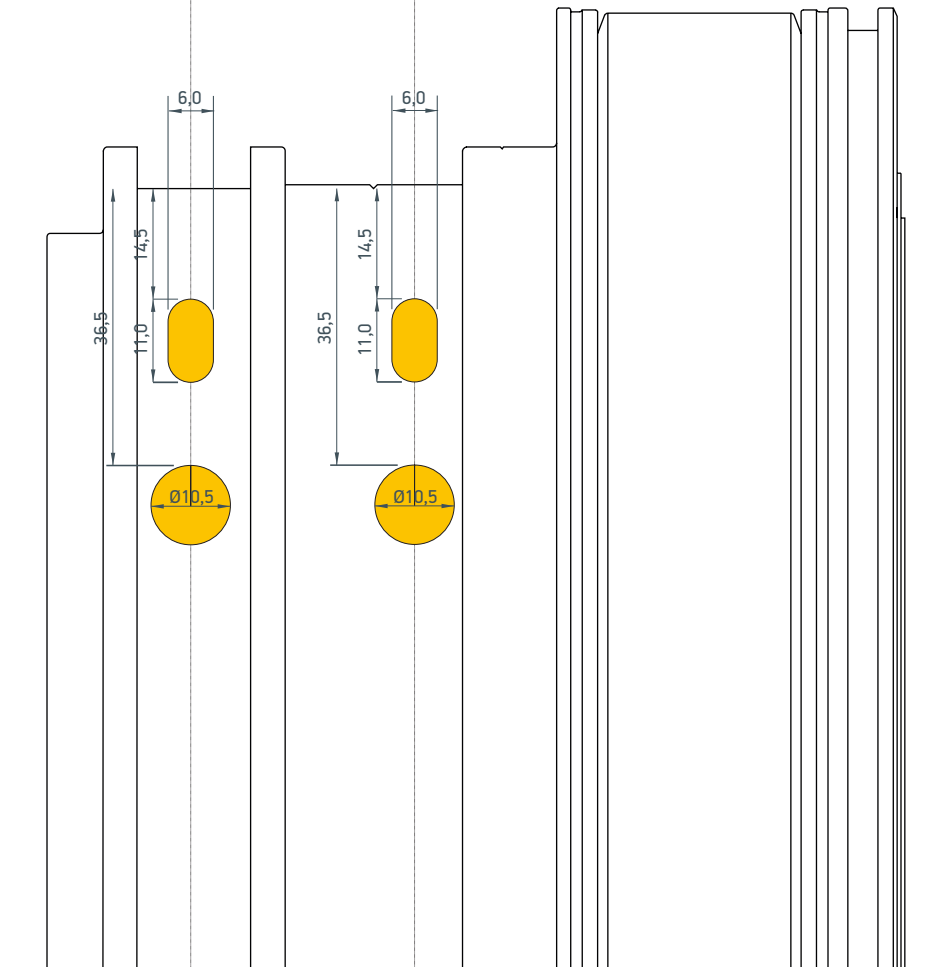
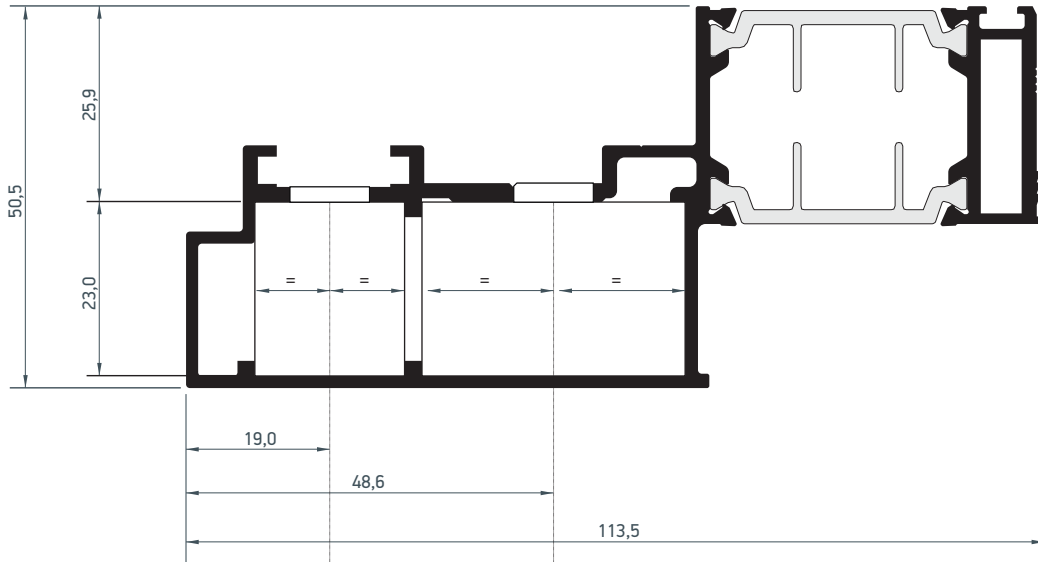


	350-50-168-00	350-51-228-00	350-51-268-00
H	415	567	680
max Kg	100	100	180
a	30	45	20
R1	31,1	31,1	31,1
A	164,8	-	192,5
B	253,1	326,5	323,5
C	-	-	615,6
D	401,7	557,6	669,6
E	440	595,9	707,9
R2	18,8	18,8	18,8
F	137,2	98,8	83,8
G	-	-	207,8
I	-	254,6	333,2
J	260	368,8	402,7

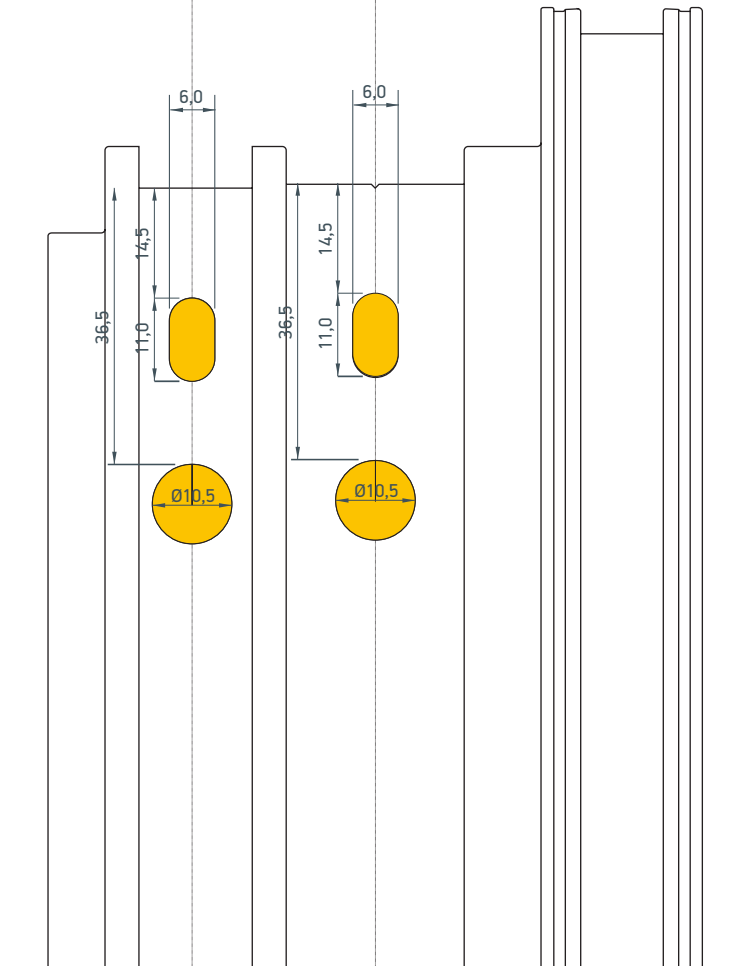
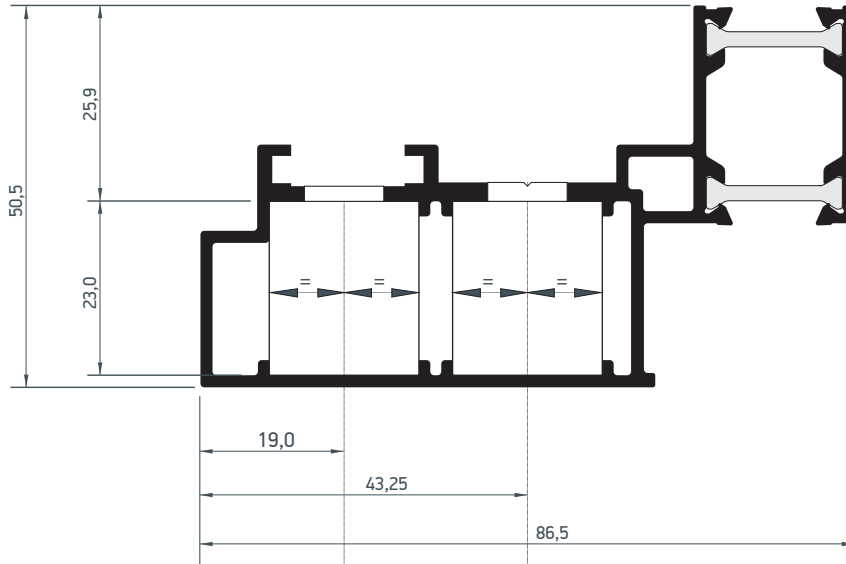
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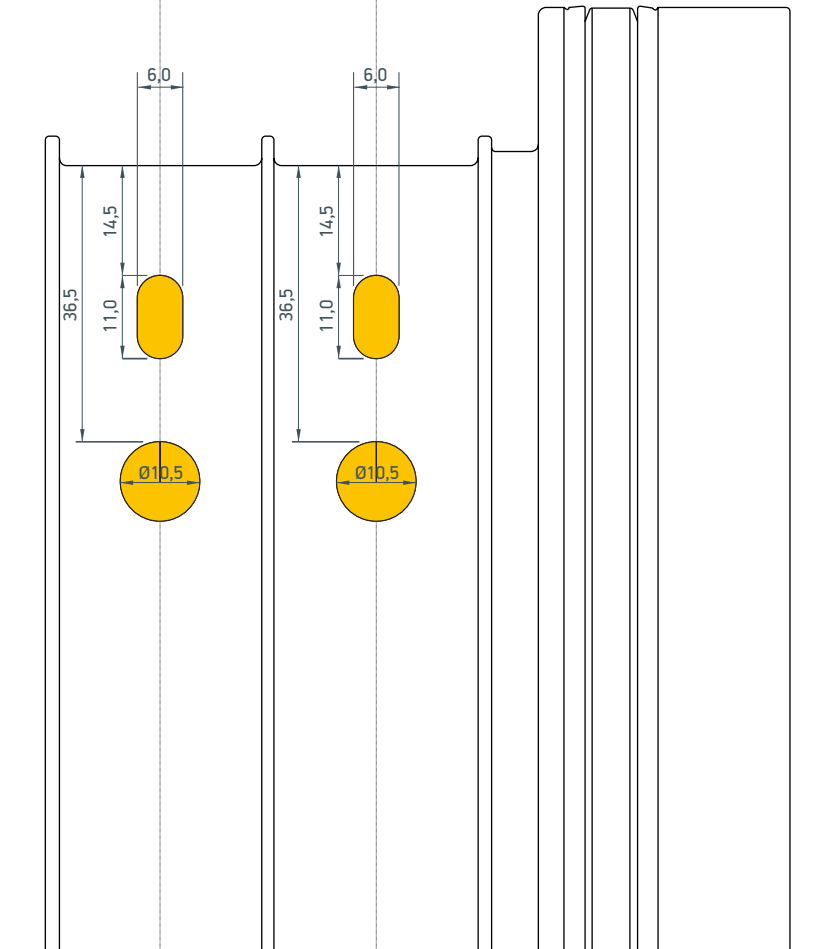
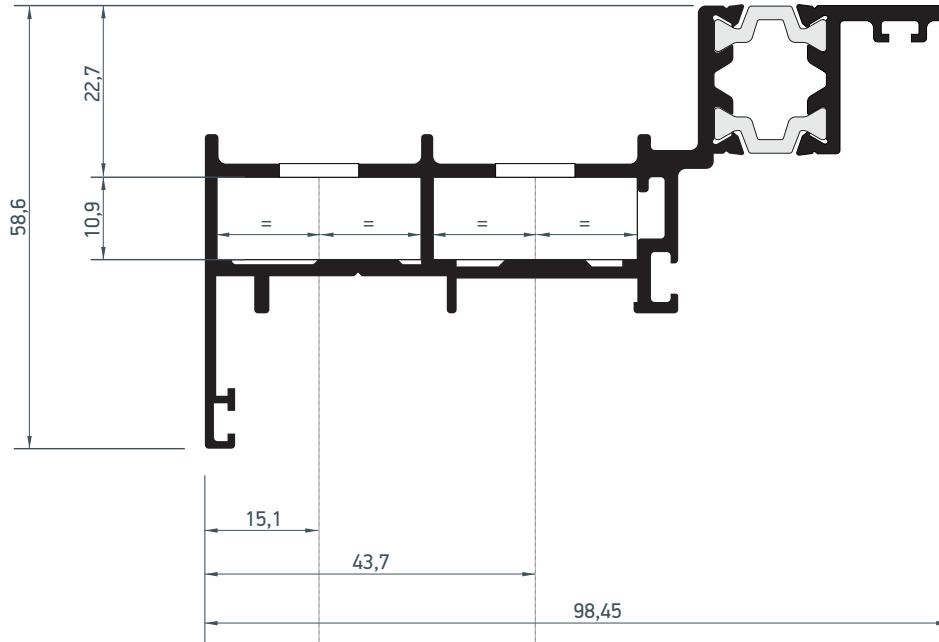
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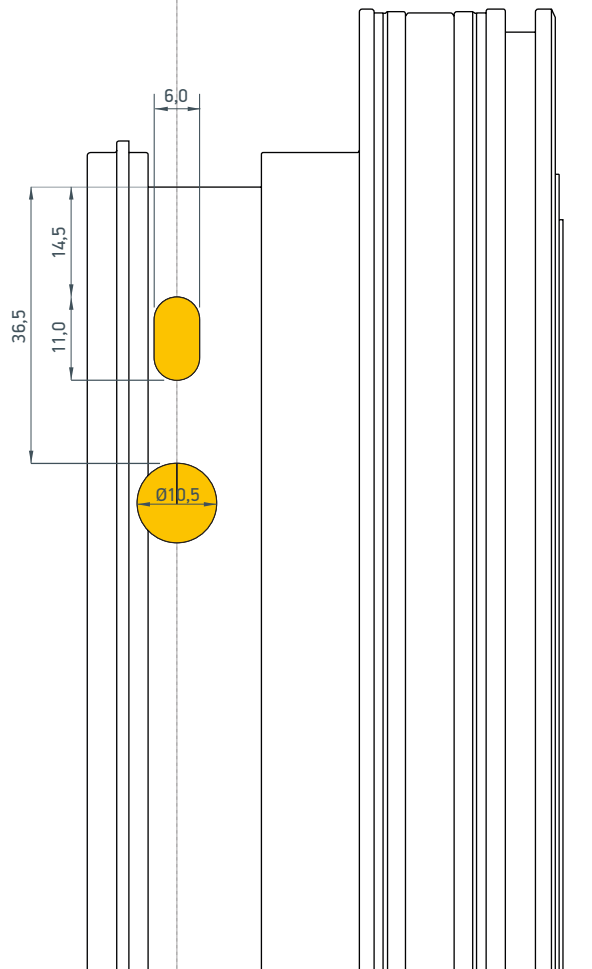
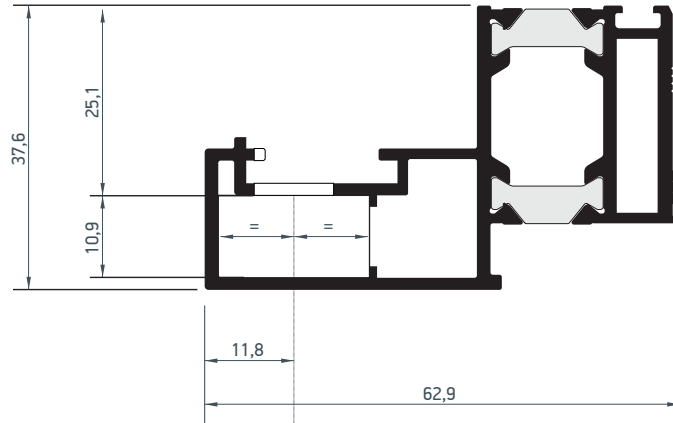
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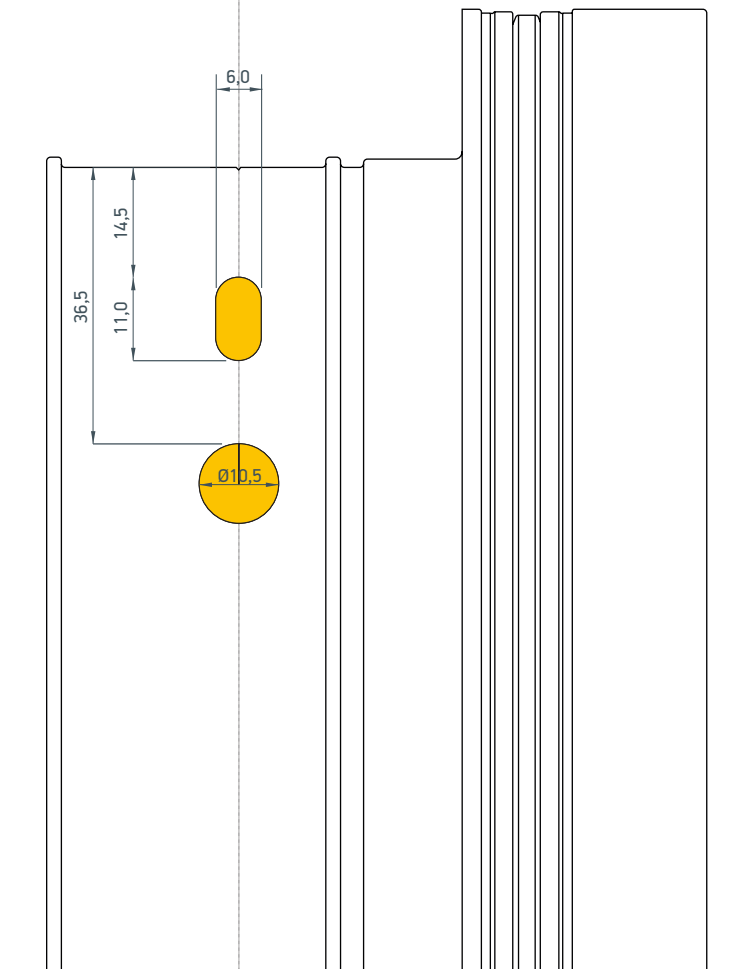
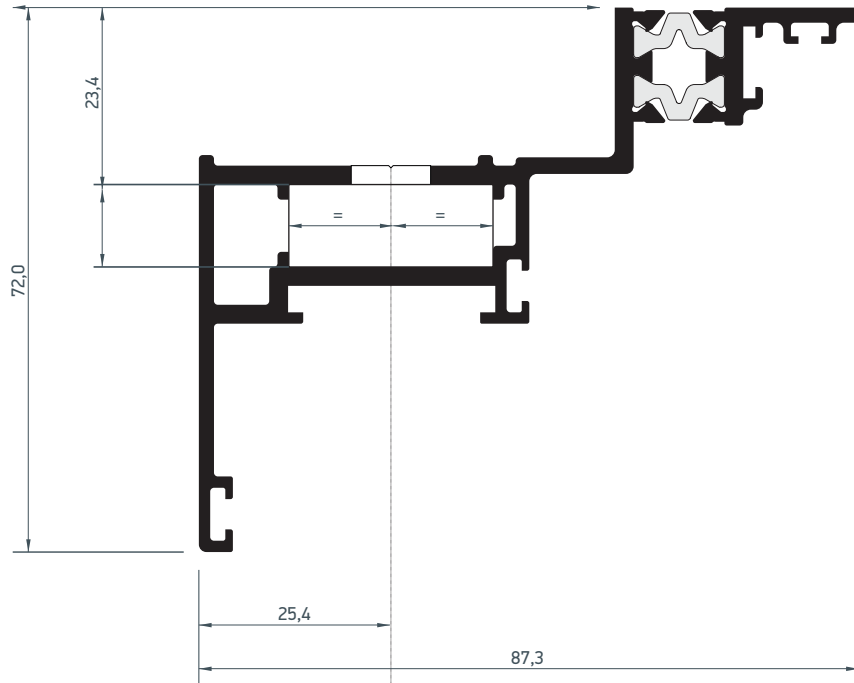
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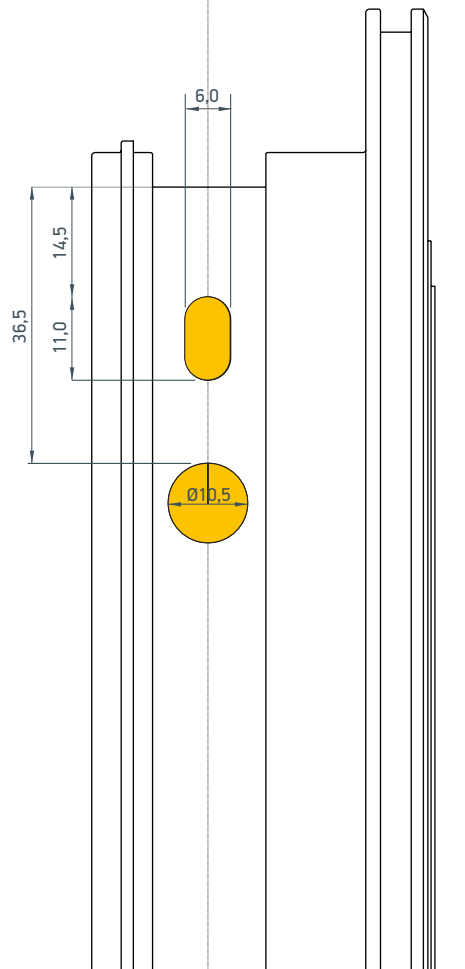
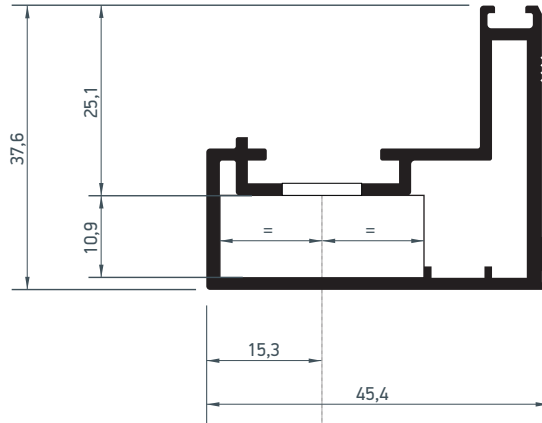
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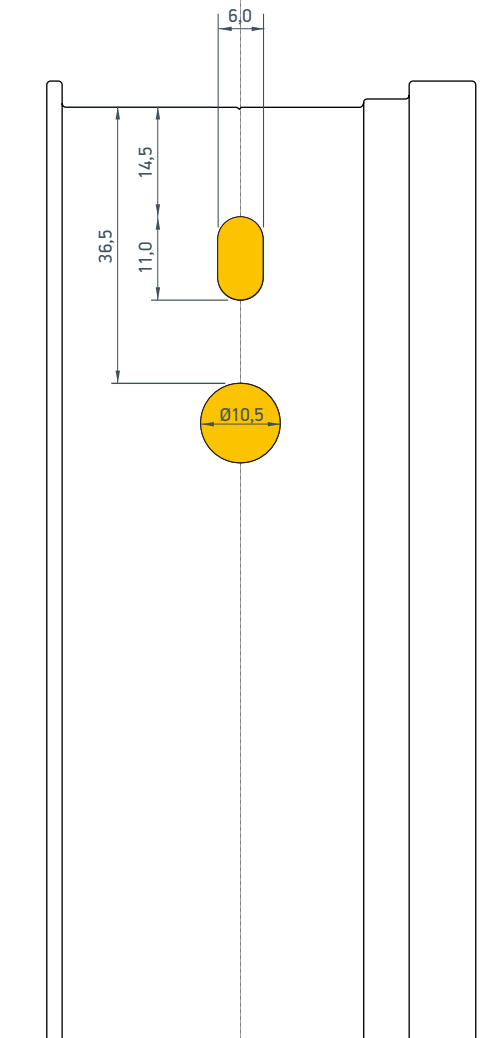
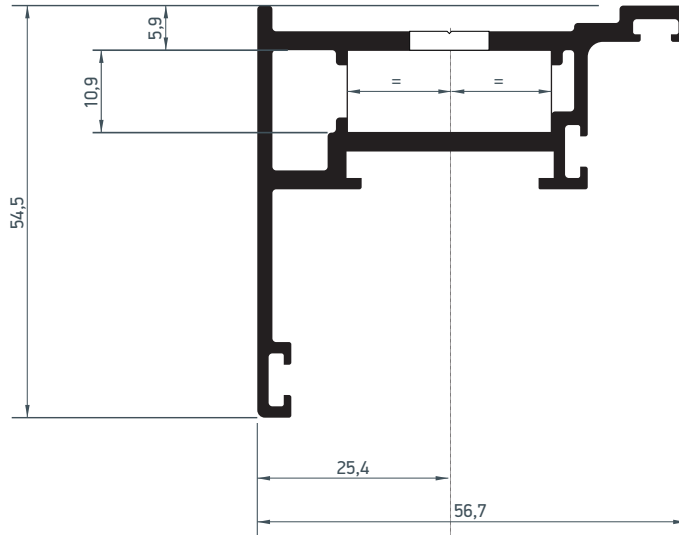
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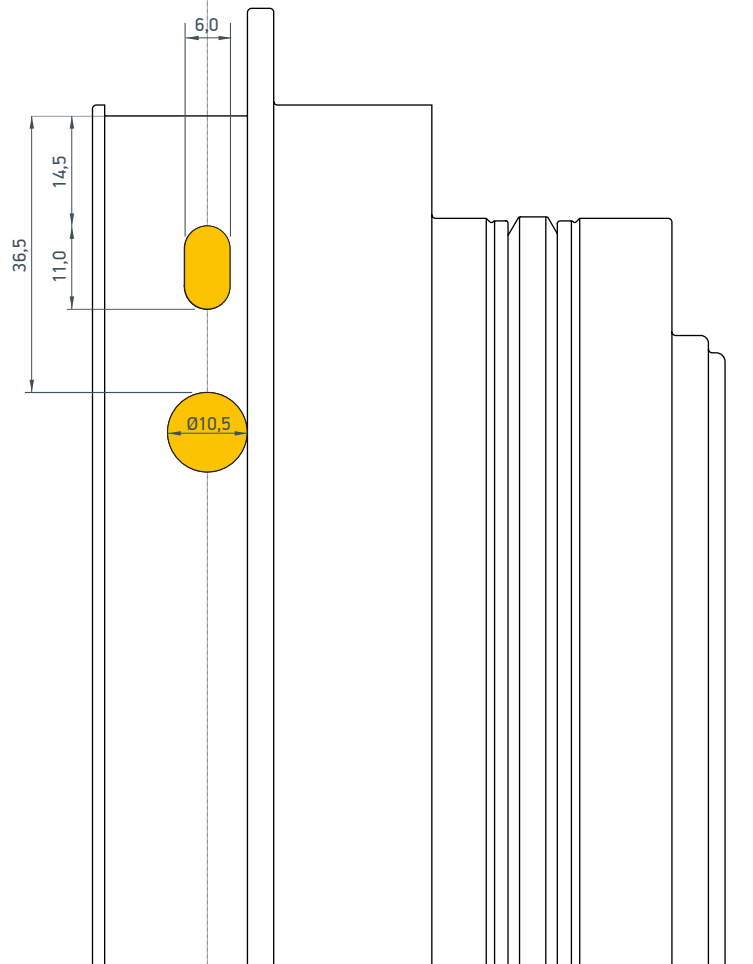
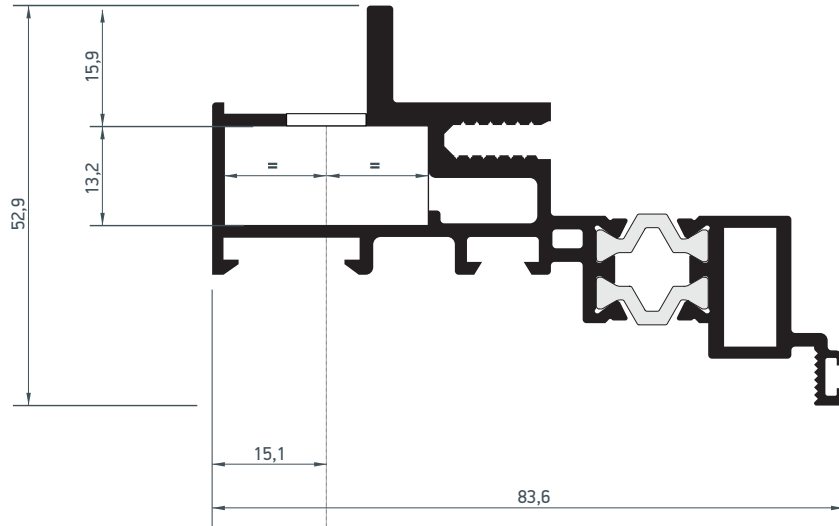
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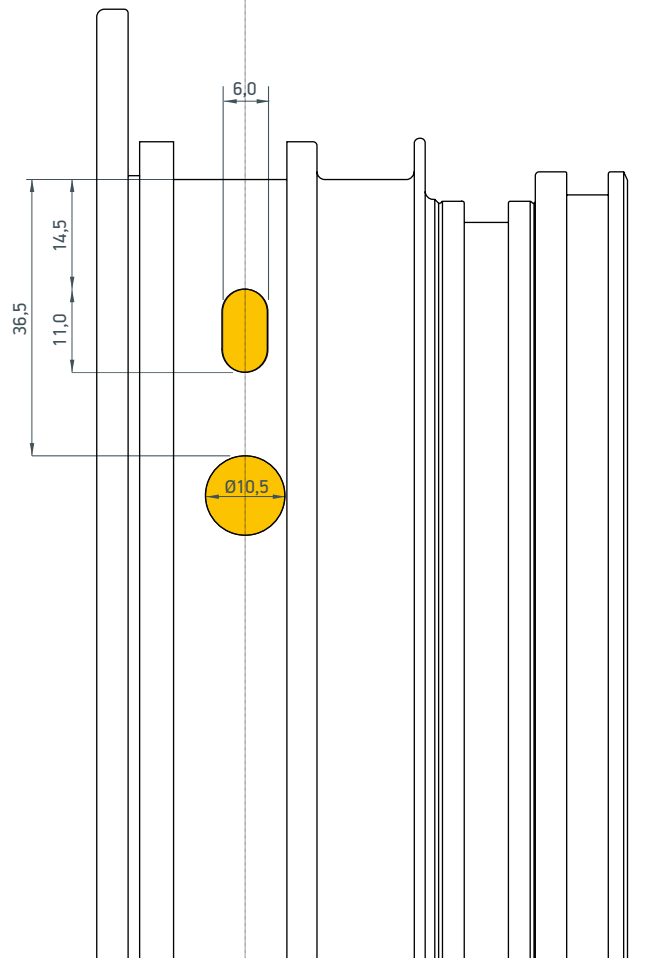
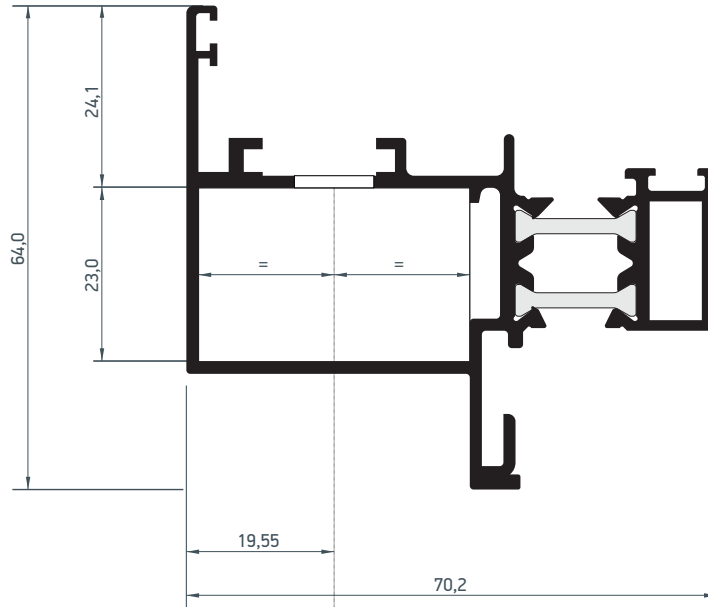
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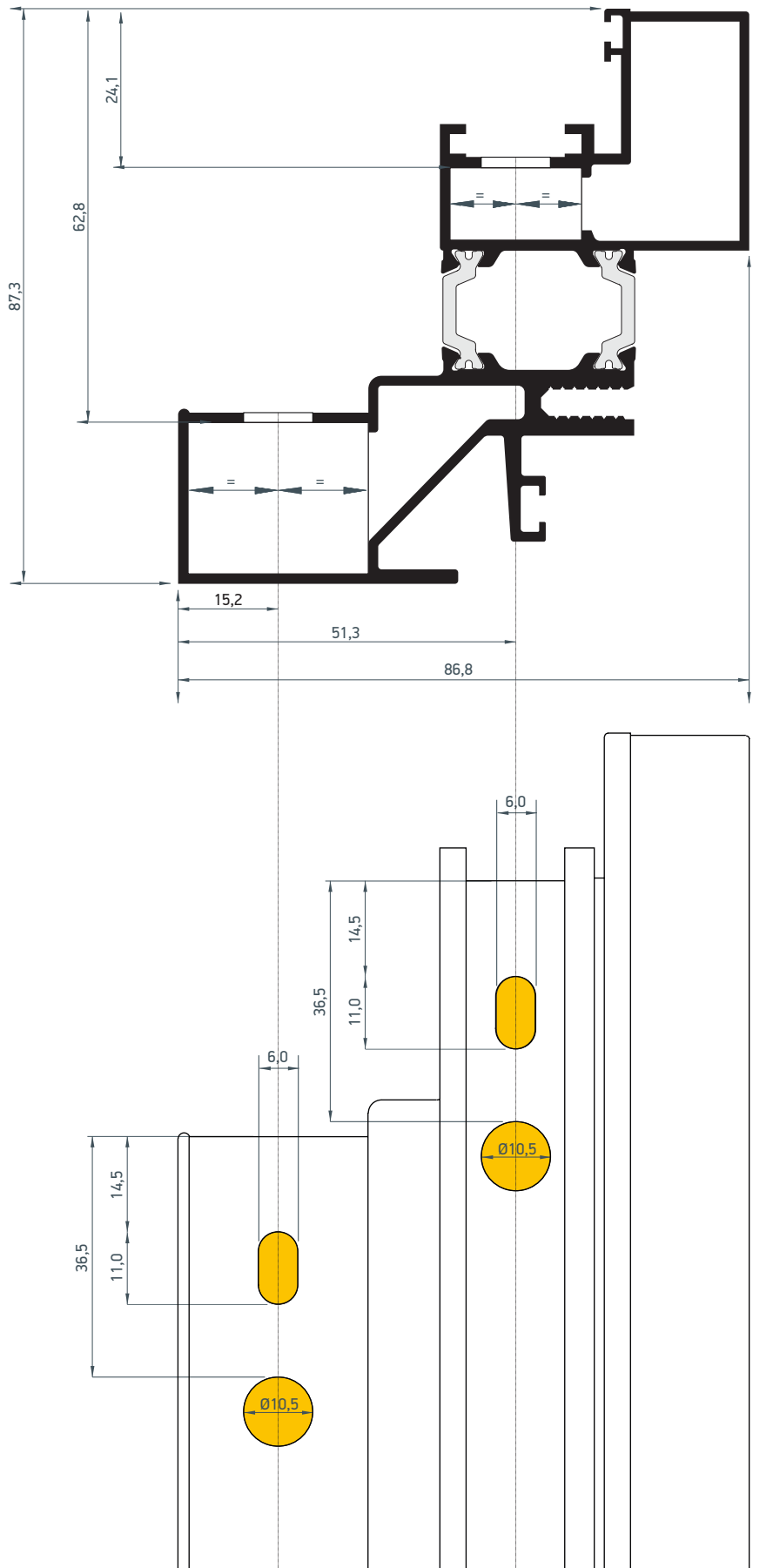
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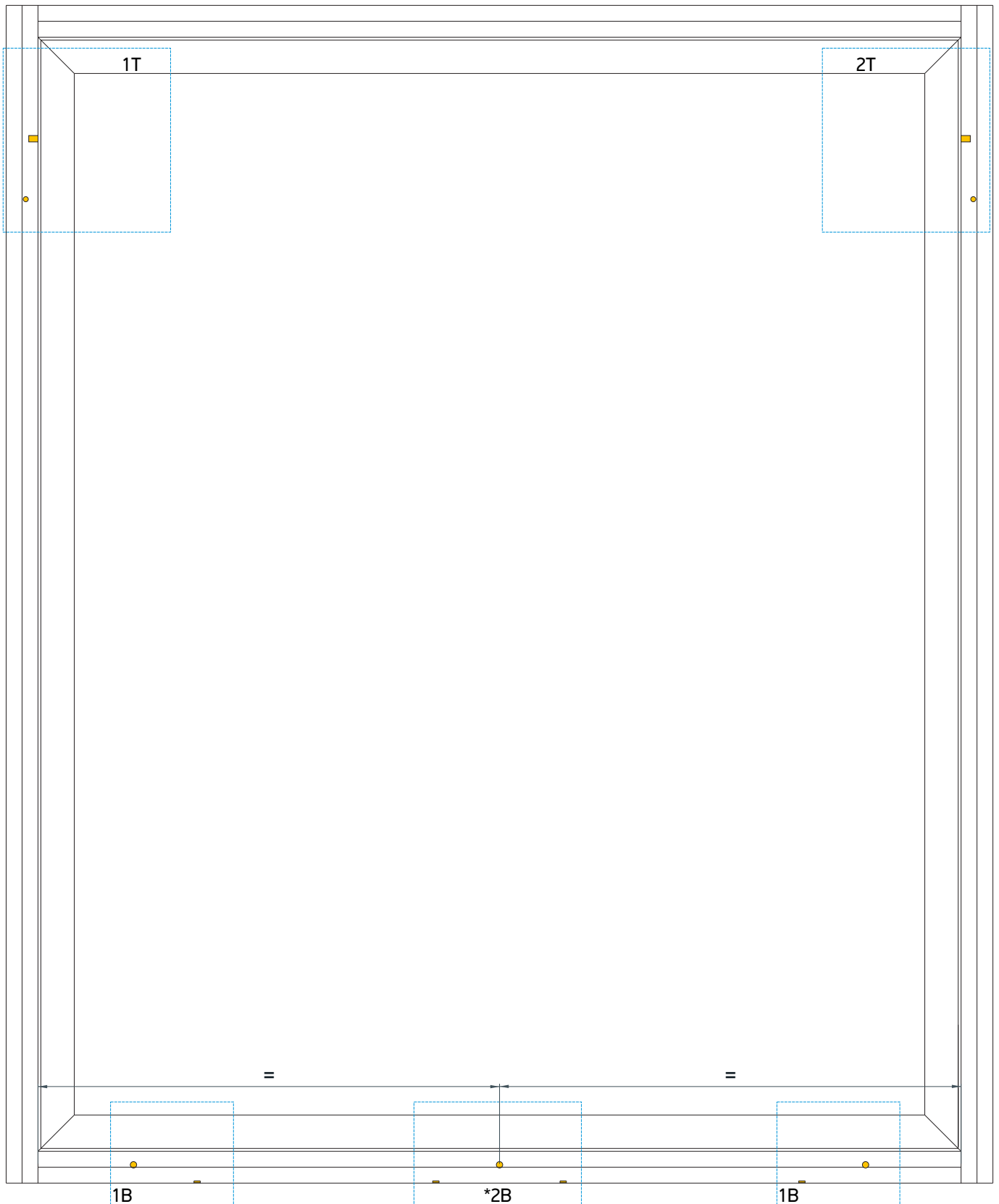


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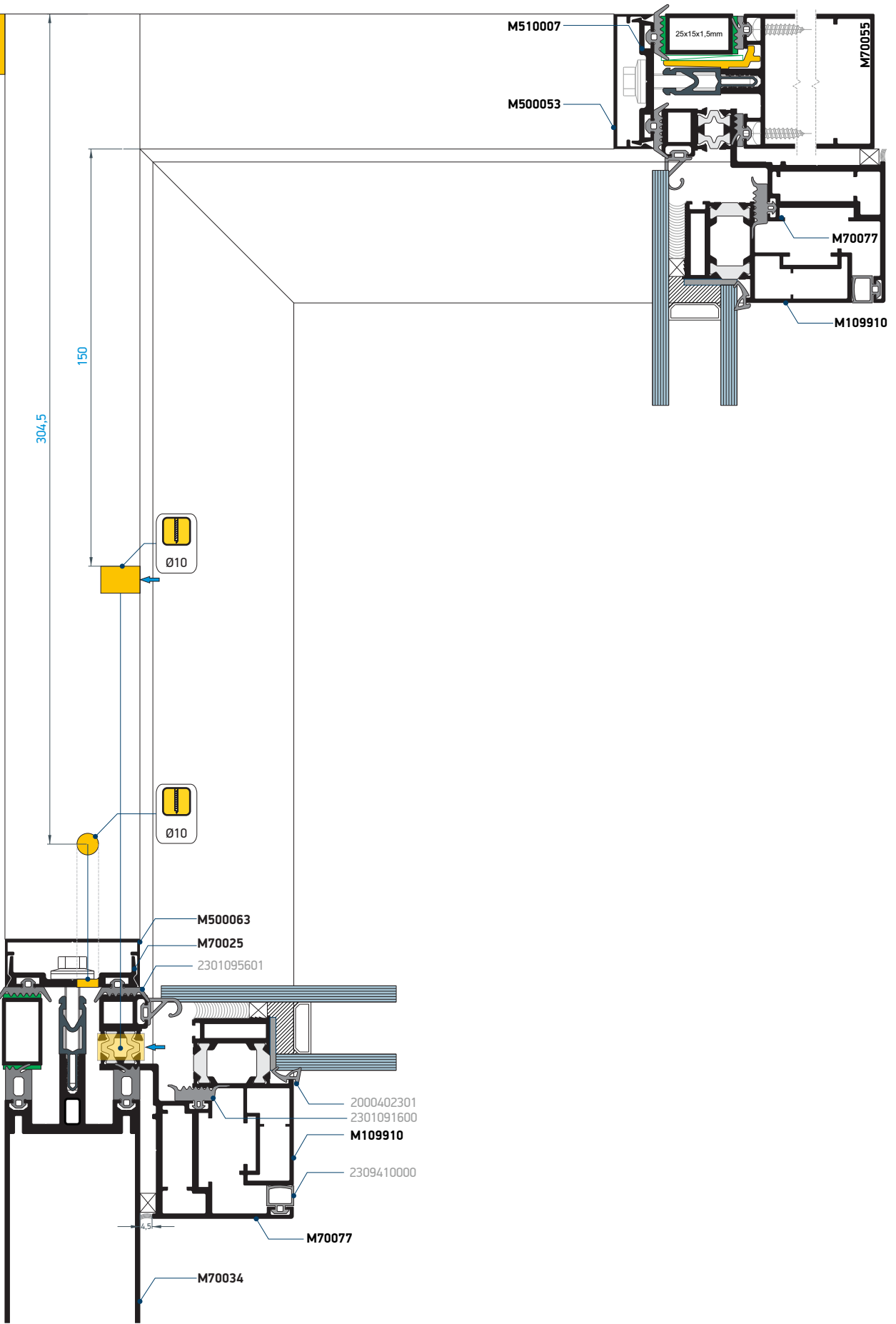
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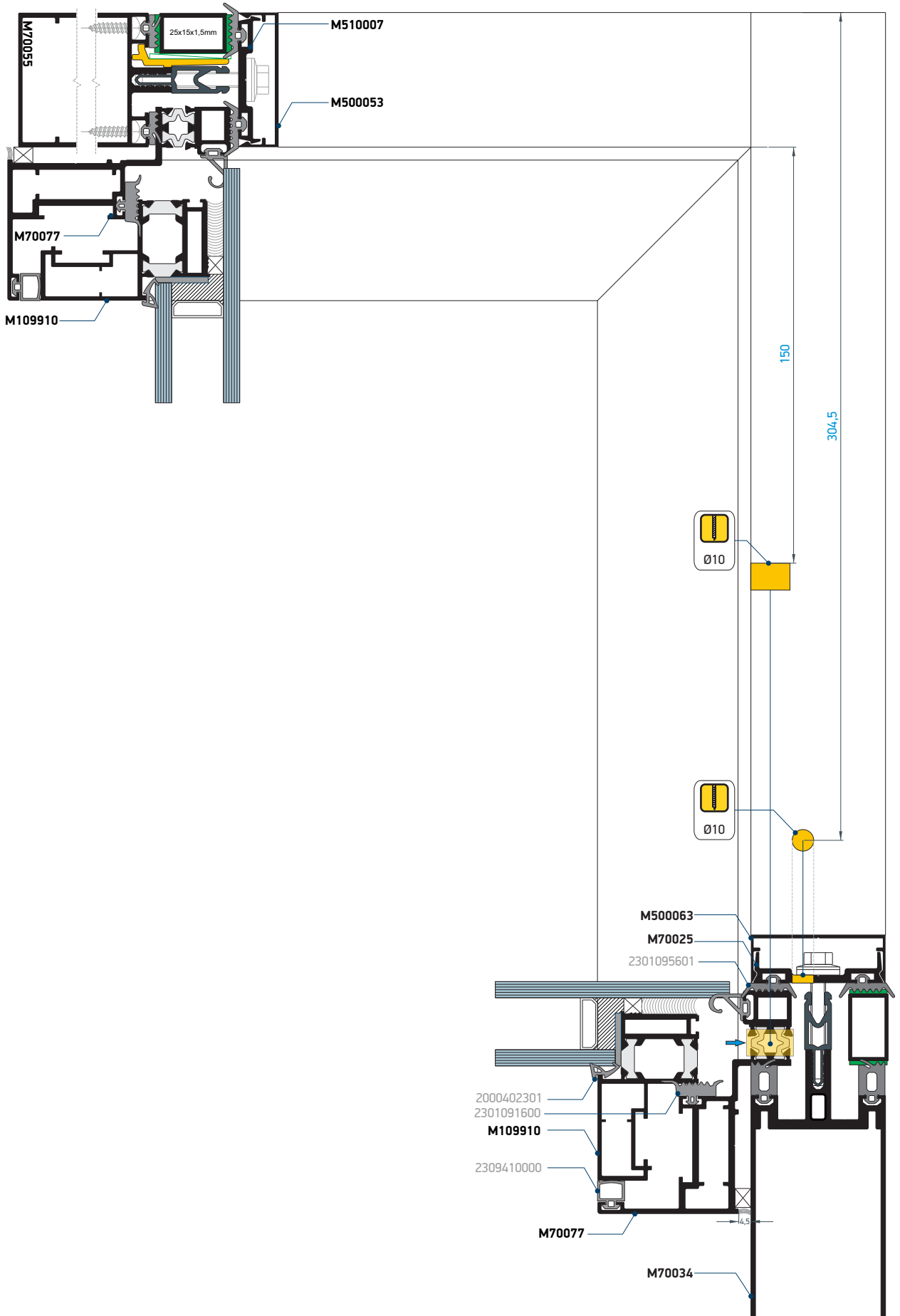


*Η κατεργασία 1B ανοίγεται στο σημείο 2B όταν η συνολική διάσταση της τραβέρσας είναι μεγαλύτερη από 1500mm
*The milling 1B opens at point 2B when the overall dimension of the transom is greater than 1500mm.

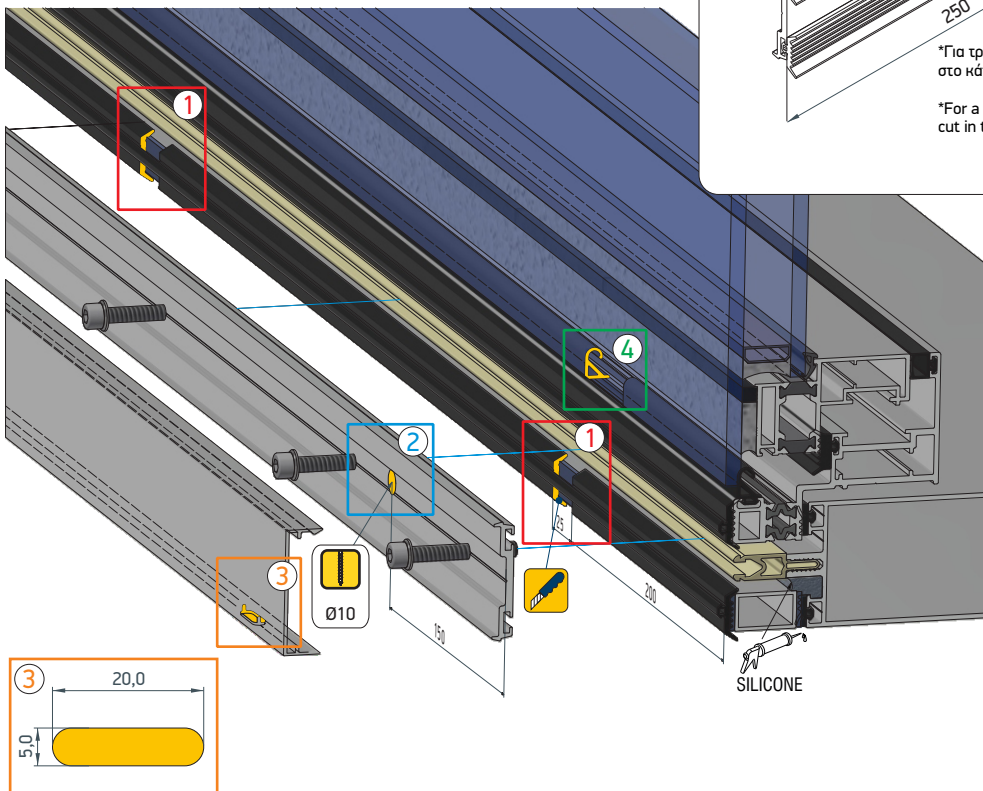
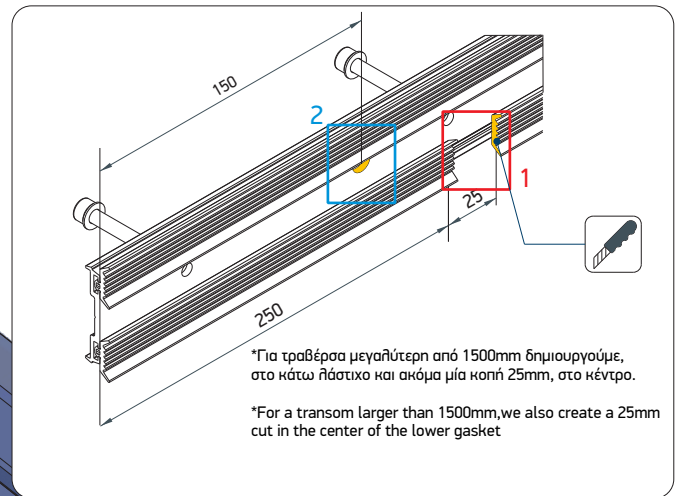
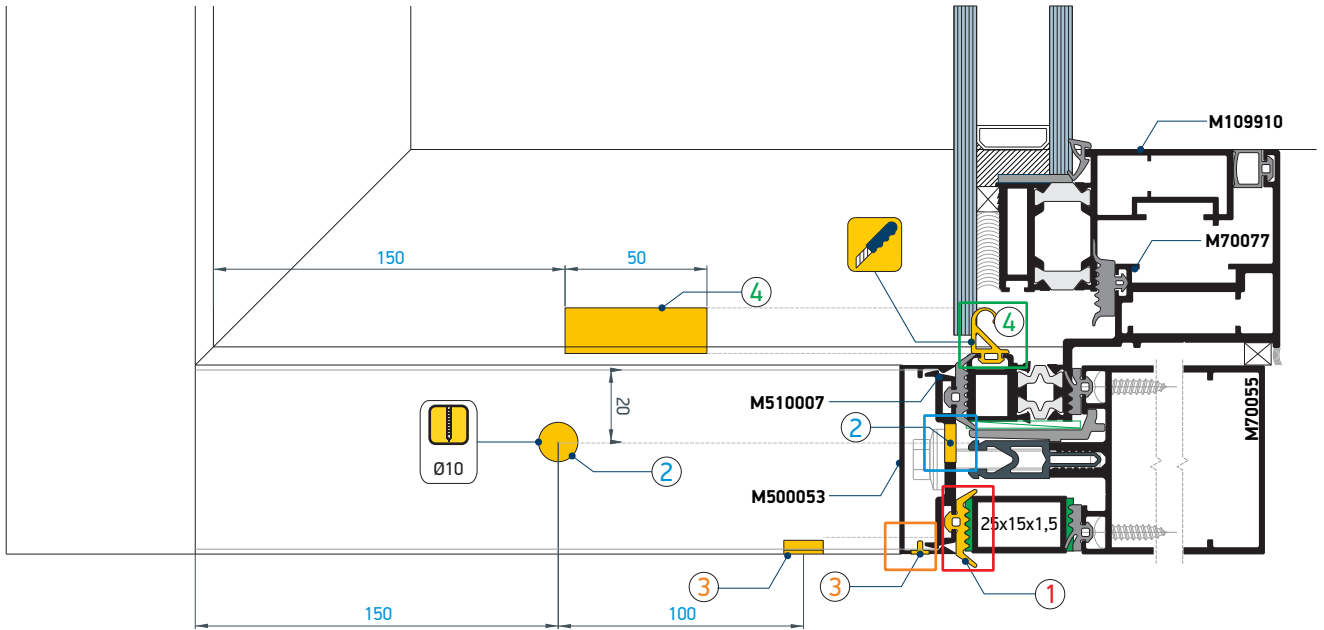
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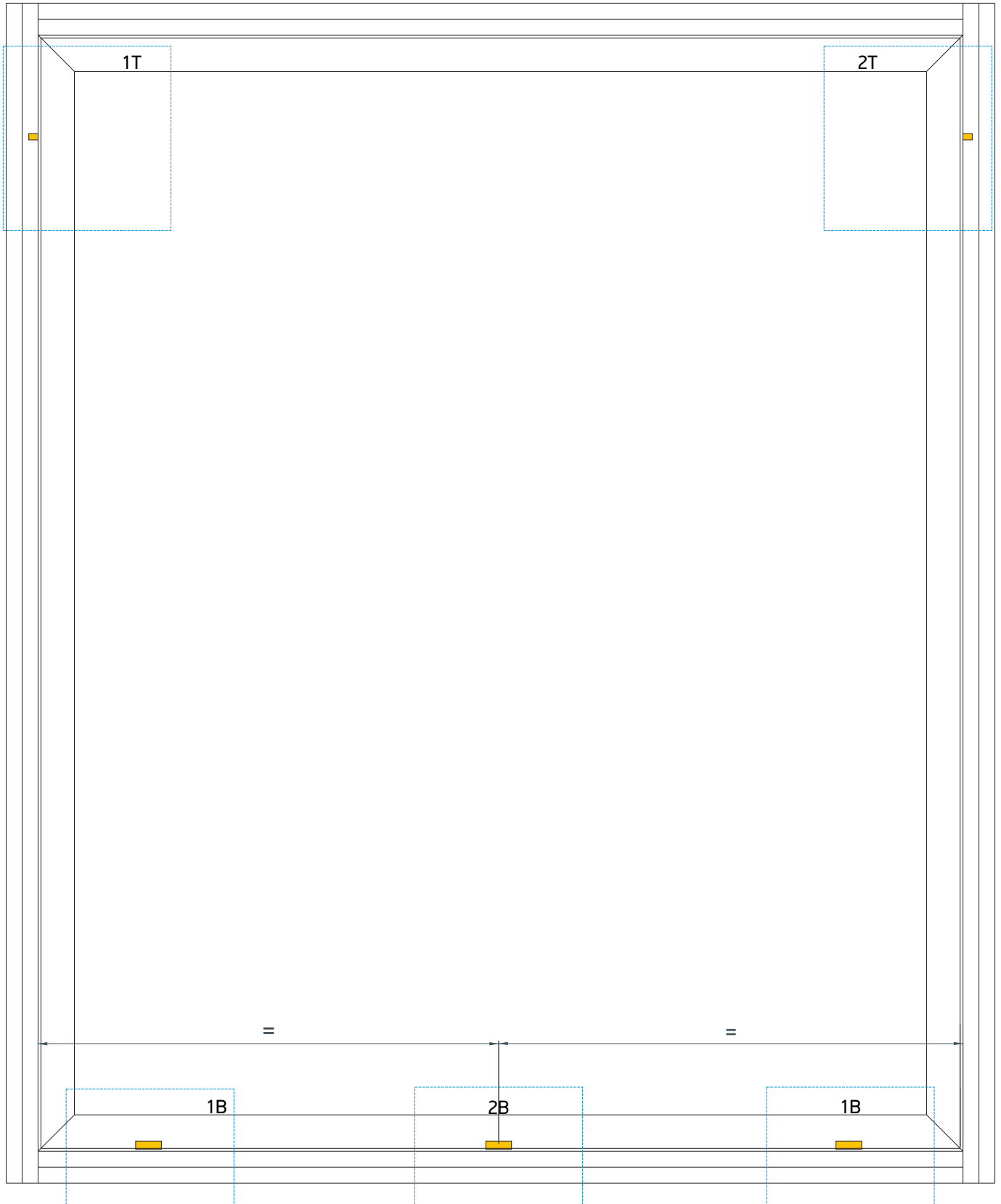


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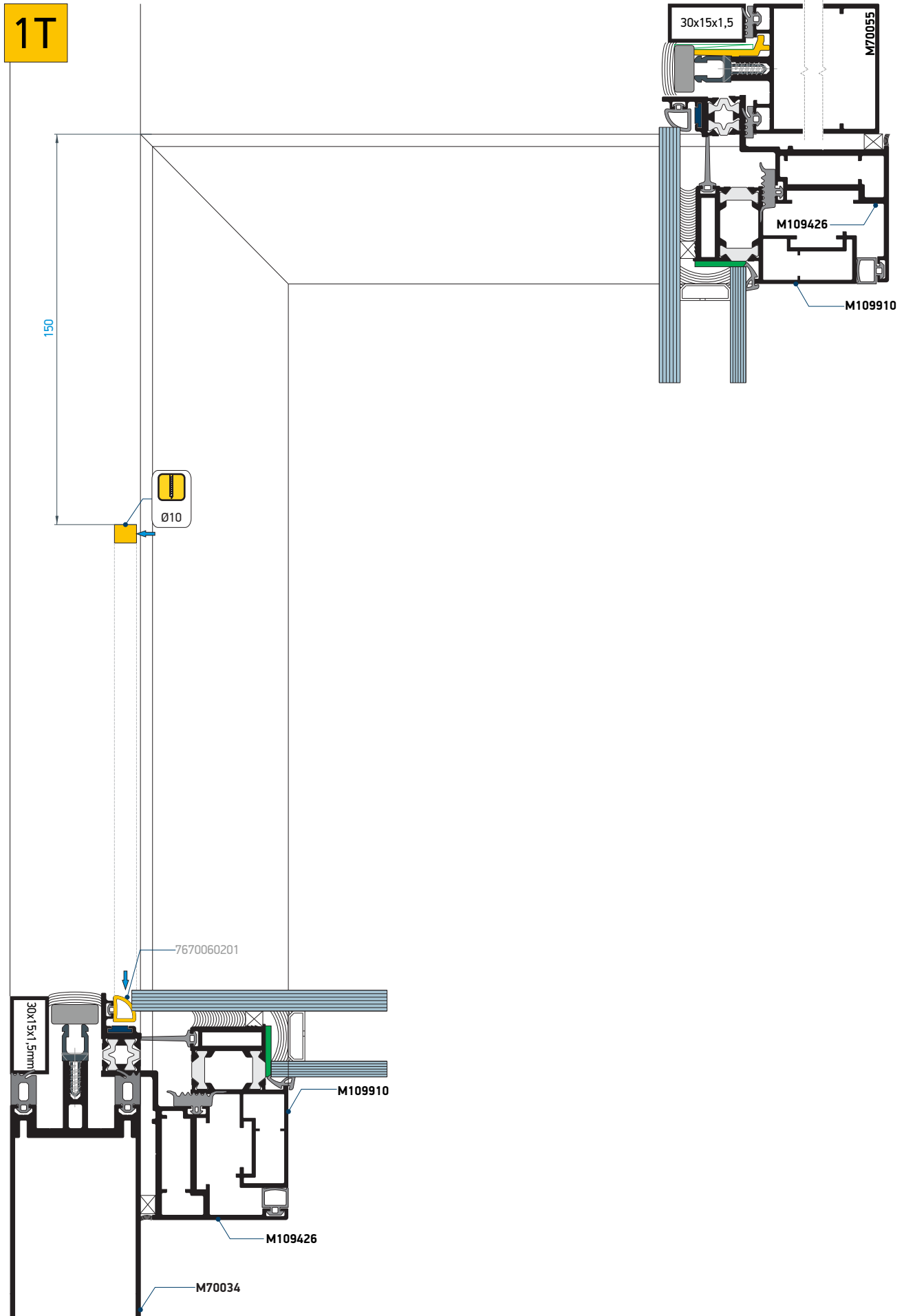


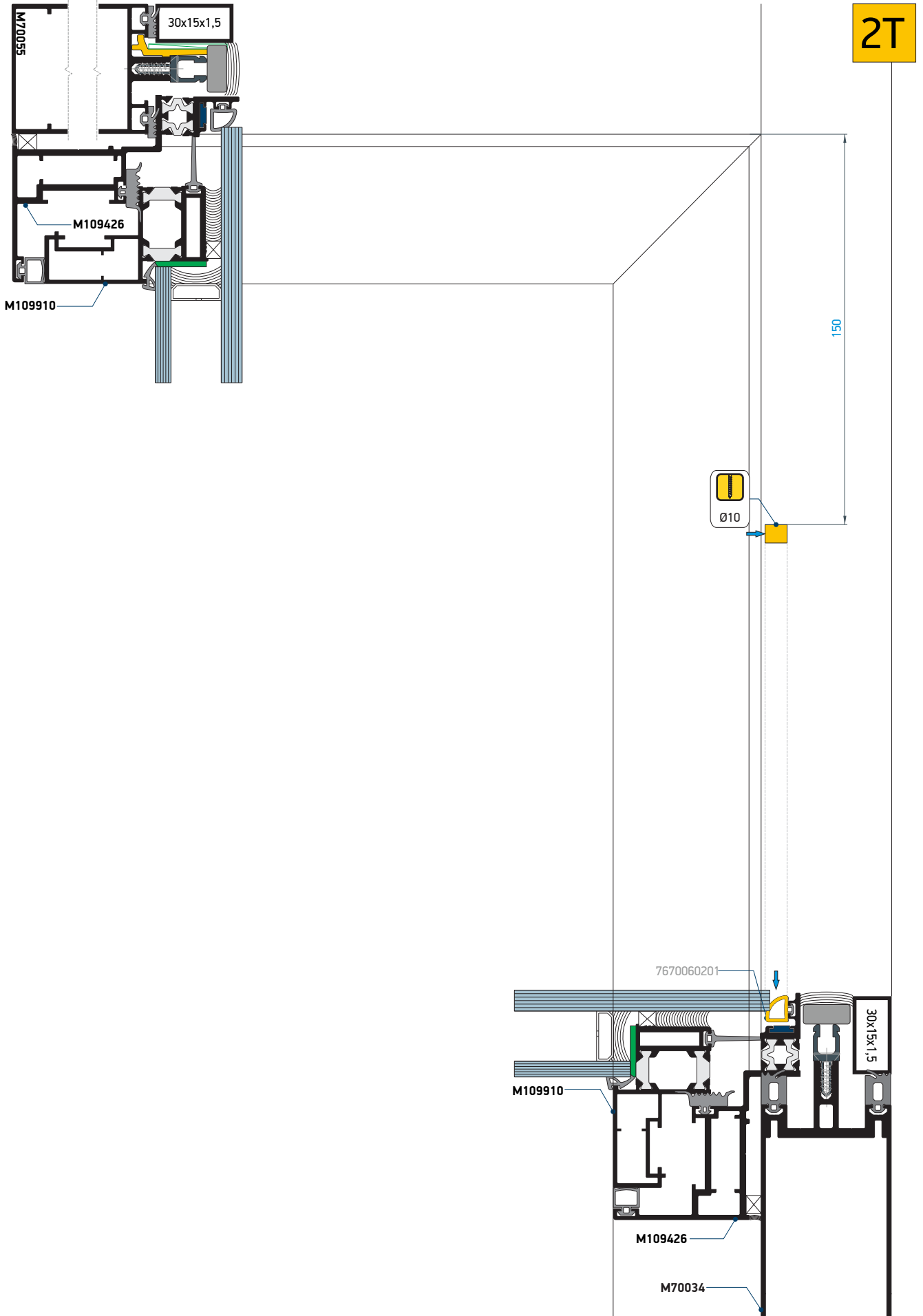
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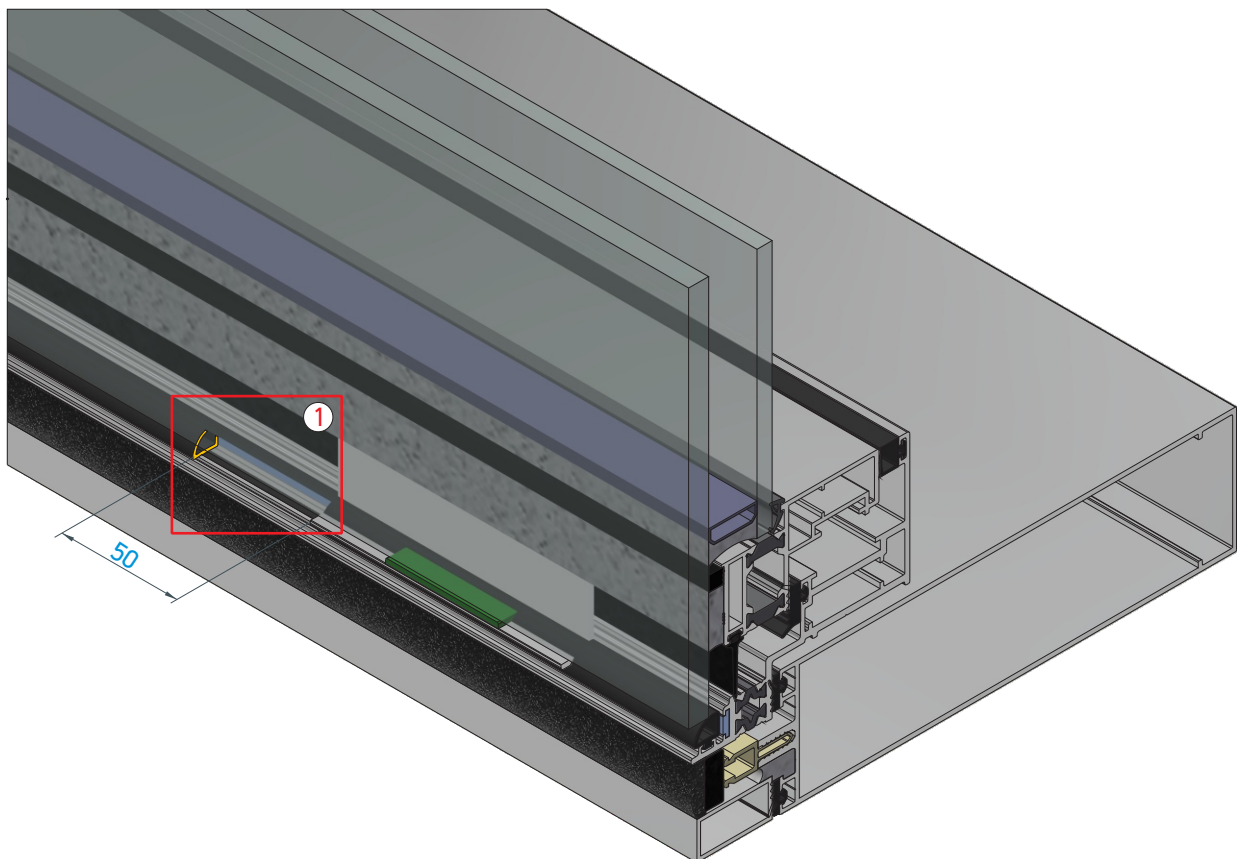
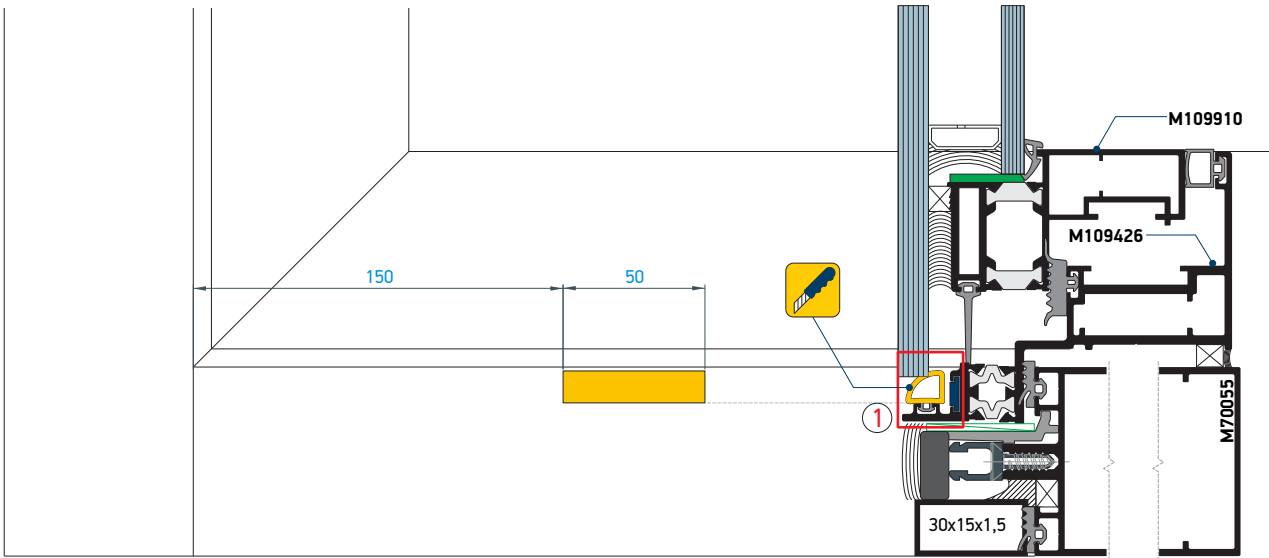


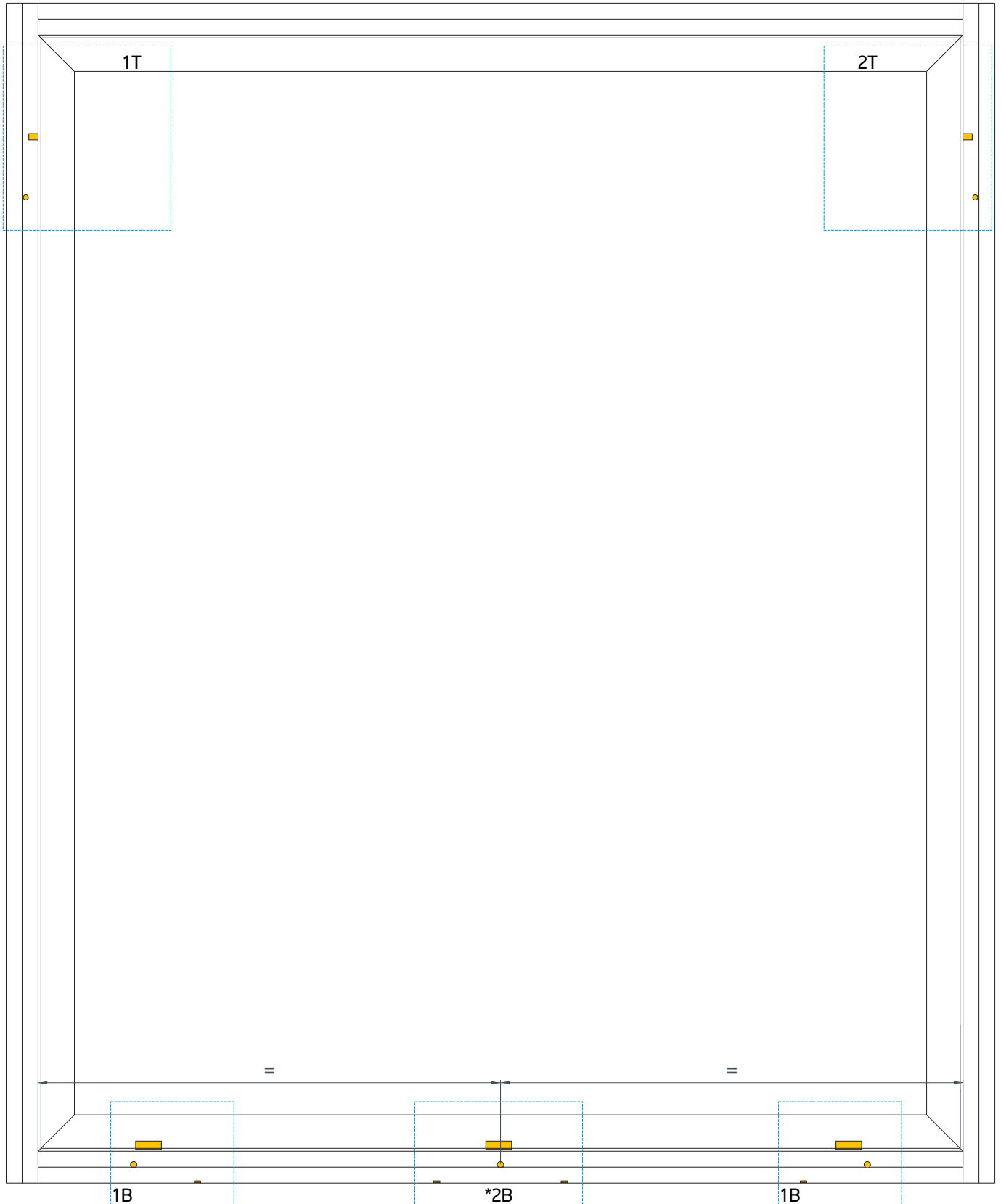
*Η κατεργασία 1B ανοίγεται στο σημείο 2B όταν η συνολική διάσταση της τραβέρσας είναι μεγαλύτερη από 1500mm
*The milling 1B opens at point 2B when the overall dimension of the transom is greater than 1500mm.



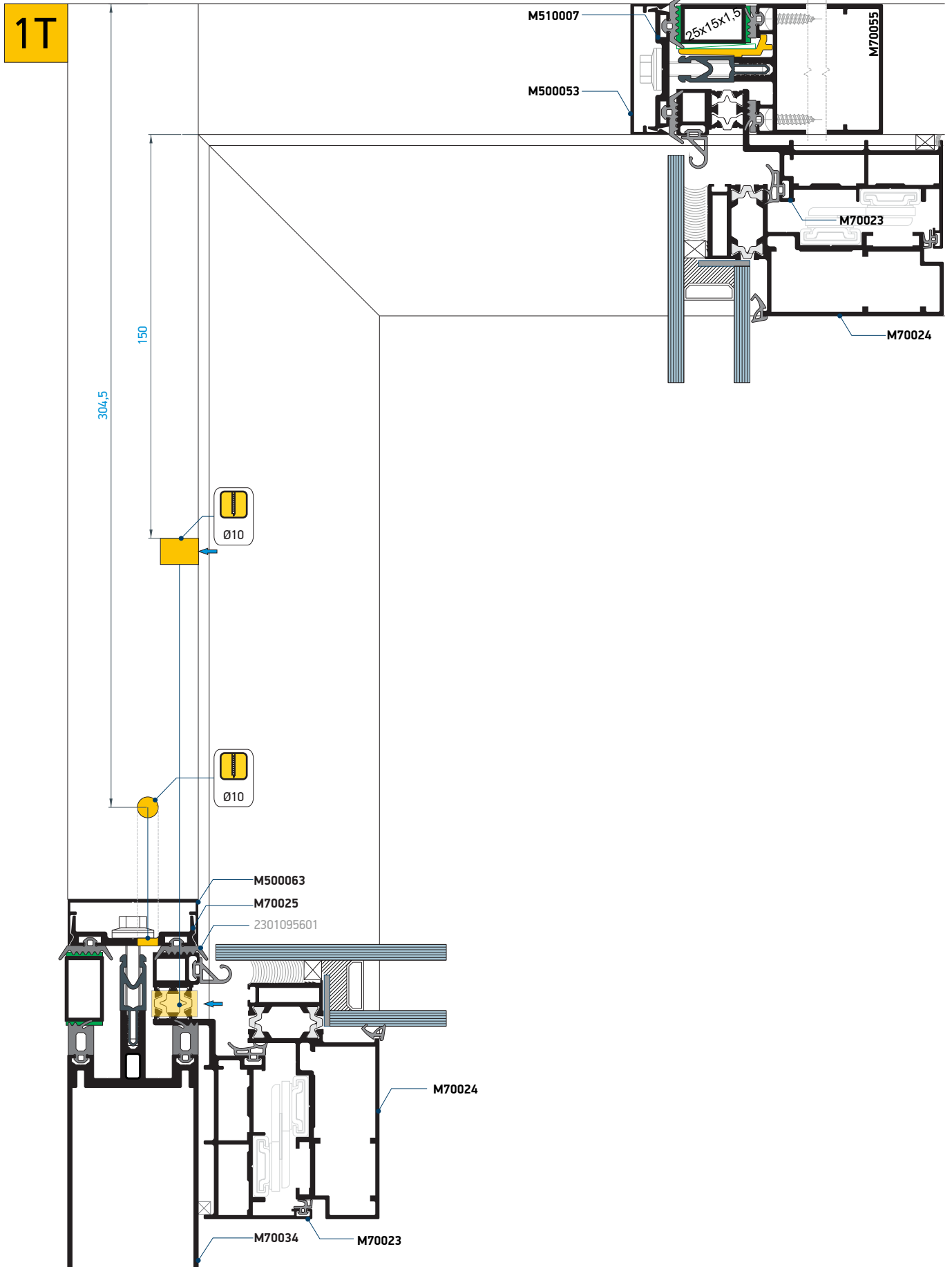


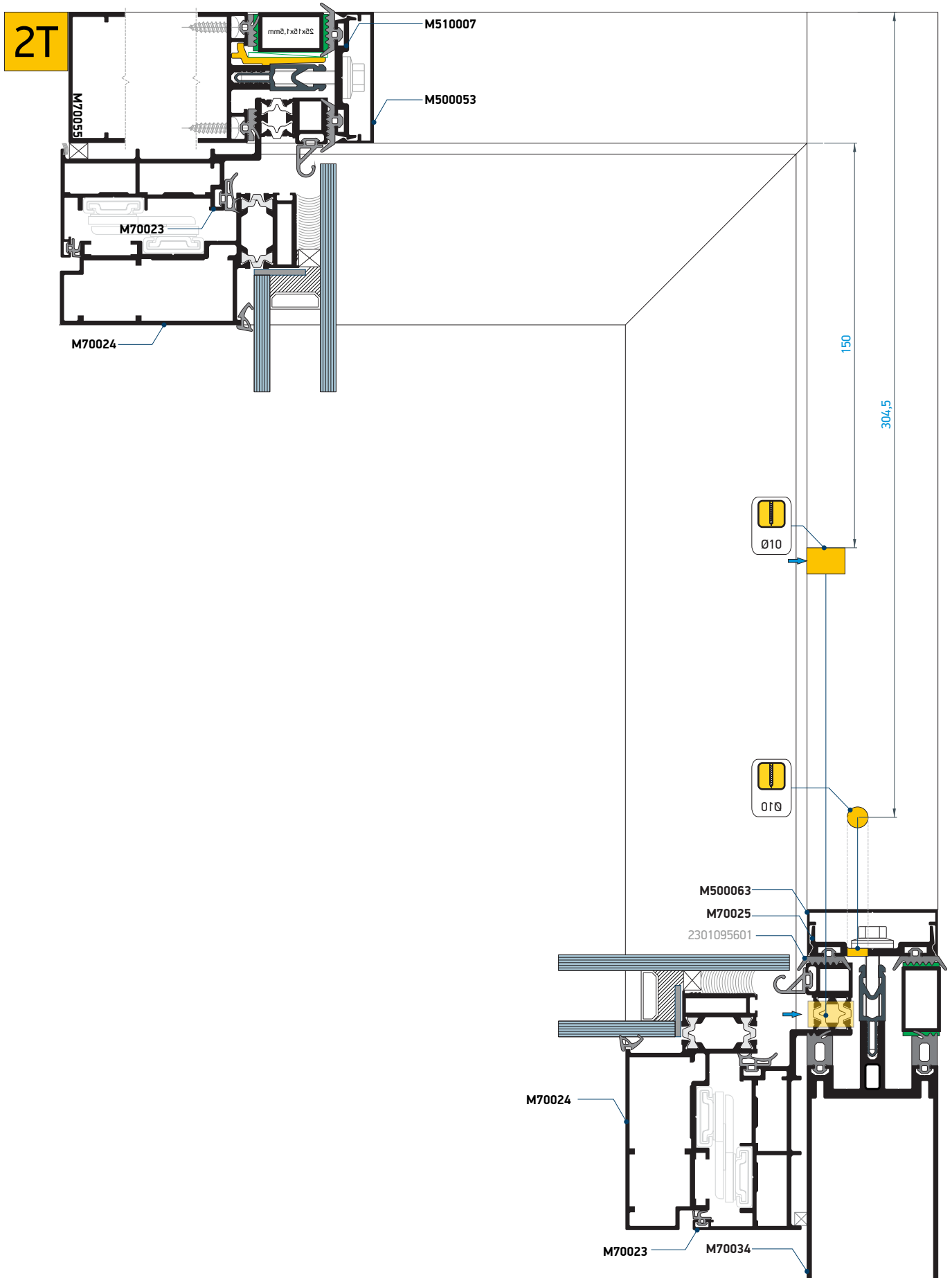
1B



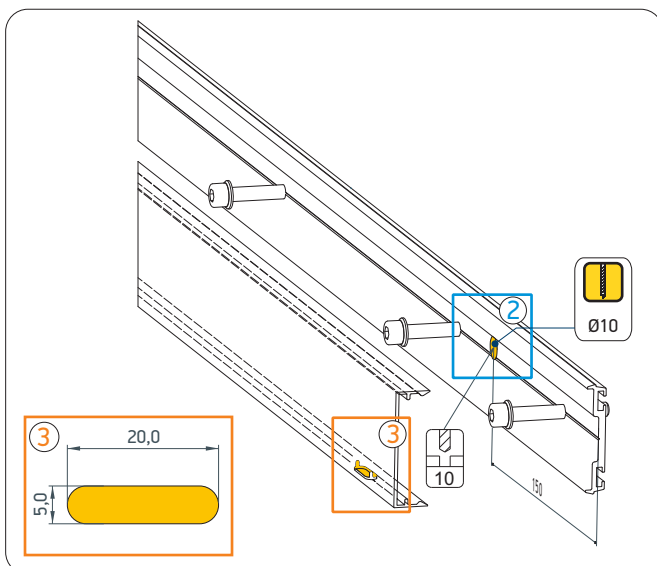
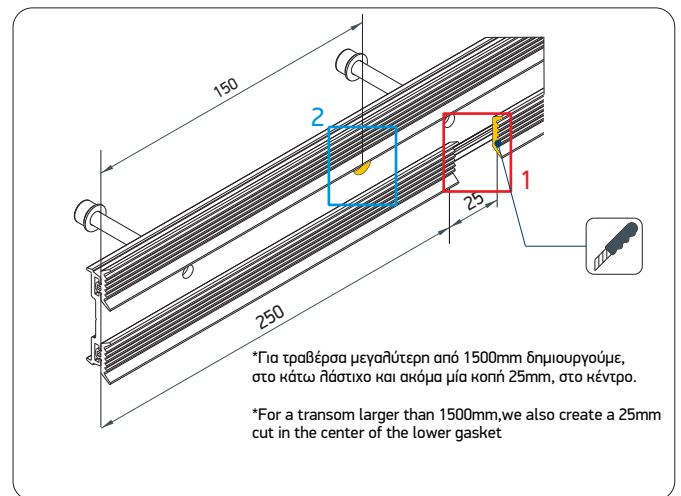
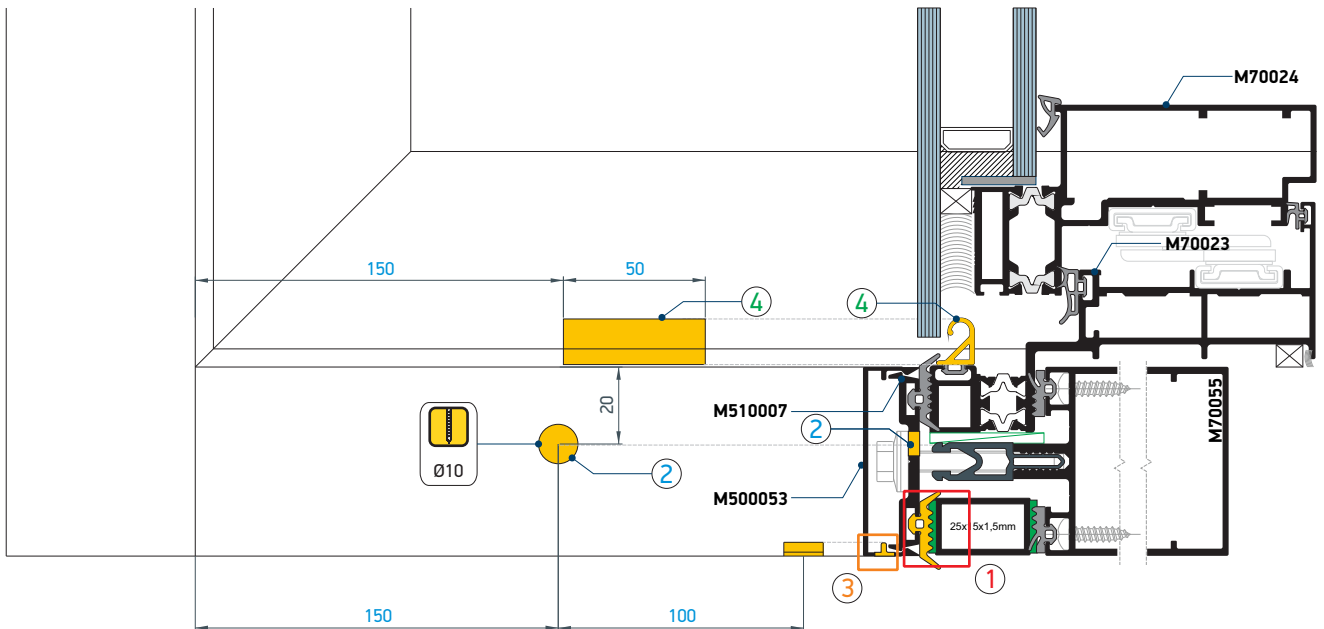


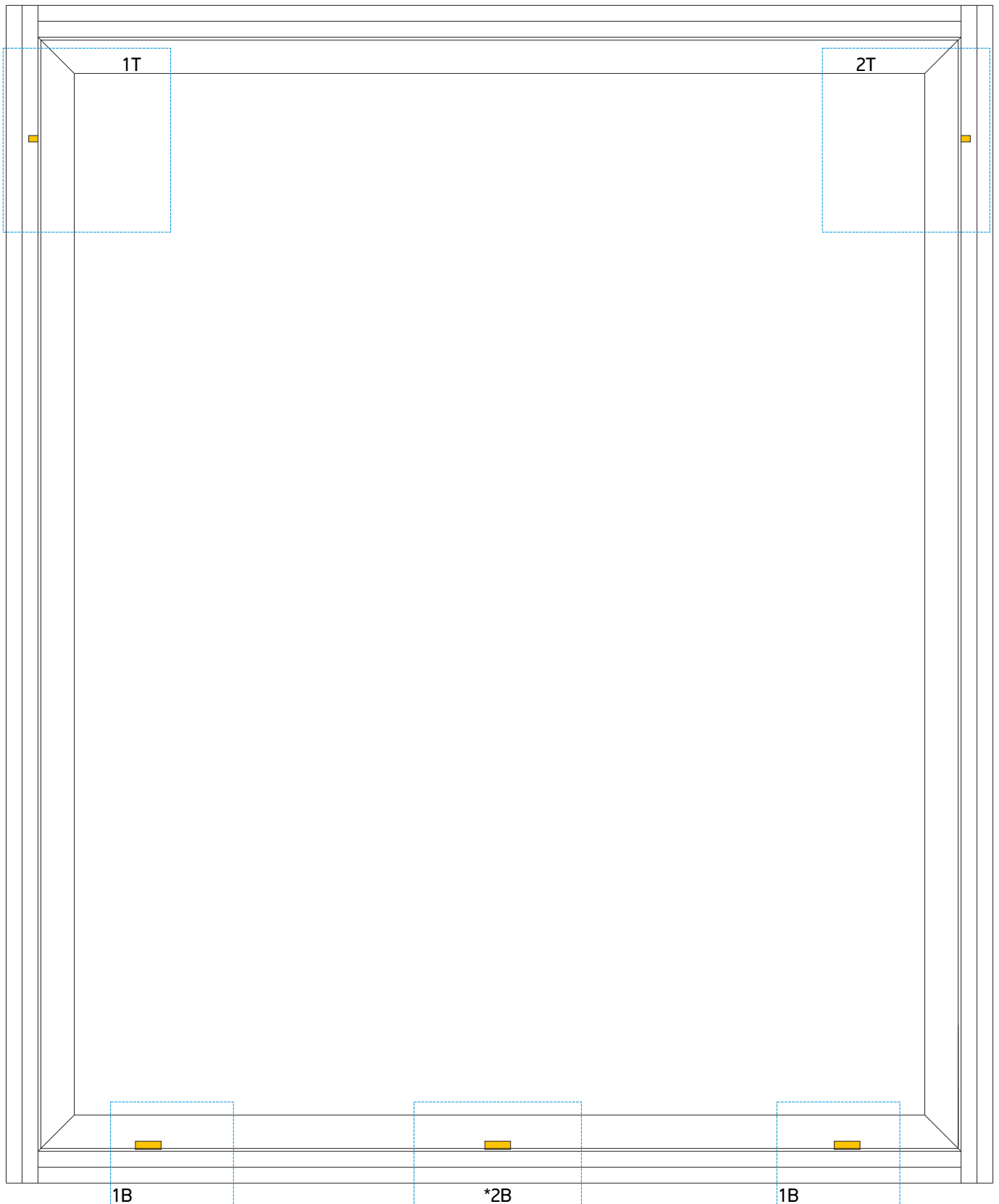
*Η καταργασία 1B ανοίγεται στο σημείο 2B όταν η συνολική διάσταση της τραβέρσας είναι μεγαλύτερη από 1500mm
*The milling 1B opens at point 2B when the overall dimension of the transom is greater than 1500mm.



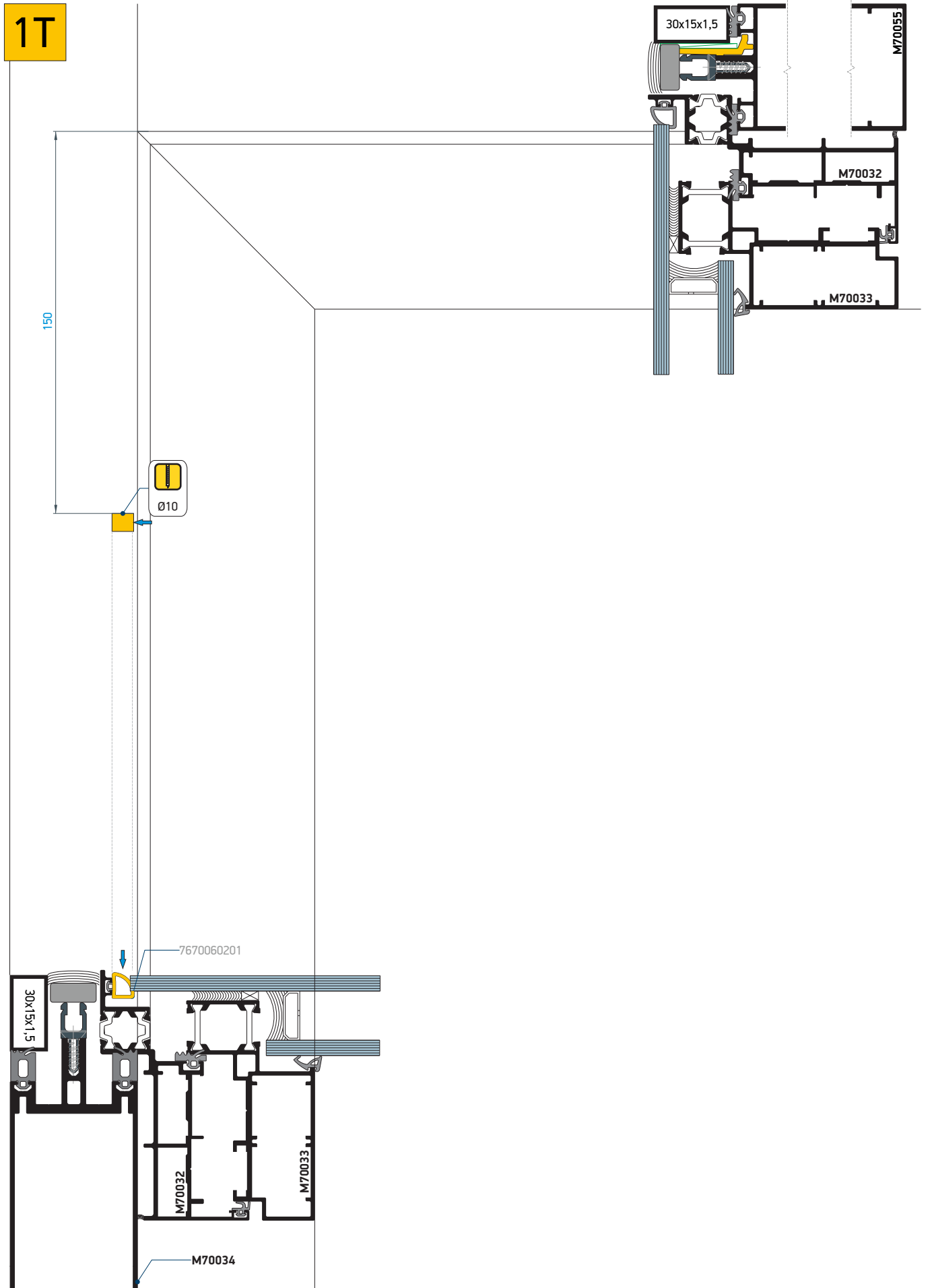


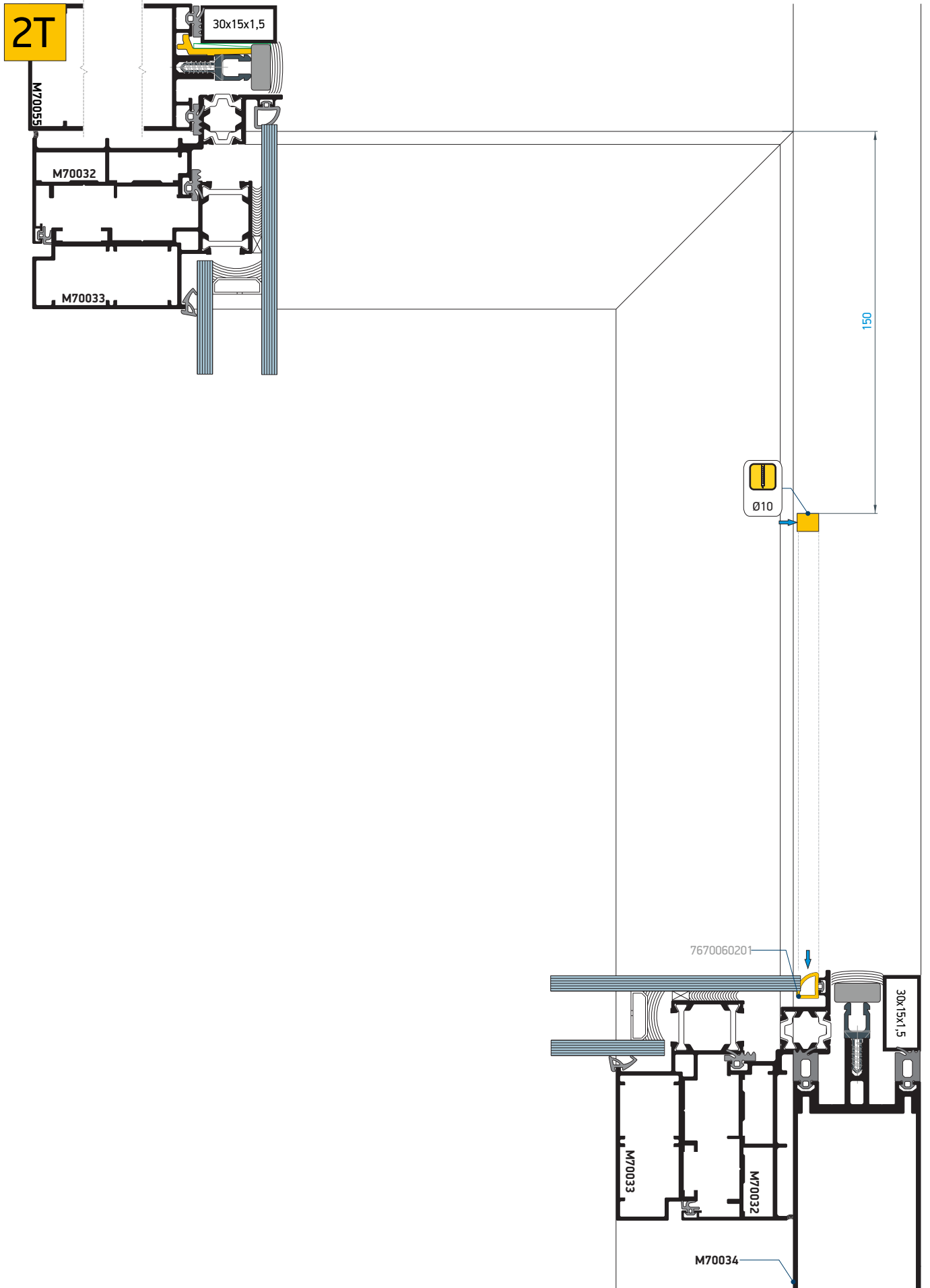
1B



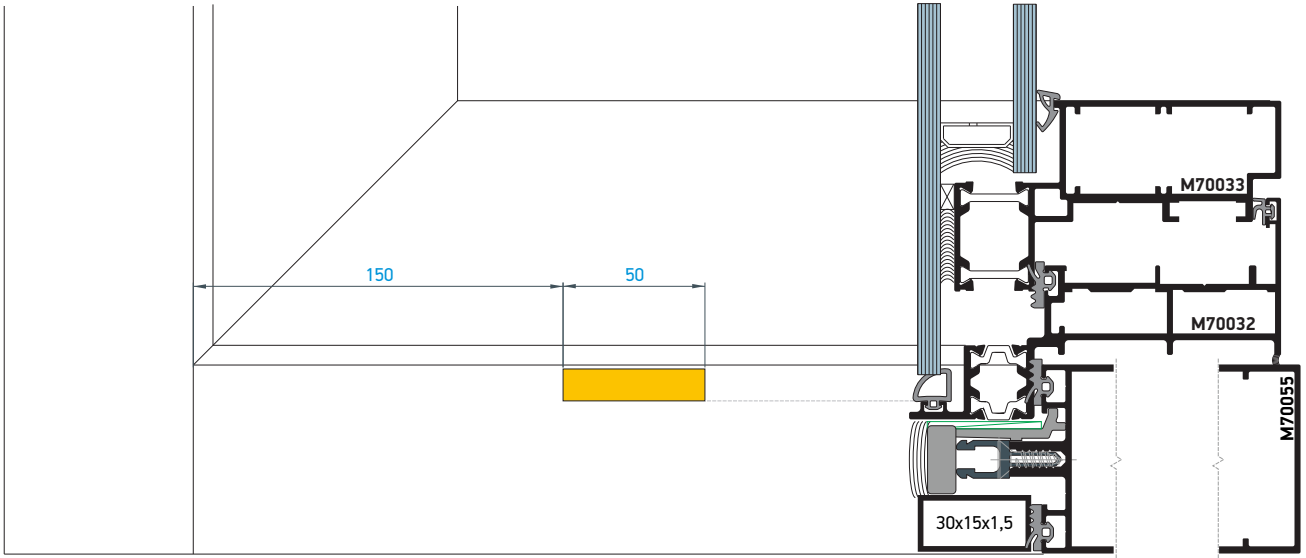


*Η κατεργασία 1B ανοίγεται στο σημείο 2B όταν η συνολική διάσταση της τραβέρσας είναι μεγαλύτερη από 1500mm
*The milling 1B opens at point 2B when the overall dimension of the transom is greater than 1500mm.

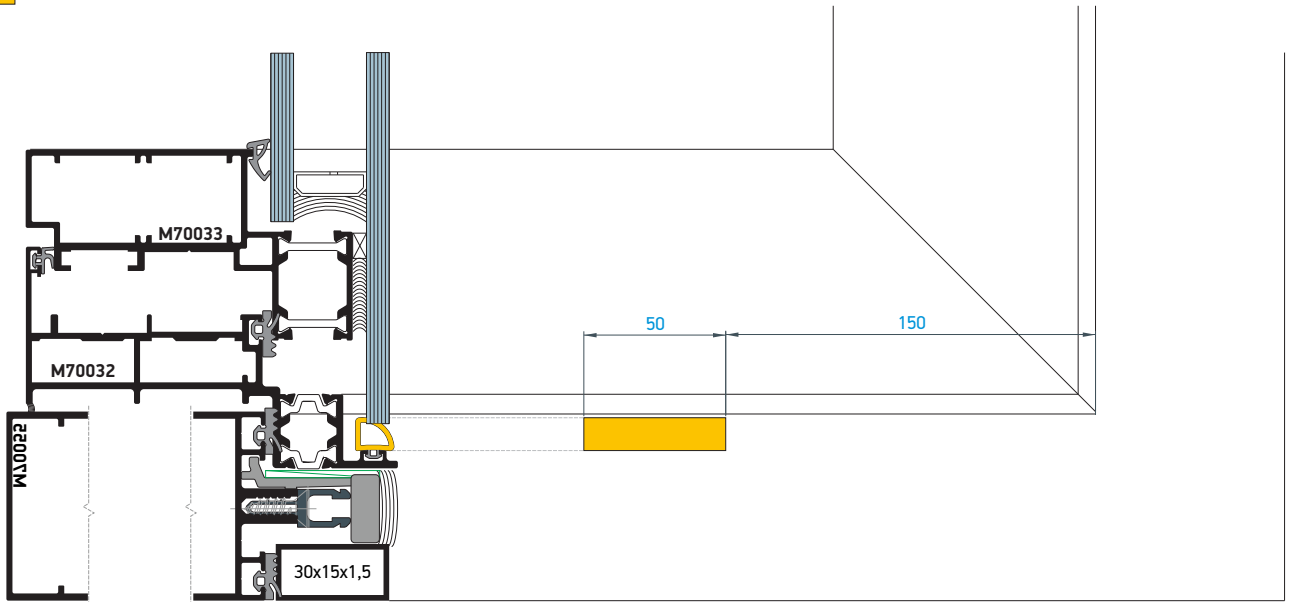




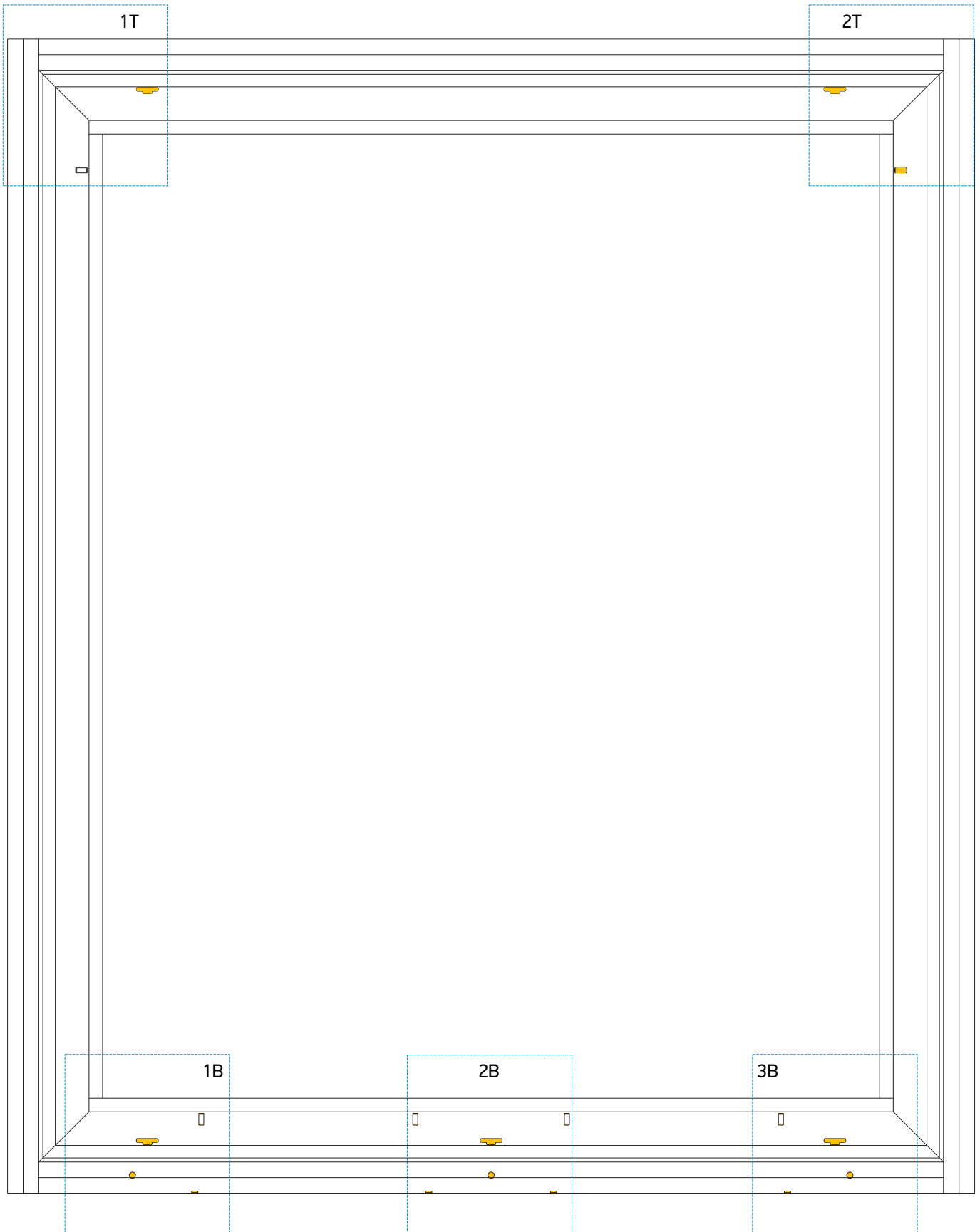
1B



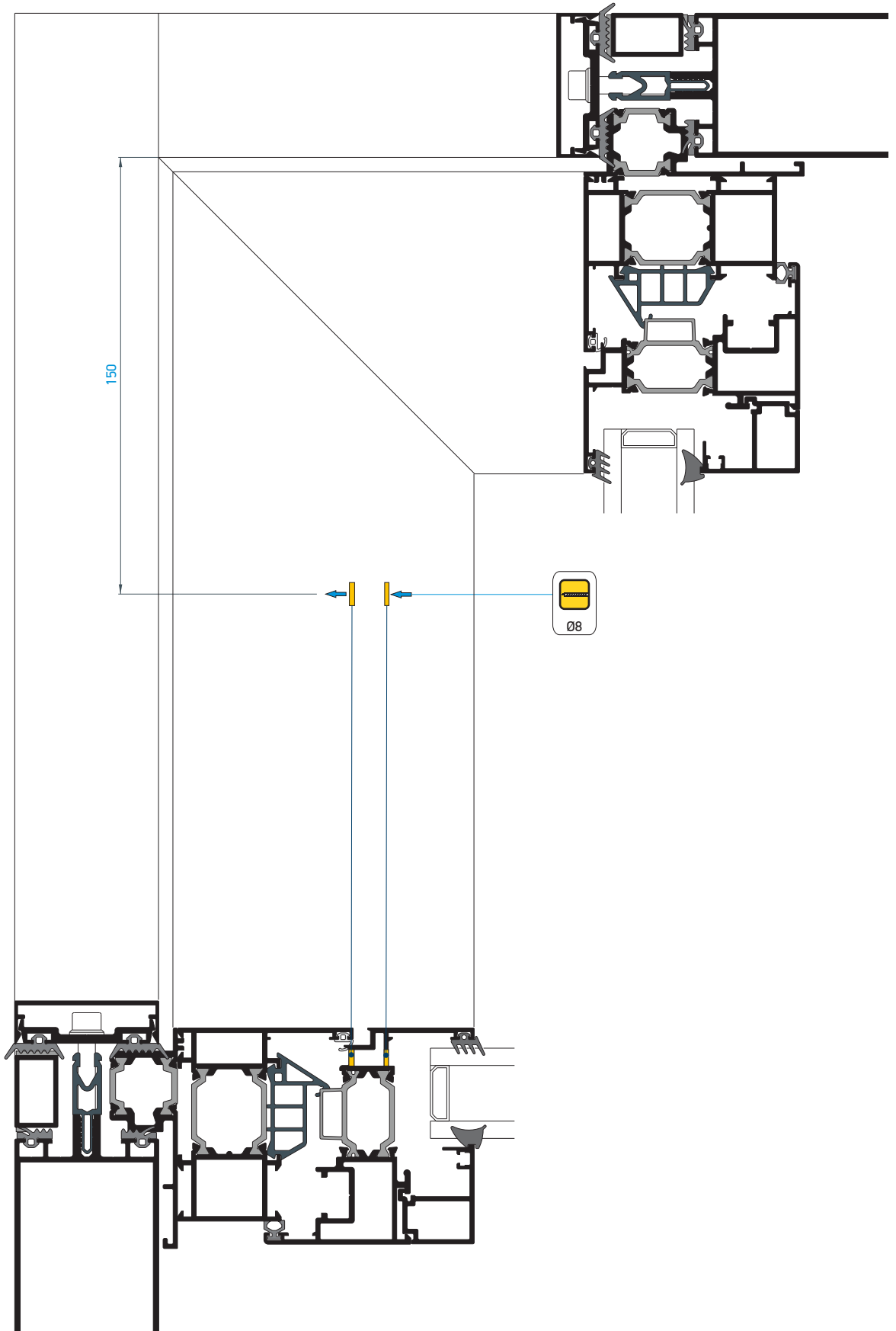
3B



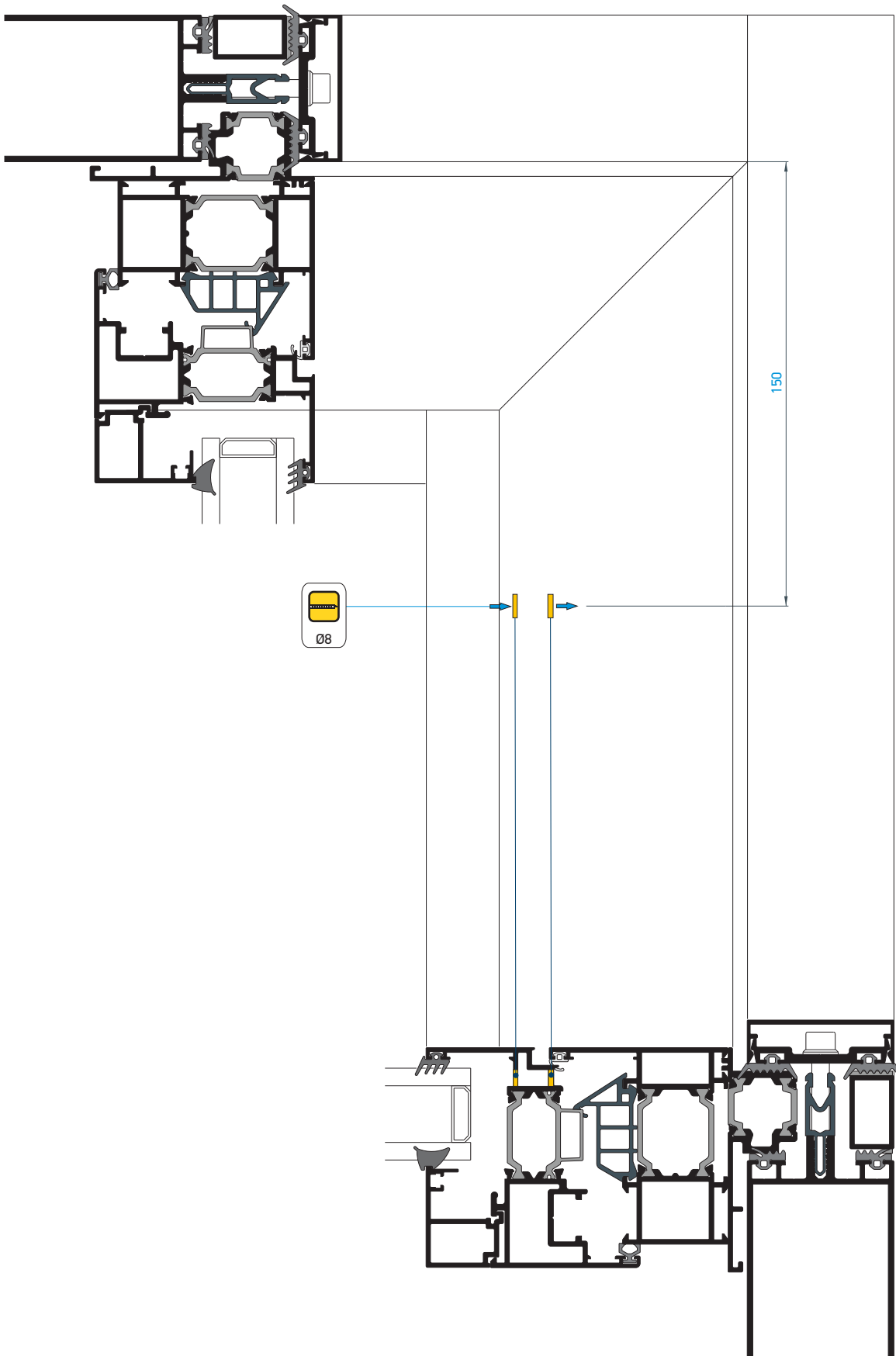
Απορροές ανοιγόμενου παράθυρου
Drainage plan for casement window

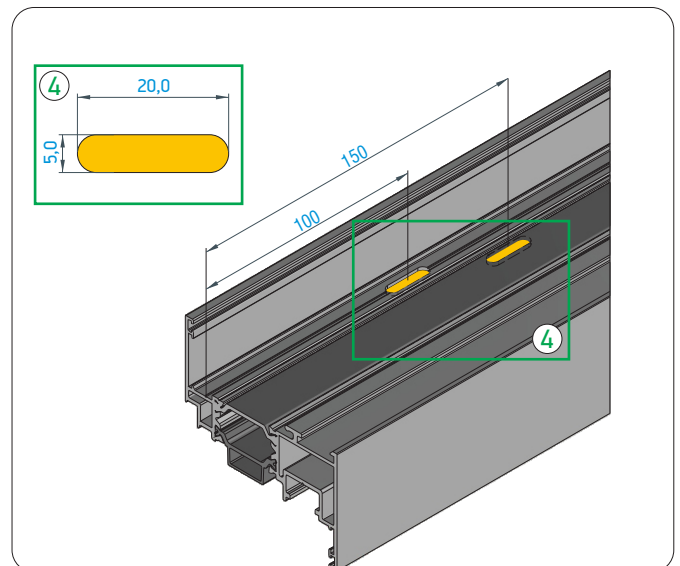
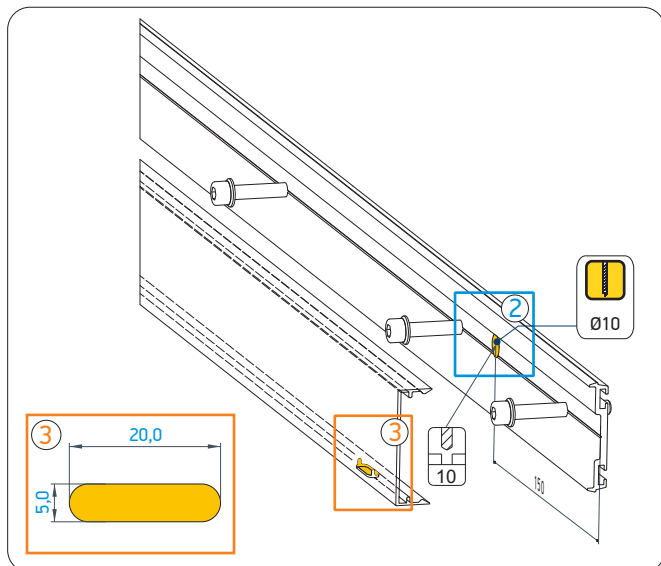
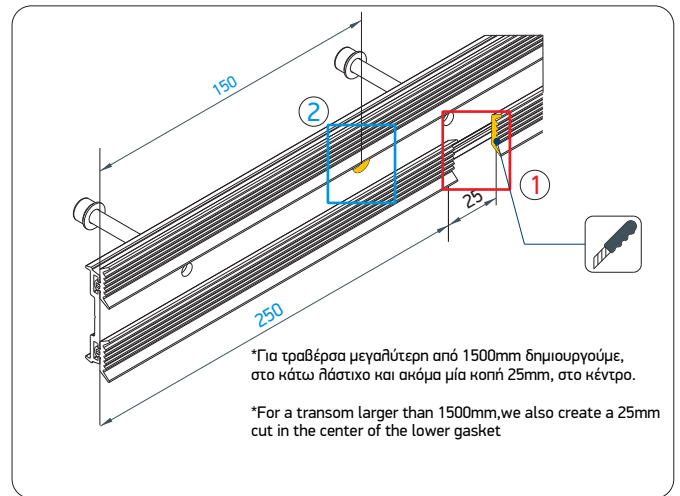
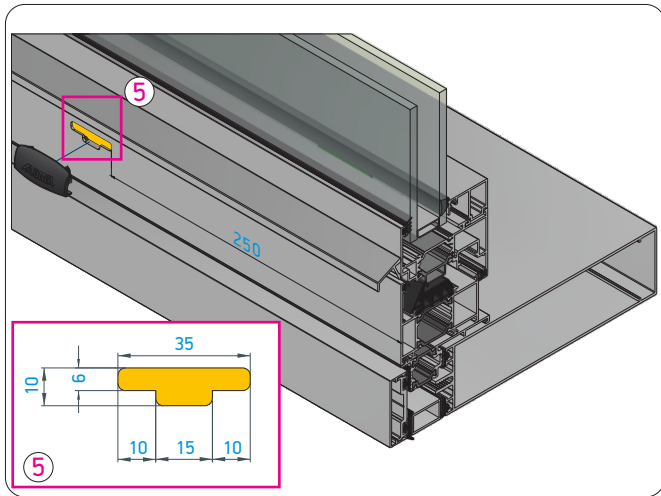
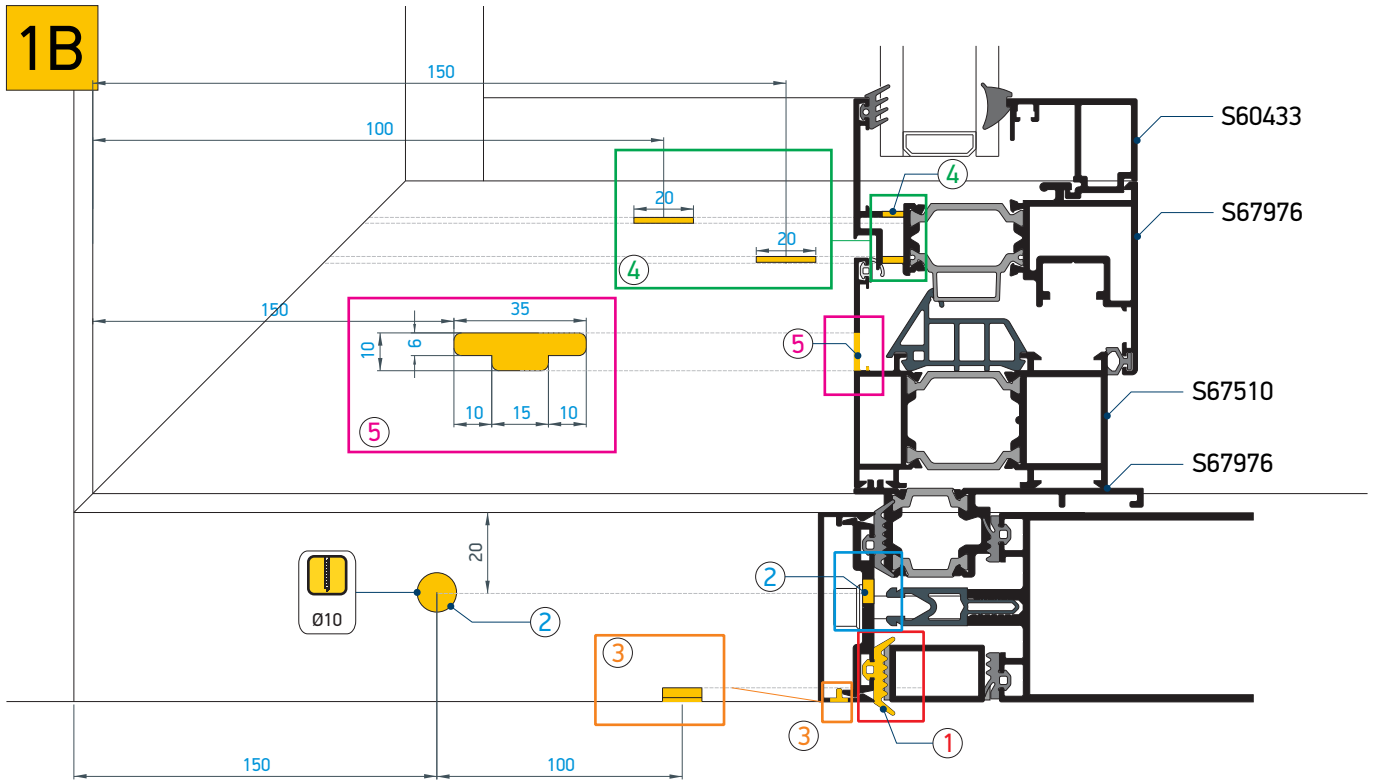


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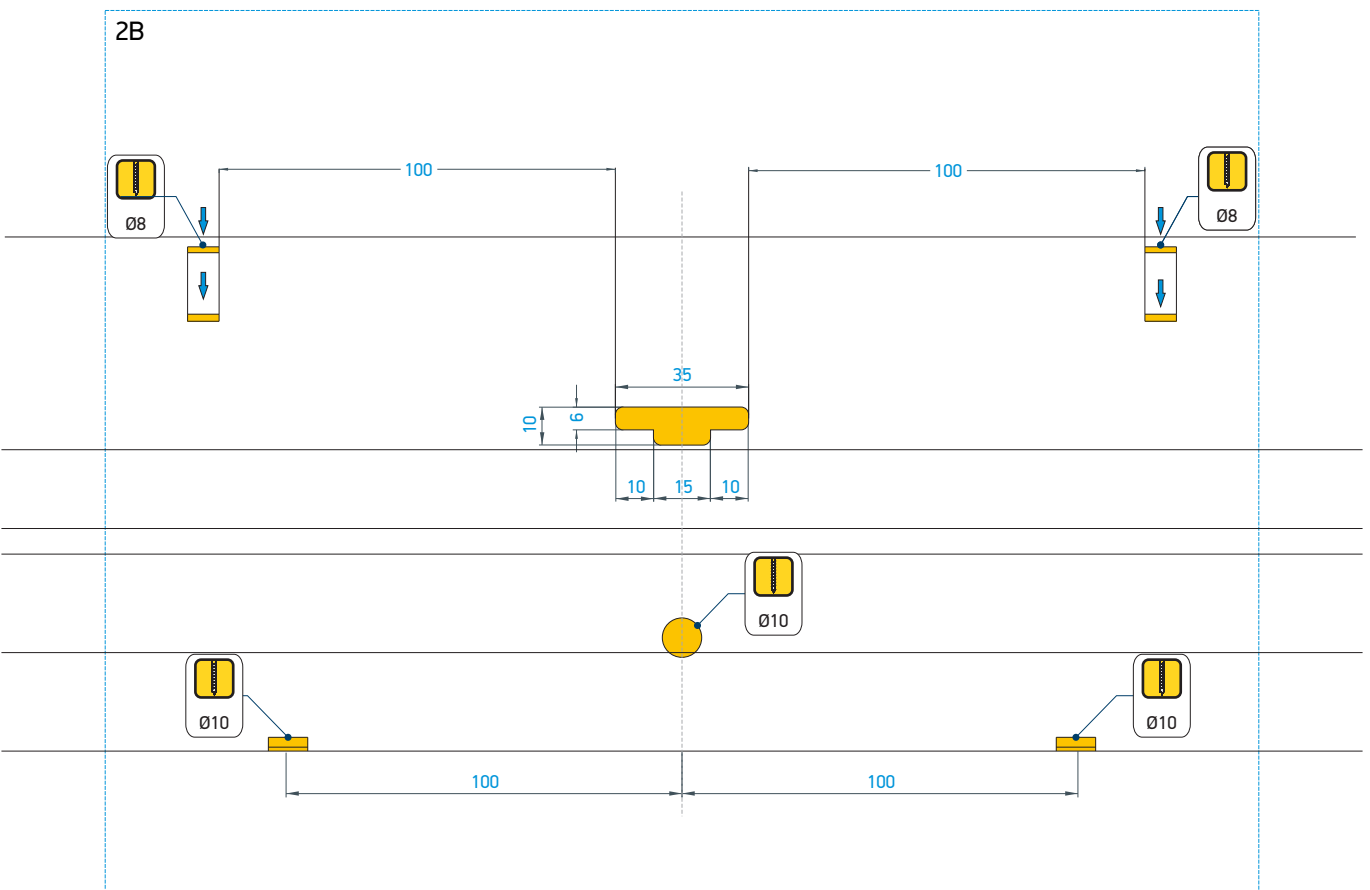
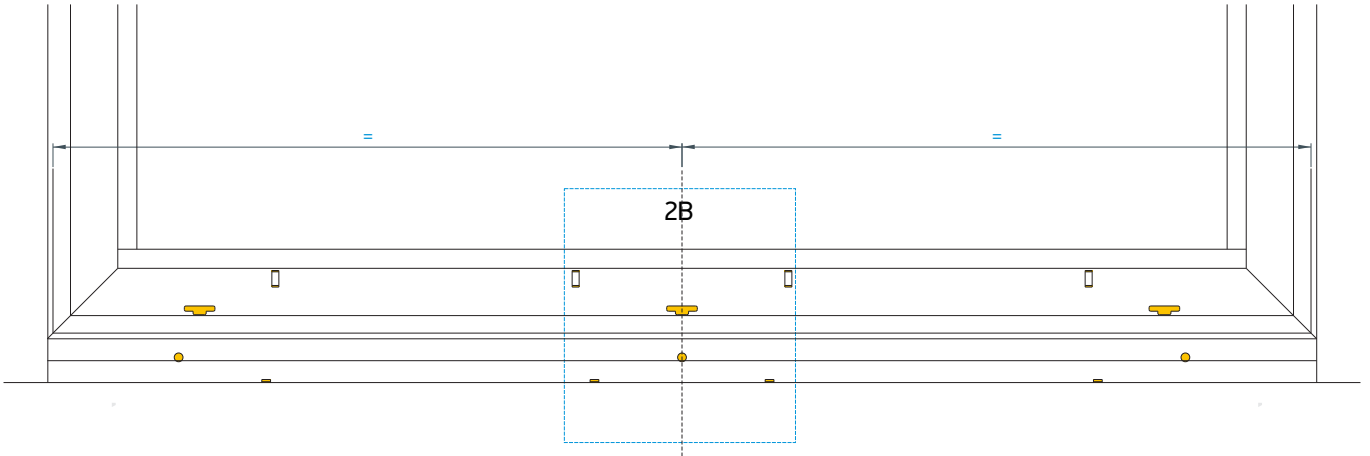


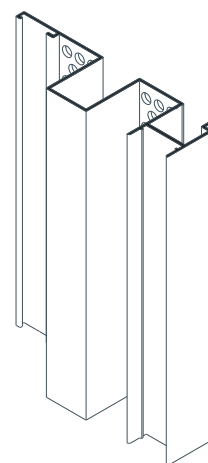
2T



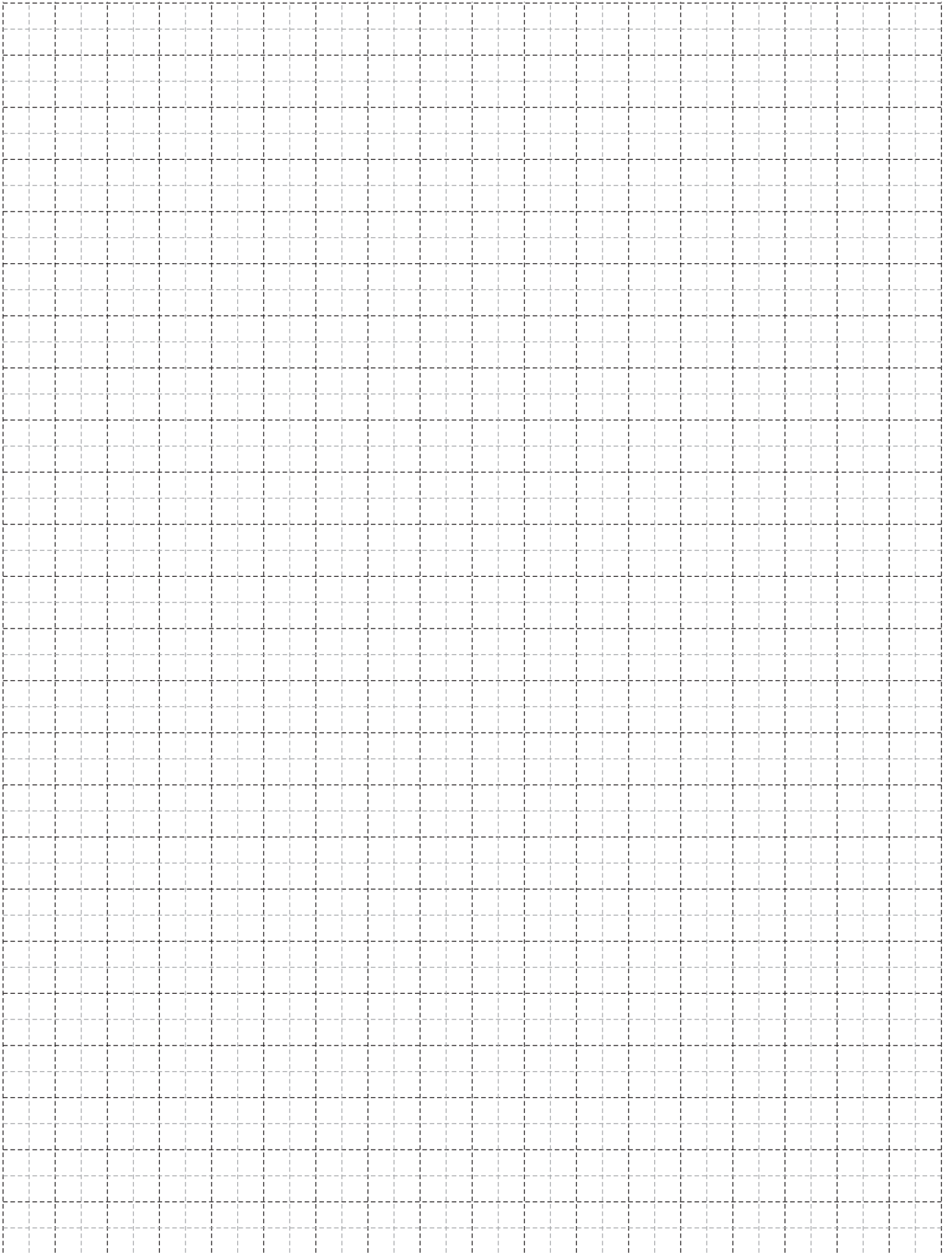


2B



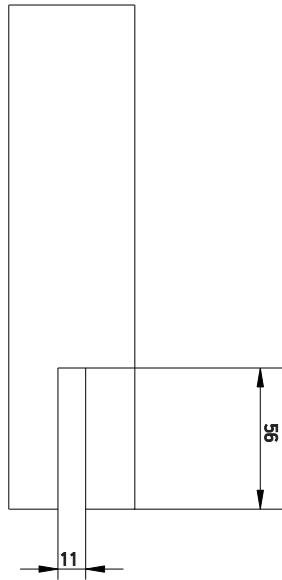


ΠΡΟΣΟΨΗ BARCODE
FACADE BARCODE

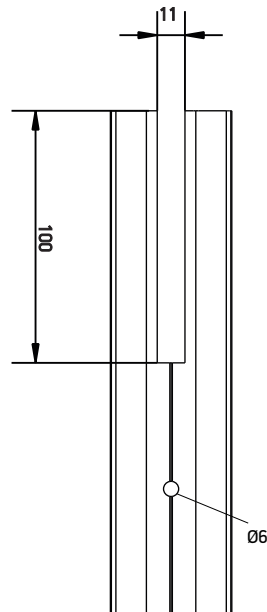
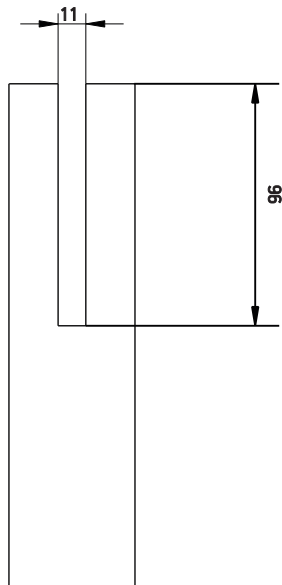
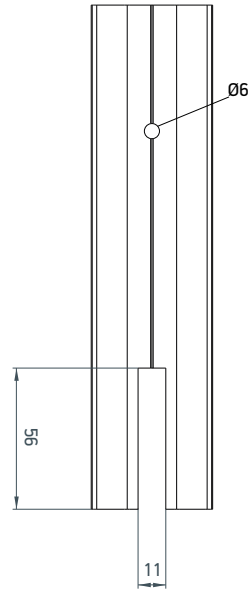


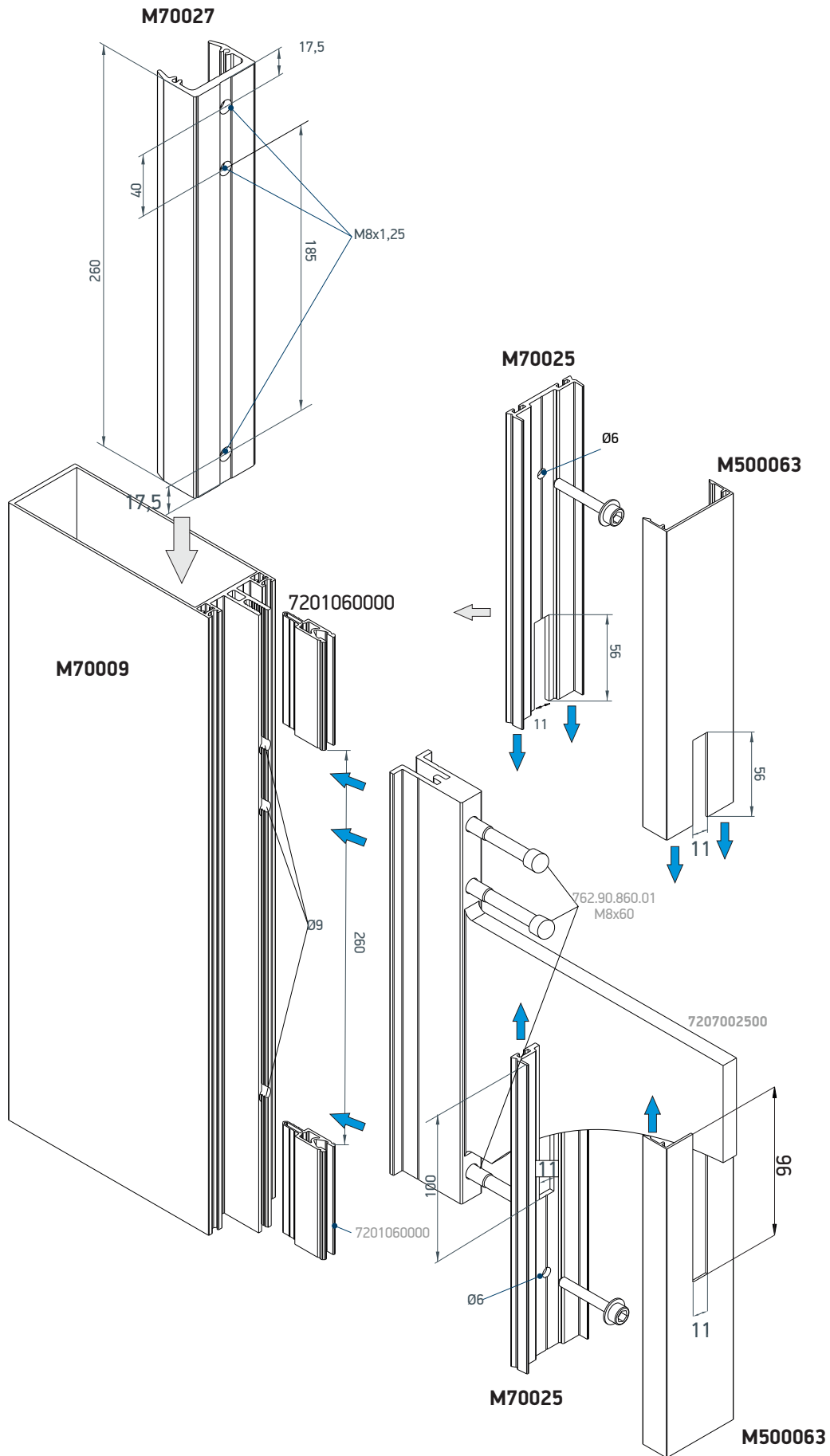
Louver and Barcode installation

M500063

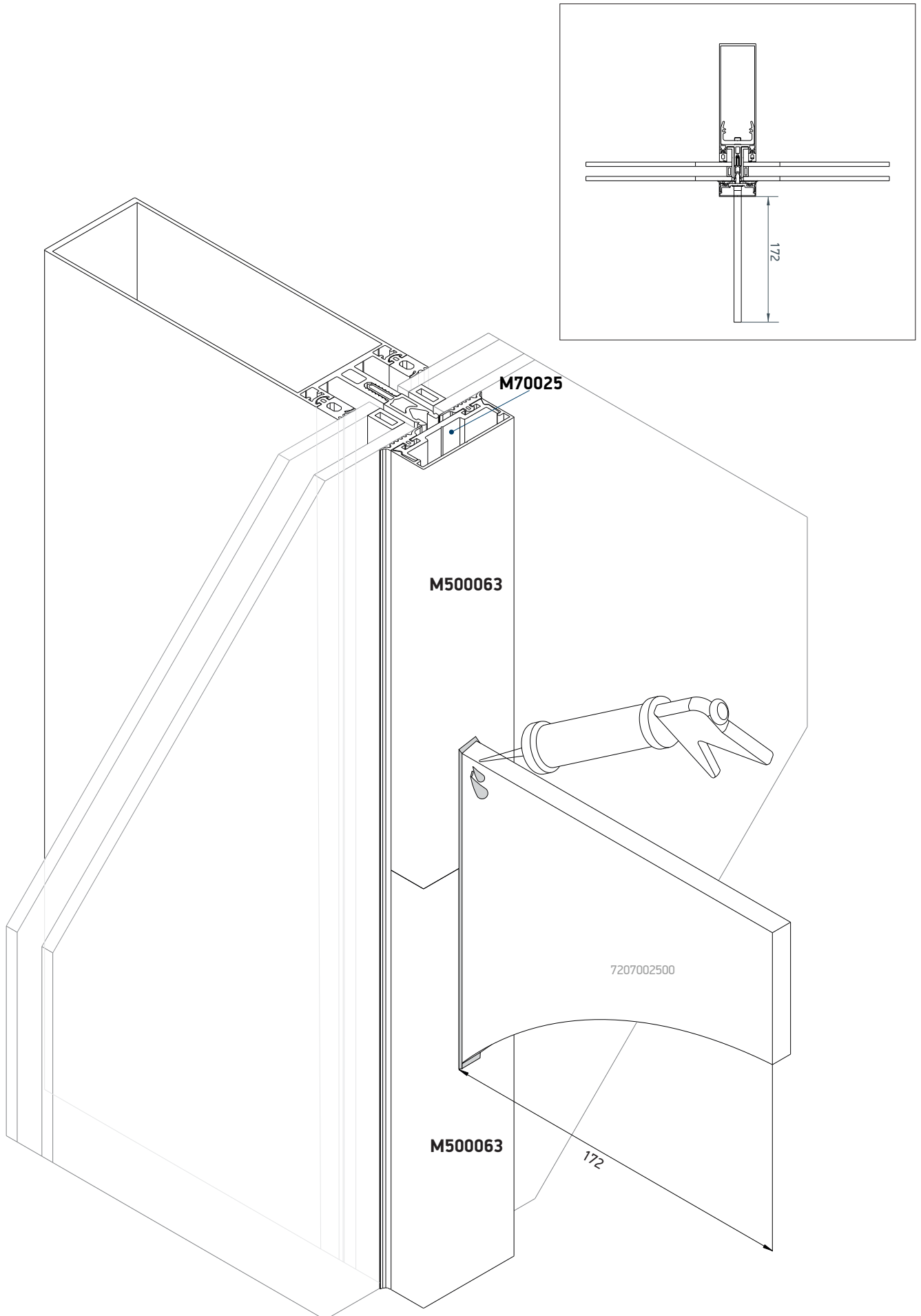


M70025

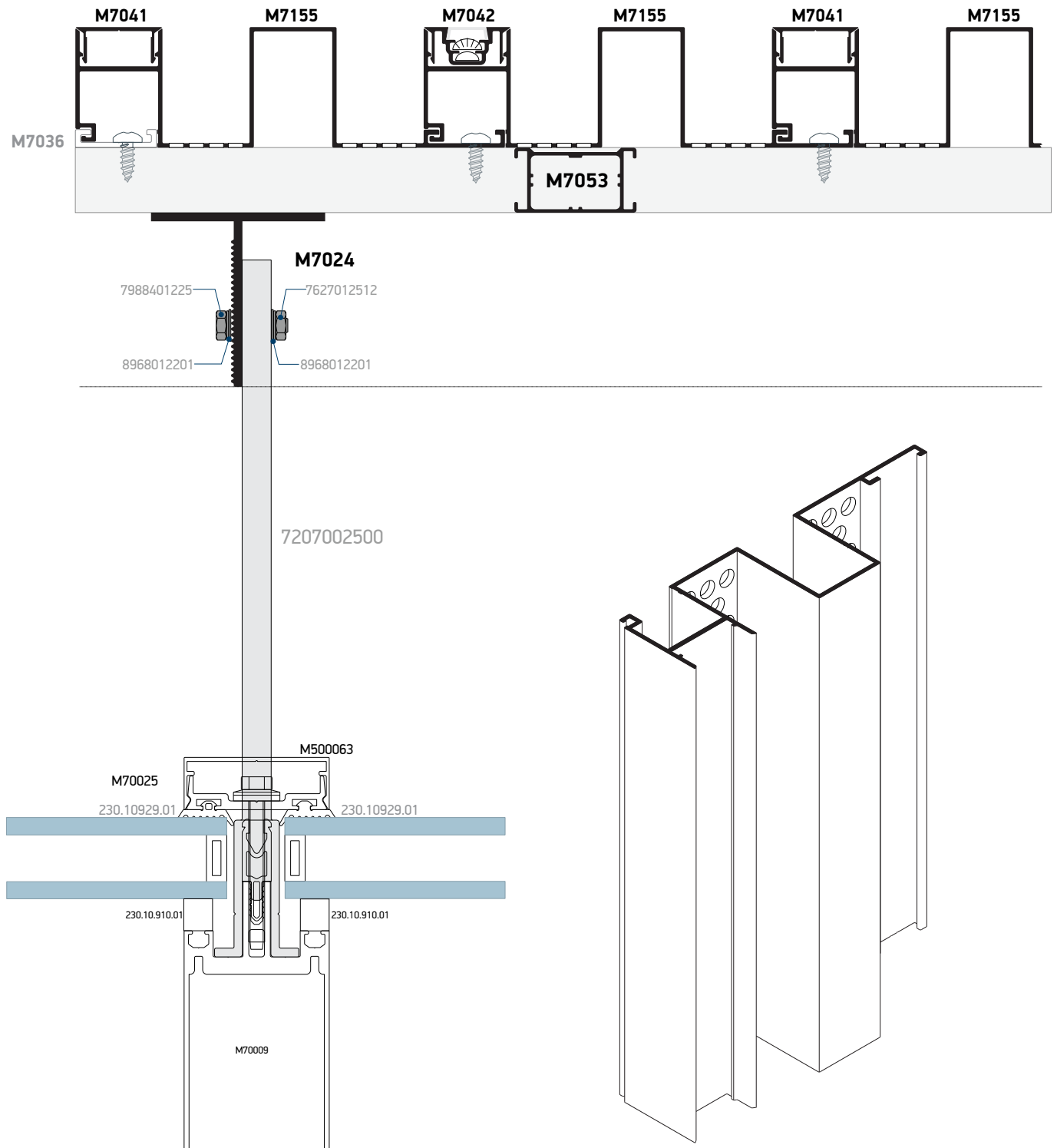




*Can be applied to all M7 mullions

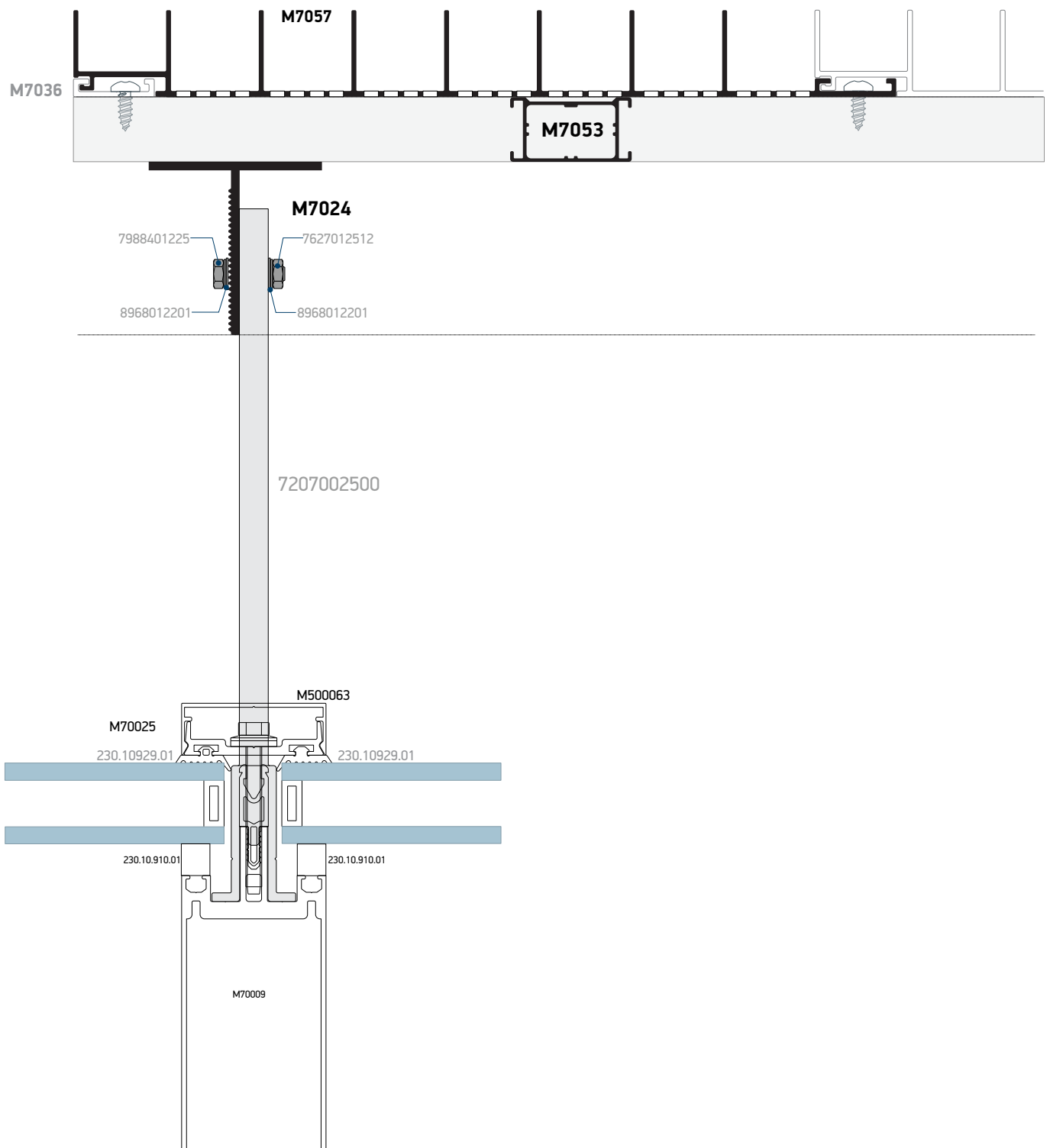


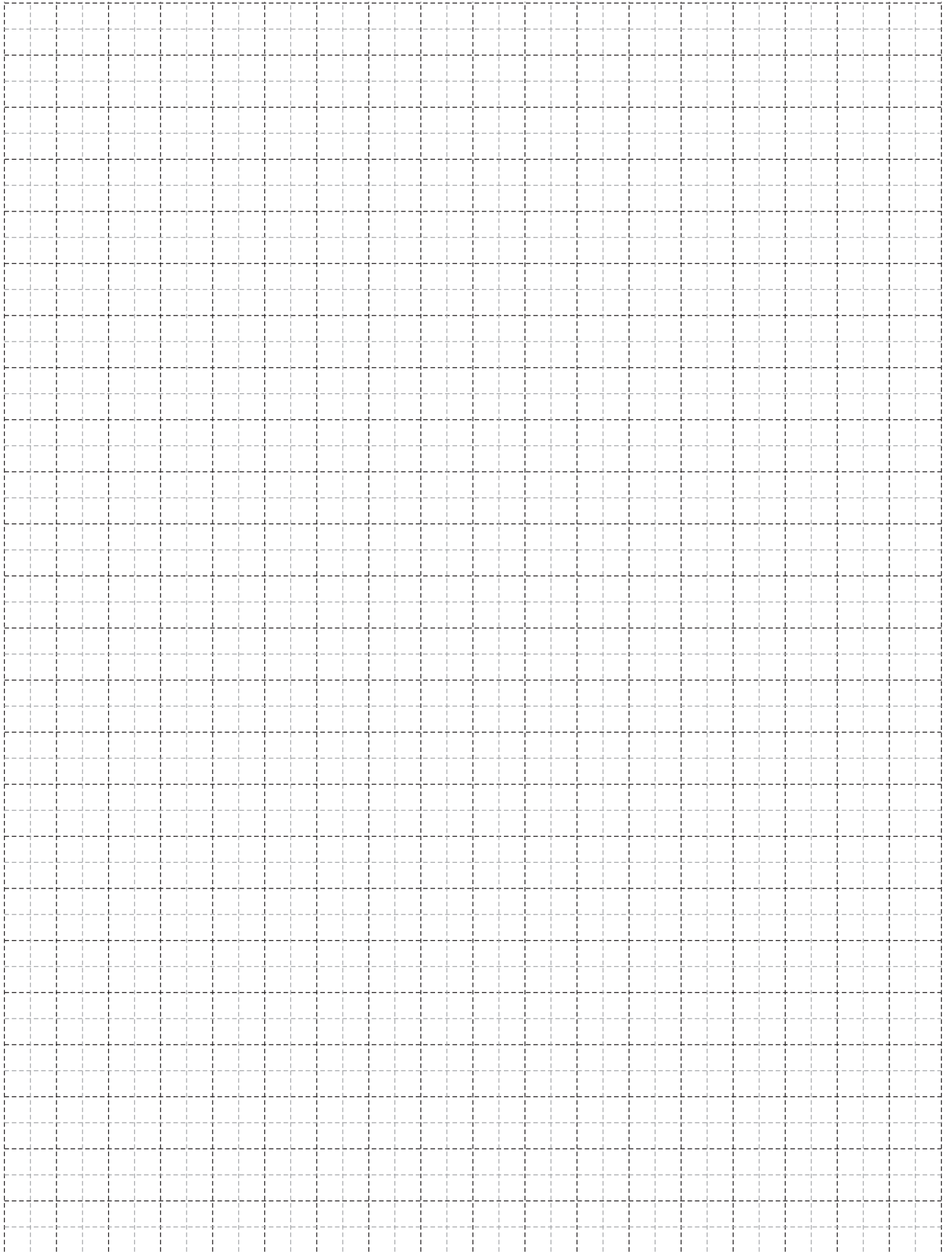
M7155 holes to glazed curtain
M7155 διάτρηση μπροστά από υαλοπέτασμα



*Για περισσότερες πληροφορίες σχετικά με το σύστημα ανάρτησης του Barcode συμβουλευτείτε τον κατάλογο M7000
*For more information about the Barcode cladding system, consult the M7000 catalog.

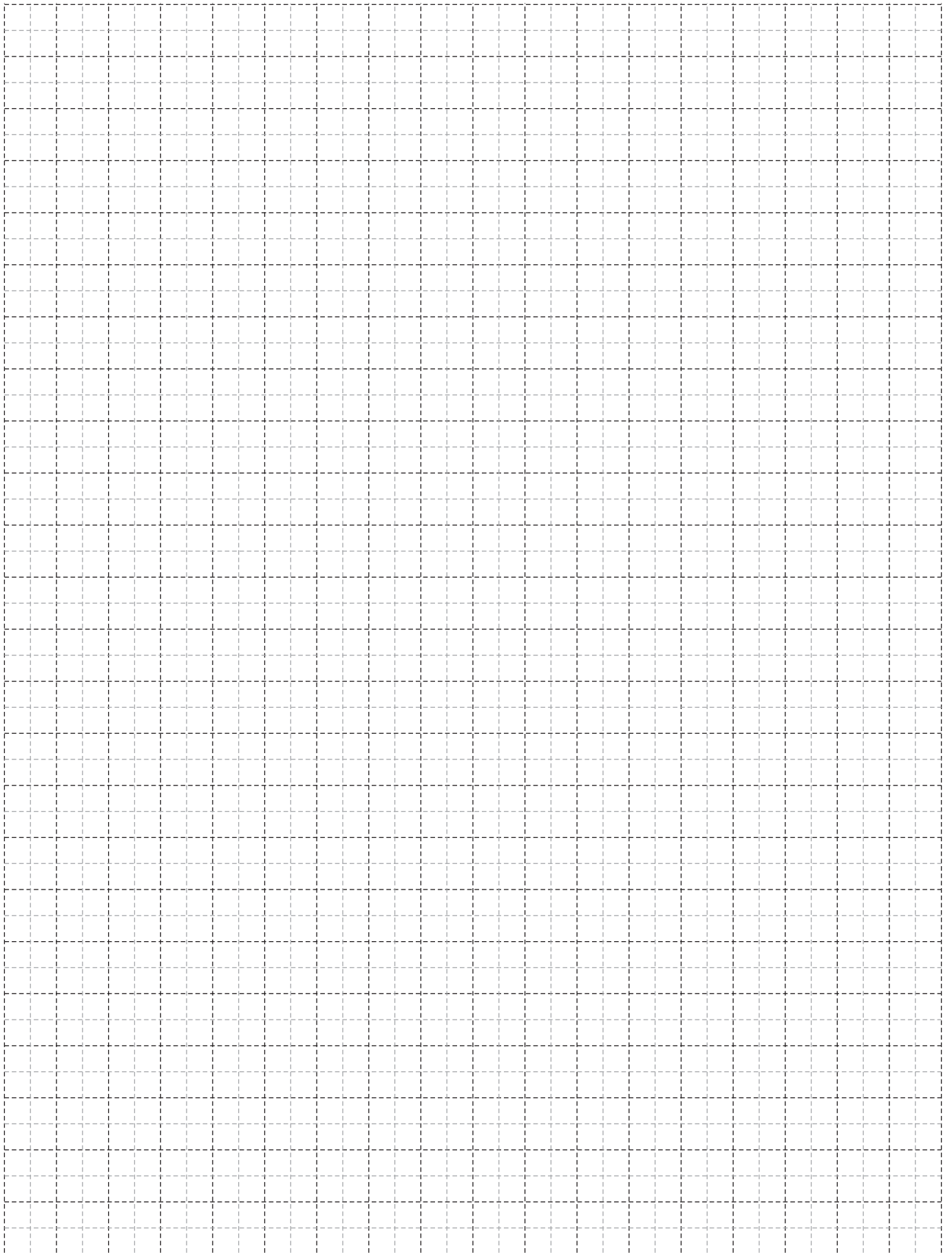
M7157 holes to glazed curtain
M7157 διάτρηση μπροστά από υαλοπέτασμα





A large, abstract graphic on the left side of the page, consisting of several overlapping diagonal bands in shades of yellow and orange, creating a dynamic, geometric pattern.

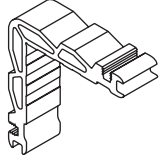
ΕΞΑΡΤΗΜΑΤΑ - ΕΛΑΣΤΙΚΑ ACCESSORIES - GASKETS



113-11-077-00 (10,9x8,3mm)
113-11-196-00 (10,9x20mm)
113-11-266-00 (10,9x27mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

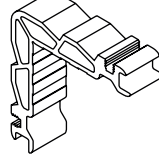


Γωνία σύνδεσης με διπλό χτύπημα
Double crimp corner cleat

113-13-121-00 (13,2x20mm)
113-13-196-00 (13,2x12,5mm)
113-13-274-00 (13,2x27mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

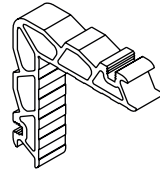


Γωνία σύνδεσης με διπλό χτύπημα
Double crimp corner cleat

113-15-060-00 (15,6x6,9mm)
113-15-156-00 (15,6x15,9mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

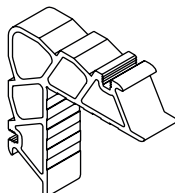


Γωνία σύνδεσης με διπλό χτύπημα
Double crimp corner cleat

113-23-046-00 (23x5mm)
113-23-196-00 (23x19,8mm)
113-23-270-00 (23x27mm)
113-23-345-00 (23x34,8mm)
113-23-355-00 (23x35,9mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

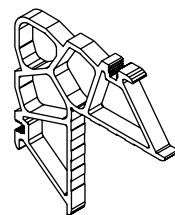


Γωνία σύνδεσης με διπλό χτύπημα
Double crimp corner cleat

113-33-056-00 (33,2x6mm)
113-33-121-00 (33,2x12,3mm)
113-33-156-00 (33,2x15,9mm)
113-33-196-00 (33,2x19,8mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

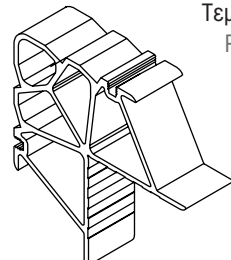


Γωνία σύνδεσης με διπλό χτύπημα
Double crimp corner cleat

113-43-056-00 (43,4x6mm)
113-43-220-00 (43,4x22,4mm)
113-43-295-00 (43,4x29,9mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

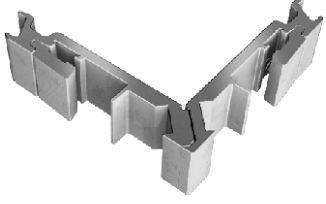


Γωνία σύνδεσης με διπλό χτύπημα
Double crimp corner cleat

125-13-196-00 (13,2x19,8mm)
125-13-274-00 (13,2x27mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

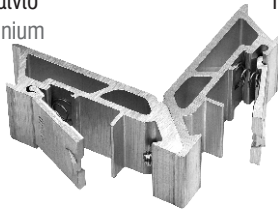


Γωνία σύνδεσης μηχανική
Mechanical corner cleat

125-23-196-00 (23x19,8mm)
125-23-270-00 (23x27mm)
125-23-345-00 (23x34,8mm)
125-23-355-00 (23x35,9mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



Γωνία σύνδεσης μηχανική
Mechanical corner cleat

125-43-220-00 (43,4x22,4mm)
125-43-295-00 (43,4x29,9mm)

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



Γωνία σύνδεσης μηχανική
Mechanical corner cleat

140-11-190-00

Χυτό αλουμίνιο
Cast aluminium

Τεμάχιο
Piece



Γωνία σύνδεσης χυτή 10,9x20mm
Mechanical corner cleat 10,9x20mm

140-11-260-00

Χυτό αλουμίνιο
Cast aluminium

Τεμάχιο
Piece



Γωνία σύνδεσης χυτή 10,9x27mm
Mechanical corner cleat 10,9x27mm

140-23-270-00

Χυτό αλουμίνιο
Cast aluminium

Τεμάχιο
Piece



Γωνία σύνδεσης χυτή 23x26,8mm
Mechanical corner cleat 23x26,8mm

180-11-801-00 Black

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γωνία επιπεδότητας | Alignment corner

180-20-010-03 Black

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γωνία επιπεδότητας | Alignment corner

180-25-005-00 Black

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γωνία επιπεδότητας | Alignment corner

180-25-010-00 Black

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γωνία επιπεδότητας | Alignment corner

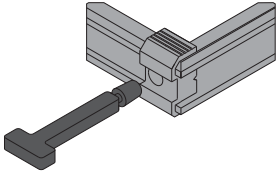
180-25-150-00 Μαύρο | Black

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γωνία επιπεδότητας | Alignment corner

720-10-683-03



Σετ πλαστικής γωνίας για spacer structural
Set for plastic for plastic corner for spacer structural

470-11-837-91

Γαλβανισμένος 100 τεμάχια / πακέτο
χάλυβας
Galvanized steel 100 pieces / package



Πείρος γωνιών σύνδεσης
με διπλό χτύπημα 4,5x7,1mm
Double crimp corner cleat pin 4,5x7,1mm

470-11-840-00

Ατσάλι | Steel Τεμάχιο | Piece



Καρφωτικό για πείρο γωνιών σύνδεσης
με διπλό χτύπημα
Pin center punch

290-00-002-00 (2mm πράσινο / green)
290-00-003-00 (3mm καφέ / brown)
290-00-004-00 (4mm κόκκινο / red)
290-00-005-00 (5mm μαύρο / black)

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Τακάκι τζαμιού | Glazing wedge

290-11-002-00

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γέφυρα τακαρίσματος | Setting block

290-11-003-00


Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γέφυρα τακαρίσματος | Setting block

290-11-004-00

Πολυαμίδιο | Polyamide Τεμάχιο | Piece



Γέφυρα τακαρίσματος | Setting block

700-92-200-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



“Π” αγκύρωσης 50mm οριζόντιες τρύπες
“U” structural bracket 50mm horizontal holes

700-92-201-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



“Π” αγκύρωσης 50mm κάθετες τρύπες
“U” structural bracket 50mm vertical holes

700-92-300-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



“Π” αγκύρωσης 97mm οριζόντιες τρύπες
“U” structural bracket 97mm horizontal holes

700-92-301-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



“Π” αγκύρωσης 97mm κάθετες τρύπες
“U” structural bracket 97mm vertical holes

700-92-500-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



“Π” αγκύρωσης 150mm οριζόντιες τρύπες
“U” structural bracket 150mm horizontal holes

700-92-501-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

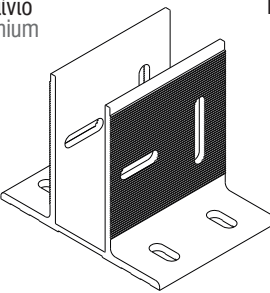


“Π” αγκύρωσης 150mm κάθετες τρύπες
“U” structural bracket 150mm vertical holes

700-70-084-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



“Π”-αγκύρωσης 50mm
“U” structural bracket 50mm.

700-92-401-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



Γωνία αγκύρωσης 91mm κάθετες τρύπες
“L” structural bracket 91mm vertical holes

700-92-100-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



Λάμα Ø12 για “Π” και γωνίες αγκύρωσης
Fastening plate Ø12 for structural brackets

700-92-400-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece

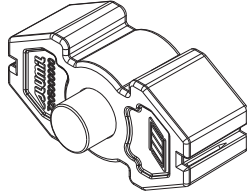


Γωνία αγκύρωσης 91mm οριζόντιες τρύπες
“L” structural bracket 91mm horizontal holes

720-50-000-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



Σύνδεσμος τραβέρσας χυτός
Transom cast T-cleat

700-50-004-00

Αλουμίνιο
Aluminium

Τεμάχιο
Piece



Δακτύλιος για “Π” και γωνίες αγκύρωσης
Ring for structural brackets

762-38-058-00

ZINC 1000 τεμάχια / πακέτο
1000 pieces / package

Λαμαρινόβίδα κεφαλωτή 4,2x16mm ISO7049
Square socket paned screw 4,2x16mm ISO7049

762-96-519-01 (St5,5x19mm)
762-96-525-01 (St5,5x25mm)
762-96-530-01 (St5,5x30mm)
762-96-535-01 (St5,5x35mm)
762-96-538-01 (St5,5x38mm)
762-96-540-01 (St5,5x40mm)
762-96-545-01 (St5,5x45mm)
762-96-550-01 (St5,5x50mm)
762-96-555-01 (St5,5x55mm)
762-96-560-01 (St5,5x60mm)
762-96-565-01 (St5,5x65mm)
762-96-557-01 (St5,5x70mm)

A2 INOX

Βίδα τύπου ISO4762 TX TYPE C
Socket screw ISO4762 TX TYPE C

762-75-516-01

A2 INOX Τεμάχιο
Piece

Ροδέλα στεγανοποίησης Ø7/Ø16
Stainless washer Ø7/Ø16

769-12-080-00

250 τεμάχια/πακέτο 250 pieces/package

Μεταλλικό παρέμβυσμα μπετού 12x80mm
Steel anchor plug 12x80mm

769-12-100-00 (12x100mm)
769-12-120-00 (12x120mm)

200 τεμάχια/πακέτο 200 pieces/package

Μεταλλικό παρέμβυσμα μπετού
Steel anchor plug

769-12-150-00

150 τεμάχια/πακέτο 150 pieces/package

Μεταλλικό παρέμβυσμα μπετού 12x150mm
Steel anchor plug 12x150mm

769-12-180-00

30 τεμάχια/πακέτο 30 pieces/package

Μεταλλικό παρέμβυσμα μπετού 12x180mm
Steel anchor plug 12x180mm

896-80-122-01

A2 INOX

Περικλόχλιο με οδόντωση M12 DIN6923
Hex flange nut M12 DIN6923

762-73-012-01

A2 INOX

Αστεροειδείς ροδέλα ασφαλείας M12 DIN6798-A
Stainless Serrated Washer DIN6798-A

762-21-210-01

A2 INOX

Βίδα με εξάγωνο κεφάλι 12x100mm DIN931
Hex cap screw 12x100mm DIN931

762-38-112-00

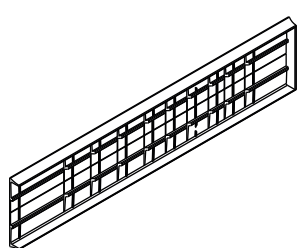
A2 INOX 1000 τεμάχια / πακέτο
1000 pieces / package

Λαμαρινόβίδα κεφαλωτή 4,2x38mm ISO7051
Square socket paned screw 4,2x38mm ISO7051

710-70-029-00

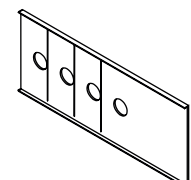
Τάπα συνδεσμου κολωνα-κολωνα
End cap for mullion-mullion connector

710-70-097-00 EPDM Rubber
710-80-097-00 Polyamide



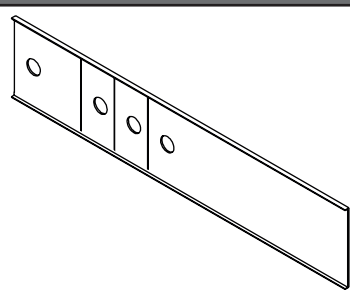
Τάπα για συνδεσμο M77097
End cap for M700097

710-71-417-03



Τάπα τραβέρσας M70014-M70017
End cap for transoms M70014-M70017

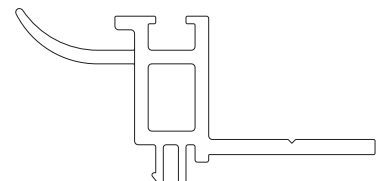
710-71-820-03



Τάπα τραβέρσας M70018-M70020
End cap for transoms M70018-M70020

720-10-931-01

PVC Μέτρα | Meters



PVC Πρόσθετο τραβέρσας & κολώνας για μονό τζάμι / PVC profile for single glazing

720-10-400-00

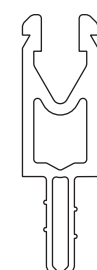
PVC Μέτρα | Meters



Βέργα θερμοδιακοπής υαλοπετάσματος 25mm/3m
Insulating bar for curtain walls 25mm/3m

720-10-600-00

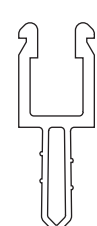
PVC Μέτρα | Meters



Βέργα θερμοδιακοπής υαλοπετάσματος 21,4mm/3m
Insulating bar for curtain walls 21,4mm/3m

720-10-910-03

PVC Μέτρα | Meters



Βέργα θερμοδιακοπής υαλοπετάσματος 14mm/3m
Insulating bar for curtain walls 14mm/3m

720-10-700-00

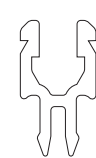
PVC Μέτρα | Meters



Βέργα θερμοδιακοπής υαλοπετάσματος 42mm/3m
Insulating bar for curtain walls 42mm/3m

720-10-500-00

PVC Μέτρα | Meters



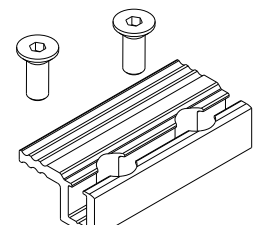
Συνεργάζεται / Cooperates

- 720-10-500-00
- 720-10-400-00
- 720-10-600-00
- 720-10-910-03
- 720-10-700-00
- 230-50-050-03

Πρόσθετο θερμοδιακοπής 10mm/3m
Adjoining Insulating bar 10mm/3m

720-10-969-00

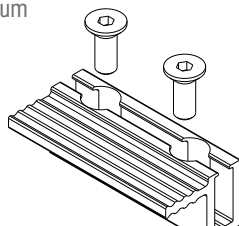
Αλουμίνιο Aluminium Τεμάχιο Piece



Κλειδωμα για structural M6-M7
Locking for structural M6-M7

720-10-970-00

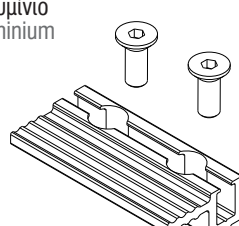
Αλουμίνιο Aluminium Τεμάχιο Piece



Κλειδωμα για structural M6-M7
Locking for structural M6-M7

720-10-968-00

Αλουμίνιο Aluminium Τεμάχιο Piece



Κλειδωμα για structural M6-M7
Locking for structural M6-M7

720-70-025-00

1 τεμάχιο / πακέτο
1 piece / package



Εξάρτημα σύνδεσης περσιδών M7
Accessory for fixing louvres to the facade

720-92-002-00

Ανοξειδωτο
Inox

Ζεύγος
Pair



Ψαλίδι προβαλλόμενου(μέγιστο φορτίο 130kg)
Top hung project out hinge(130kg maximum load)

720-00-950-00

Ανοξειδωτο | Inox

Τεμάχιο | Piece



Δεξί ψαλίδι προβαλλόμενου 930mm
(παράλληλη προβολής) | Right scissor 930mm
for top hung window (parallel opening)

720-92-001-00

Ανοξειδωτο
Inox

Ζεύγος
Pair



Ψαλίδι προβαλλόμενου(μέγιστο φορτίο 80kg)
Top hung project out hinge(80kg maximum load)

720-00-950-10

Ανοξειδωτο | Inox

Τεμάχιο | Piece



Αριστερό ψαλίδι προβαλλόμενου 930mm
(παράλληλη προβολής) | Left scissor 930mm
for top hung window (parallel opening)

310-11-501-02 Λευκό | White
310-11-501-03 Μαύρο | Black
310-11-501-04 Γκρι | Grey
310-11-501-06 Καφέ | Brown
310-11-501-43 Μπεζ | Beige
310-11-501-44 Μπλε | Blue

Πολυαμίδιο | Polyamide

Τεμάχιο | Piece



Τάπα απορροής | Weep hole end cap

720-93-103-00

Πολυαμίδιο | Polyamide

Τεμάχιο | Piece



Φωλιά χειρολαβής 720-93-102-03
Locking plate for handle 720-93-102-03

720-93-002-02 Λευκό / White
720-93-002-03 Μαύρο / Black

Αλουμίνιο | Aluminium

Σέτ | Set



Χειρολαβή προβαλλόμενου VECALU 25mm
Top hung handle VECALU 25mm

720-93-102-03

Αλουμίνιο | Aluminium

Σέτ | Set



Χειρολαβή προβαλλόμενου
Handle for top hung window

720-93-003-00

Αλουμίνιο | Aluminium

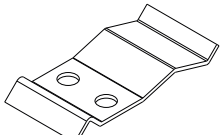
Σέτ | Set



Αντίκρουσμα χειρολαβής VECALU 9mm
Keeper for VECALU handle 9mm

720-22-456-00

1 τεμάχιο / πακέτο
1 piece / package

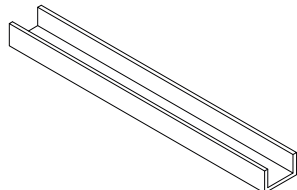


Εξάρτημα στήριξης τελειώματος υαλοπετάσματος
Curtain flashing accessories

720-10-611-00

Αλουμίνιο | Aluminium

Τεμάχιο | Piece



U-απορροής
U-Water evacuation

720-50-102-00

PVC 3 μέτρα / μπάρα
3 meters / bar

PVC προφίλ τελειώματος υαλοπετάσματος 20mm/3m / Curtain wall additional finishing PVC profile 20mm/3m

290-67-001-00

Γέφυρα τακρίσματος για φύλλα S67
Glazing bridge for S67 shales

800-07-058-00

1 τεμάχιο / πακέτο
1 piece / package

Πρεσάκι αέρος M7
Pneumatic punch machine M7

250-65-016-01

PE Μέτρα | Meters

Αυτοκόλλητο μονωτικό 14 X 2mm
Self-adhesive insulation 14 X 2mm

720-94-600-00

PE Μέτρα | Meters

Αυτοκόλλητο μονωτικό 10 X 2mm
Self-adhesive insulation 10 X 2mm

720-18-075-03 (18 x 7,5mm) Μαύρο/Black
720-18-105-03 (18 x 10,5mm) Μαύρο/Black

Σφουγγάρι | Foam Μέτρα | Meters

Ταινία αυτοκόλλητη μονής όψης
One side adhesive tape

770-89-560-03

ALUMINIUM-GLASS SILICON BLACK 600ML
Σιλικόνη αλουμινίου-γαλαί 600ml μαύρο χρώμα

770-12-050-00

Silicone primer 500ml
Αστέρι σιλικόνης 500ml

770-00-400-02 Λευκό / White

Τεμάχιο | Piece

Σιλικόνη Νο2
Silicone sausage Νο2

720-19-995-00 (50mm)
720-90-060-00 (60mm)
720-90-100-00 (100mm)
720-90-150-00 (150mm)

20 μέτρα / ρολό 20 meters / roll

Ταινία βουτυλίου για στέγες
Aluminium - butyl tape

230-10-801-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο κολώνας | Mullion gasket

230-10-910-03 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο κολώνας | Mullion gasket

230-09-418-03 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο κολώνας | Mullion gasket

230-35-001-03 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο κολώνας | Mullion gasket

230-94-100-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο φούσκα κολώνας | Mullion gasket

230-10-911-03 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο τραβέρσας | Transom gasket

230-10-929-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο σφιγκτήρα | Pressure plate gasket

230-10-916-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters

Λάστιχο σφιγκτήρα | Pressure plate gasket

710-70-003-00 Black

EPDM Τεμάχιο | Piece

Υδατολεκάνη απορροής ενδιάμεση
Water evacuation middle position

255-10-911-00 Μαύρο | Black

EPDM | EPDM Τεμάχιο | Piece

Αριστερή βουλκανισμένη γωνία λάστιχου
230-10-911-03 | Left vulcanized corner
for 230-10-911-03 gasket

255-10-912-00 Μαύρο | Black

EPDM | EPDM Τεμάχιο | Piece

Δεξιά βουλκανισμένη γωνία λάστιχου
230-10-911-03 | Right vulcanized corner
for 230-10-911-03 gasket

255-40-130-03

Τεμάχιο | Piece

Τάπα απορροής δευτέρου επιπέδου
Second Level Drain Gasket

230-10-914-01 Μαύρο | Black

ELAPRENE | ELAPRENE Μέτρα | Meters



Λάστιχο φούσκα | Gasket

230-10-956-01 Black

EPDM | EPDM Μέτρα | Meters



Λάστιχο κάσας προβαλλόμενου παράθυρου
Top hung window frame gasket

990-60-900-88 Black


EPDM | EPDM Μέτρα | Meters



Εξωτερικό ελαστικό για προβαλλόμενο Structural
Top hung window external gasket

210-11-000-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Κεντρικό λάστιχο | Central seal gasket

250-11-011-01 Μαύρο | Black

EPDM | EPDM Τεμάχιο | Piece



Βουλκανισμένη γωνία κεντρικού λάστιχου
210-11-000-01 | Vulcanized corner
for 210-11-000-01 central seal gasket

220-00-930-03 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Ελαστικό φτερού κάσας 3,5mm
Seal gasket 3,5mm for frame

720-50-100-00

2 μέτρα / μπάρα
2 meters / bar



Θερμομονωτικό αφρώδες προφίλ
29x25x2000mm
Insulating foam profile 29x25x2000mm

720-50-200-00

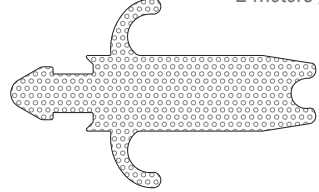
2 μέτρα / μπάρα
2 meters / bar



Θερμομονωτικό αφρώδες προφίλ
36x25x2000mm
Insulating foam profile 29x25x2000mm

720-50-200-00


2 μέτρα / μπάρα
2 meters / bar



Θερμομονωτικό αφρώδες προφίλ
41x25x2000mm
Insulating foam profile 29x25x2000mm

200-01-154-11 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Λάστιχο για πηχάκι | Glazing bead gasket

220-11-001-01 Μαύρο

EPDM | EPDM Μέτρα | Meters



Ελαστικό φτερού κάσας 2mm
Seal gasket frames 2mm

220-11-002-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Λάστιχο φτερού | Seal gasket

200-06-860-01 Μαύρο | Black
200-06-860-12 Γκρι | Grey

EPDM | EPDM Μέτρα | Meters



Λάστιχο τζαμιού έξω | Outside glazing gasket

200-01-035-01 Μαύρο | Black


EPDM | EPDM Μέτρα | Meters



Λάστιχο τζαμιού μέσα | Inner glazing gasket

767-00-602-01 Black

EPDM | EPDM Μέτρα | Meters



Λάστιχο εσωτερικής πόρτας
Gasket for internal door

230-91-103-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Ελαστικό υαλοπετάσματος σφιγτήρα 2mm
Curtian wall gasket for pressure plate 2mm

230-94-250-03 Black

EPDM | EPDM Μέτρα | Meters



Ελαστικό υαλοπετάσματος φύλλα 22mm
Curtian wall gasket sash 22mm

230-50-051-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Ελαστικό υαλοπετάσματος σφιγτήρα
Curtian wall gasket for pressure plate

230-50-052-03

EPDM | EPDM Μέτρα | Meters



Ελαστικό - νεροχύτης τραβέρσας
Transom water evacuation gasket

230-50-018-01 Μαύρο


EPDM | EPDM Μέτρα | Meters



Ελαστικό υαλοπετάσματος σφιγτήρα M500018
Curtian wall gasket for pressure plate M500018

230-00-917-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Ελαστικό υαλοπετάσματος
Curtian wall gasket

230-00-959-01 Black

EPDM | EPDM Μέτρα | Meters



Ελαστικό αρμού διαστολής 6mm για λάμα
Expansion joint gasket 6mm blade

210-15-000-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Κεντρικό λάστιχο | Central seal gasket

230-95-008-01 Μαύρο | Black

EPDM | EPDM Μέτρα | Meters



Ελαστικό σφήνα (11-13mm)
Wedge gasket

250-70-007-00 Black	
Ελαστικό αεροστεγάνωσης και υδατοστεγάνωση Weatherproof and airtight construction seals	

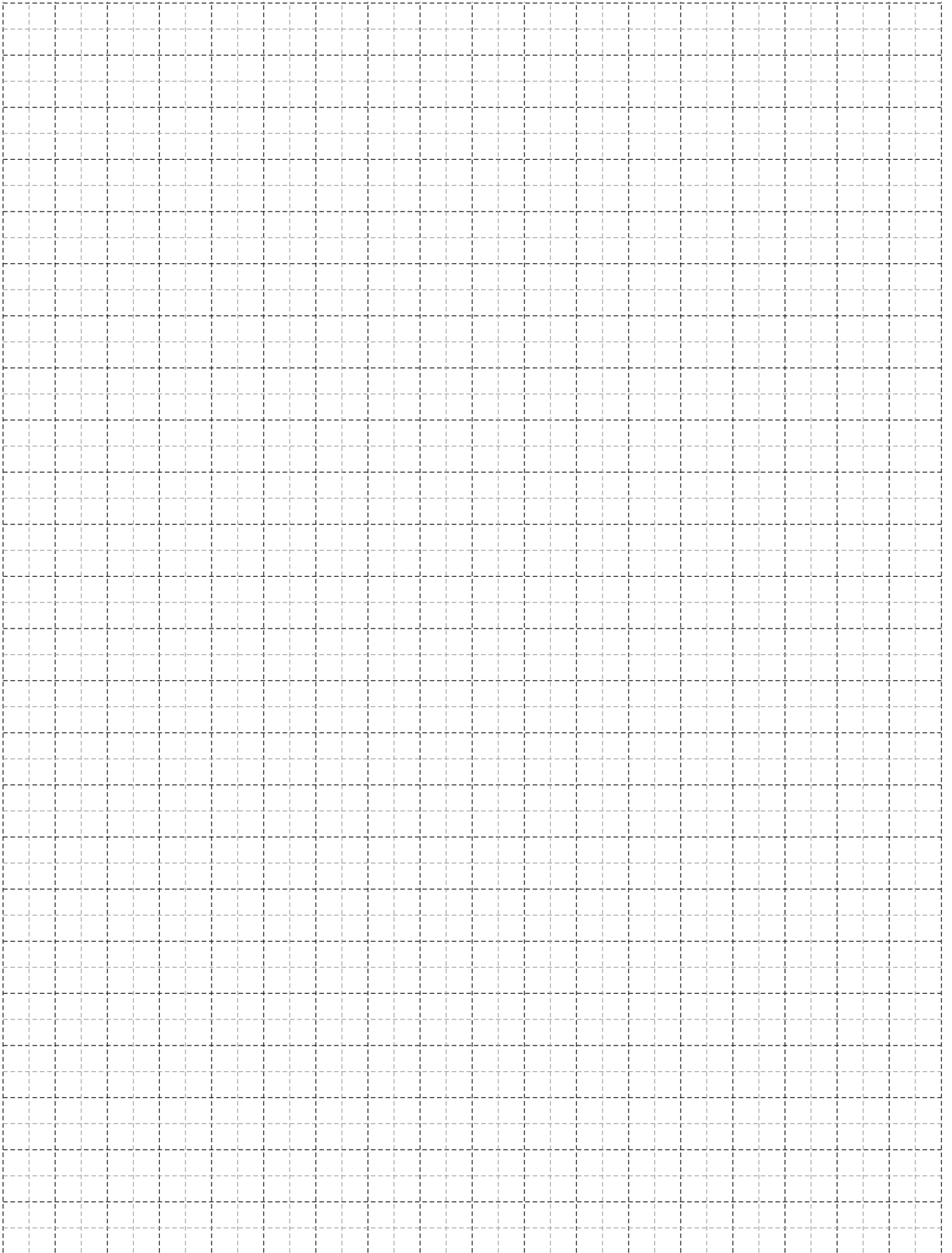
230-65-005-01 Μαύρο Black	Μέτρα Meters
EPDM EPDM	Μέτρα Meters
Λάστιχο κάσας προβαλλόμενου παράθυρου Top hung window frame gasket	

230-50-050-03	Μέτρα Meters
EPDM EPDM	Μέτρα Meters
Λαστιχο φραγμού υδατοστεγάνωσης τραβέρσας Transom barrier gasket	

250-11-270-01 Μαύρο Black	Μέτρα Meters
EPDM EPDM	Μέτρα Meters
Λάστιχο πρόσθετου M11670 M11670 beauty profile gasket	

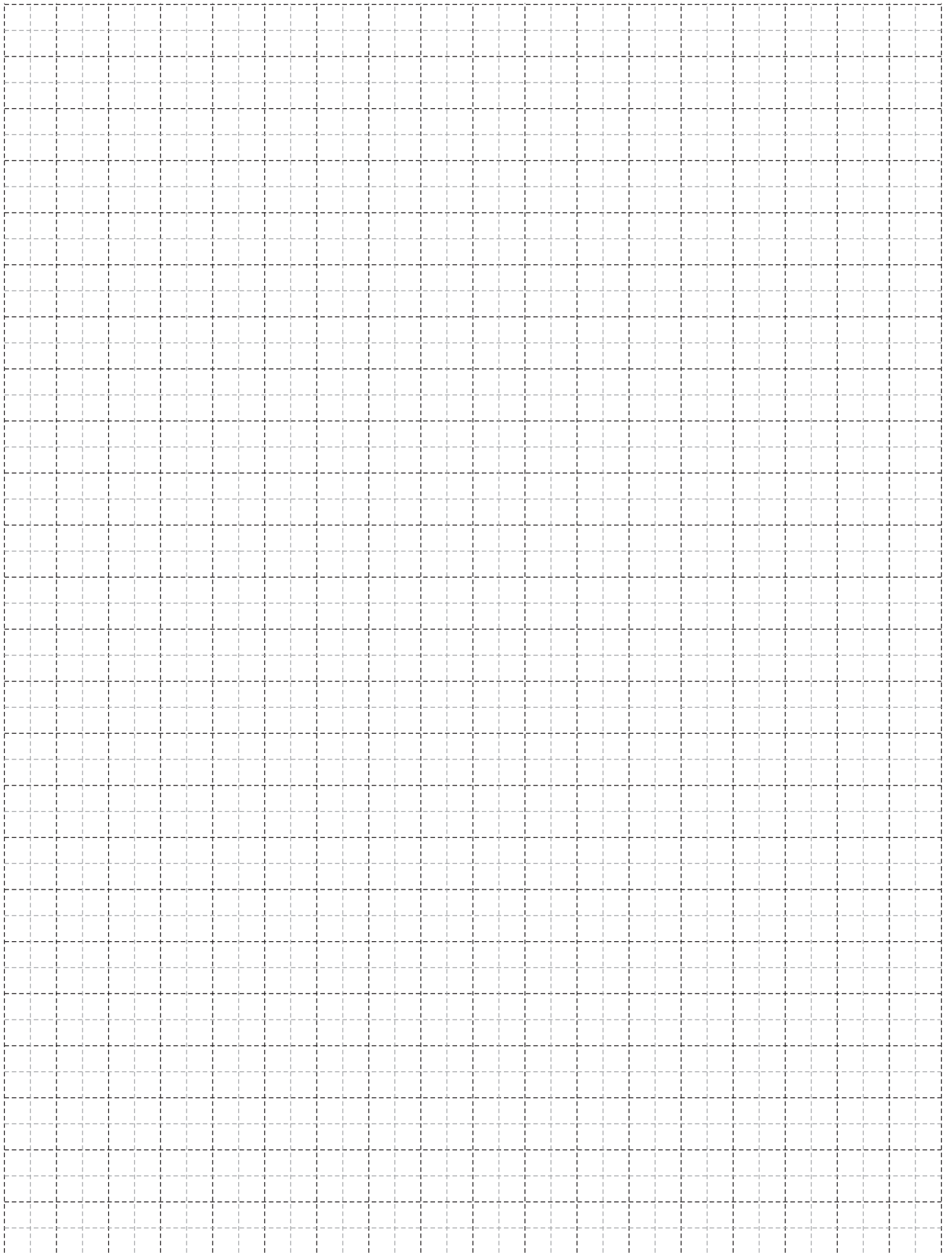
200-09-002-01 (2mm) EPDM (400 μέτρα / ρολό) 200-09-003-01 (3mm) EPDM (300 μέτρα / ρολό) 200-09-004-01 (4mm) EPDM (250 μέτρα / ρολό) 200-09-005-01 (5mm) EPDM (150 μέτρα / ρολό) 200-09-006-01 (6mm) EPDM (100 μέτρα / ρολό) 200-09-007-01 (7mm) EPDM (80 μέτρα / ρολό) 200-09-008-01 (8mm) EPDM (60 μέτρα / ρολό) 200-09-010-01 (10mm) EPDM (60 μέτρα / ρολό)	
Ελαστικό σφήνα	

720-27-150-00 (6,4mm x 6mm) Μαύρο/Black	10 μέτρα / ρολό	10 meters / roll
Ταινία αυτοκόλλητη μονής όψης Vito glazing mount 400		





ΣΤΑΤΙΚΑ STATIC



General Remarks

The following data and tables are provided as a guide for calculating wind loads, snow loads, and dead loads for various aluminum constructions. This information has been developed by engineers and is intended to be used by engineers as a supplement and not as a replacement to the European-Union building codes and standards, the national building codes and standards specific to each country or the general conditions and technical reports that apply to any particular project. Load bearing requirements and reinforcements must be specified according to individual calculations. All calculations and specifications should be made by a registered/authorize architect or engineer or company that has experience with curtain wall design in your local area. We do not assume any liability for calculations made using the following information. These calculations do not replace the necessary structural engineering surveys.

Mullion Calculations

Moment of inertia formula for the mullions

In Aluminium curtain wall systems, the choice of the profile to be used at a particular structure is based on the calculation of the required Moment of Inertia (MoI) of the aluminium profiles. The mullion must be stiff enough not to deform excessively when is subjected to the maximum design loads. The amount of mullion bending should be small enough to prevent the glazing to crack. The main loading of the mullions is due to the wind pressure. It is assumed that each mullion is loaded by the force that half glass panel transmits to it on one side, and half glass panel on the other side, resulting in rectangular loading (see figure below). The mullions can be supported in different ways, and the corresponding formula for the Moment of Inertia (MoI) must be used during calculations. Here we will consider three different mullion support configurations:

In the following equations:

I: Required Moment of Inertia of the mullion (cm⁴)

W: Wind load (kN/m²)

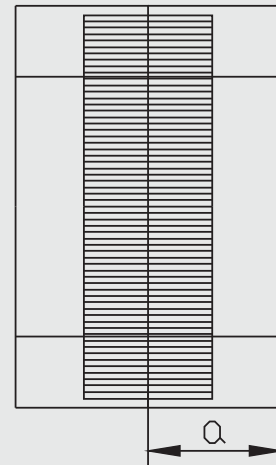
L: Length (m)

E: Young's Modulus of Elasticity (Gpa)

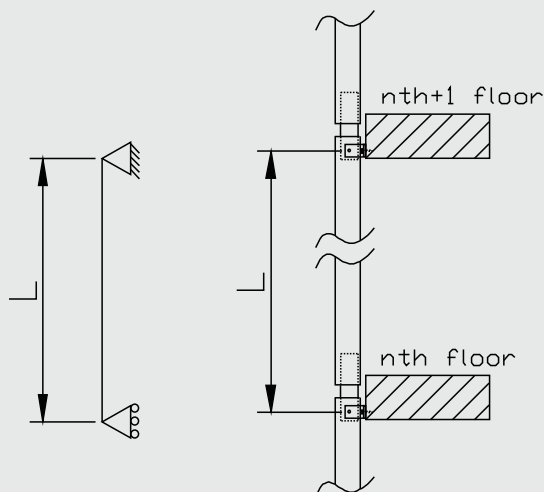
a: Distance between mullions (m)

F: \dot{a} 0,015 m whichever is smaller
(glazing requirement-see below)

One end simply supported, with rolling support at the other end.



$$I = \frac{5 \times W \times a \times L^4}{384 \times E \times F} \times 100$$



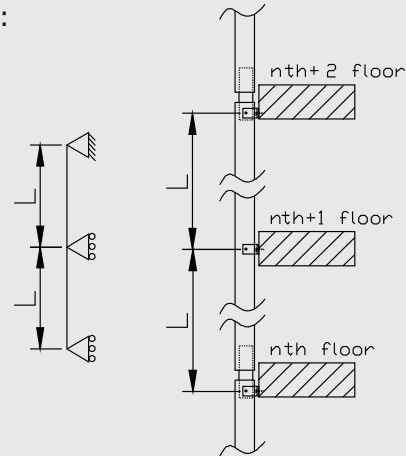
This is the typical support case for curtain wall mullions that span from floor to floor at a multistory building. The top end of the mullion can pivot around the screw that connects it with the structural bracket, and the lower end can slide on the insert that connects it with the mullion below.

Mullion Calculations

One end simply supported, and rolling support at the middle and at the other end:

$$I = \frac{5 \times W \times a \times L^4}{922 \times E \times F} \times 100$$

In this case we support the mullion with a support bracket at the middle, situated at the intermediate floor, if the mullion spans two floors. Alternatively the middle bracket can be fixed on a steel beam, mounted horizontally in the space between two floors. Note that the length L in this case is the distance between the support points and not the total mullion length.



One end simply supported, with a rolling support near the simple support, and a rolling support at the other end. Here we have two cases:

If

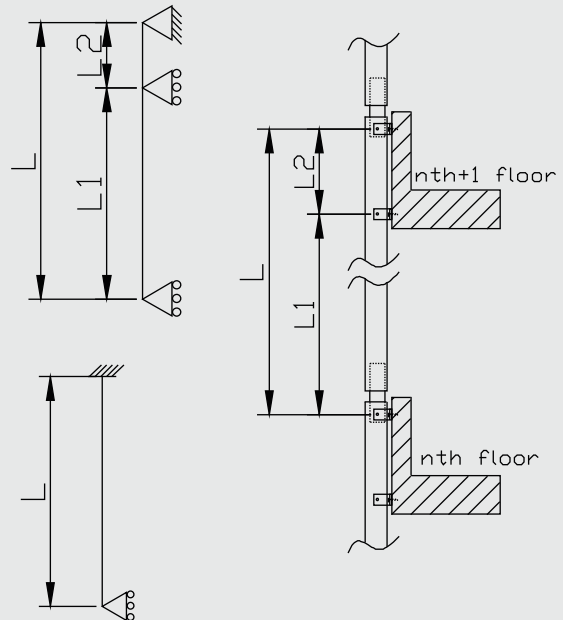
$$\frac{L_2}{L_1} \geq 0.2$$

$$I = \frac{W \times a \times L_1^2}{384 \times E \times F} \times (9 \times L \times L_1 - 3 \times L^2 - 4 \times L_1^2) \times 100$$

This formula can be used in the case where there is a reinforced concrete wall section at each floor. This allows the mullion to be supported at three points, two of them being close to each other at the top, and one at the bottom.

If

$$\frac{L_2}{L_1} < 0.2 \quad I = \frac{W \times a \times L^4}{185 \times E \times F} \times 100$$



In this case the upper end of the mullion is essentially fixed. This can be achieved using two brackets quite close to each other, or by using one bracket which is big enough to accommodate two holes and two mounting screws along the direction of the length of the mullion.

Wind Pressure Value (W)

The value of the wind pressure to be used in the calculations depends primarily on the height from the floor level where the curtain wall is situated. As a guideline, the wind pressure values with respect to the structure height are given in the table below:

Building height (m)	Wind pressure (kN/m ²)
0 - 8	0,5
8 - 20	0,8
20 - 100	1,1

Wind Pressure Value (W)

In some cases a correction factor must be used, to take into account specific environmental conditions. As a design rule, the wind pressure caused by a certain wind speed is given by the equation:

Where:

W : Wind load (kN/m²)

V : Design (maximum) wind speed (km/hr)

$$W = \frac{483 \times V^2}{10^7}$$

Allowable Deflection (F)

In accordance with EN 13830: 2003

The curtain walling shall be sufficiently rigid to resist the declared wind loads for serviceability (5.2.3. c), both positive and negative, when tested in accordance with EN 12179. It shall transfer the declared wind loads to the building's structure, safely, via the fixings intended for that purpose. The declared wind load results from testing in accordance with EN 12179.

Under the declared wind loads the maximum frontal deflection of the curtain walling's framing members shall not exceed L/200, or 15 mm, whichever is the less, when measured between the points of support or anchorage to the building's structure, in compliance with EN 13116.

Transom Calculations

The transom loading is mainly due to the weight of the glazing along the vertical direction, and due to the wind load horizontally.

Required Glazing Thickness

For single glazing, the minimum thickness is calculated using the following equations:

$$\frac{D_g}{D_s} \leq 3 \quad e = \sqrt{\frac{1000 \times D_g \times D_s \times W}{72}}$$

$$\frac{D_g}{D_s} > 3 \quad e = \frac{L \times \sqrt{1000 \times W}}{4.9}$$

Where:

e : Minimum theoretical glass thickness (mm)

W : Wind load (kN/m²)

D_s : The smaller glazing dimension (width or length) (m)

D_g : The greater glazing dimension (width or length) (m)

in accordance with EN 13830: 2003

The curtain walling shall sustain its self-weight plus any attachments incorporated into it by original design. It shall transfer the weight to the building structure, safely, via the fixings intended for that purpose.

Self-weights shall be determined in accordance with EN 1991-1-1.

The maximum deflection of any main horizontal framing from vertical loads shall not exceed L/500 or 3 mm, whichever is the less.

Always consult the glazing manufacturer when calculating the required glazing thickness and maximum allowable dimensions.

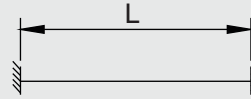
In case that a double glazing is the minimum total thickness of both glass panels will be equal to the minimum single glazing thickness multiplied by 1.5. For a Triplex glazing the minimum total thickness of both glass panels will be equal to the minimum single glazing thickness multiplied by 1.7.

Glazing Weight

After selecting the glass thickness to be used, the total weight of the glazing can be calculated: we have 2.5kg per m² of glazing area per mm of glass thickness. For example, a 10mm thick glass (or a double glazing with 5+5 or 4+6 mm glass panels) will weight 25 kg per m². Always consult with glazing manufacturing for glazing weight and maximum glazing panel size.

Moment of Inertia Formula for the Transom

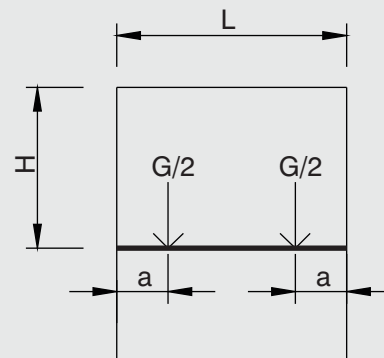
The transom is supported by two fixed supports at both ends.



Bending in the vertical plane

The required Mol for the transom for bending in the vertical plane (due to the weight of the glazing) is given by the equation:

$$I_y = \frac{G \times a}{48 \times E \times F_T} \times (3 \times L^2 - 4 \times a^2)$$



Bending in the horizontal plane

The required Mol for the transom for bending in the horizontal plane (due to the wind pressure) is given by the equation (fixed support at both ends):

$$I_x = \frac{W \times H \times a^4}{384 \times E \times F} \times 100$$

In the above equations:

I_x = Required Moment of Inertia of the transom for bending in the horizontal plane (cm⁴)

I_y = Required Moment of Inertia of the transom for bending in the vertical plane (cm⁴)

W = Wind load (kN/m²)

G = Total glazing weight (kg)

H = Glazing height (m)

a = Distance of the glazing support wedge from the transom end (a = 0,15m)

L = Width of glazing (m)

E = Young's Modulus of Elasticity (GPa)

$F_t = \frac{L}{500}$ or 0,003m , whichever is smaller (EN 13830)

$F = \frac{L}{200}$ or 0.015m, whichever is smaller (EN 13830)

Procedure for the static pre-dimensioning of facade profiles

1. Determine the required moment of inertia for mullion and transom based on wind loads and installation height.
2. Determine the required moment of inertia (deflection) for transom based on insert element weight and centre-to-centre distances.
3. Verify whether dimensioning of T-bracket and glass retainer is sufficient with regard to requirements.

The sequence of procedure may be changed, but all items for static pre-dimensioning must be checked!

Calculation Examples

The following pages give examples of various situations and how to calculate the required moment of inertia for mullions and transoms. After determining the required values you should choose the correct profile or profile combination from the profile load bearing chart on the Table 7.7.

Example of a calculation for a uniform load with two supports

Mullion pre-dimensioning

Installation height 15m
Correction factor $F_w = 1,6$

Glass width $2a$ 120cm
Glass width $2b$ 320cm
Height between supports H 300cm

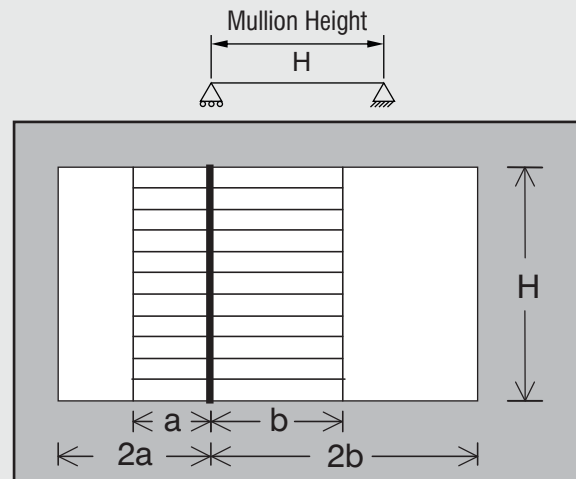
Load width
(Case C) a 60cm
Load width
(Case A) b 150cm

Required I_x in accordance with table 1

$$I_{x,a} = 30,1 \text{ cm}^4$$

$$I_{x,b} = 75,3 \text{ cm}^4$$

$$I_{x,\text{total}} = 105,4 \text{ cm}^4, I_{x,\text{req}} = F_w * I_{x,\text{total}} = 1,6 * 105,4 \text{ cm}^4 = 168,7 \text{ cm}^4$$



Transom pre-dimensioning

Installation height 15m
Correction factor $F_w = 1,6$

Glass width 200cm
Glass height H_1 1200cm
Glass height H_2 2100cm

Load width
(Case C) h_1 100cm

Load width
(Case C) h_2 250cm

Required I_x in accordance with table 1

$$I_{x,1} = 14,9 \text{ cm}^4$$

$$I_{x,2} = 7,4 \text{ cm}^4$$

$$I_{x,\text{total}} = 22,3 \text{ cm}^4, I_{x,\text{req}} = F_w * I_{x,\text{total}} = 1,6 * 22,3 \text{ cm}^4 = 35,7 \text{ cm}^4$$

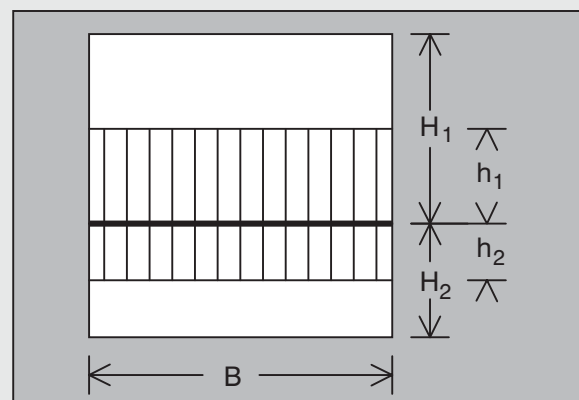


Table 1 : Required moment of inertia I_x for a uniform load with two supports
 Modulus of elasticity aluminium = 7000kN / cm⁴ Deflection $f_{max}=l / 200$ or ≤ 15 mm

$$I_x = \frac{5 W a H^4}{384 E f}$$

W = Dynamic wind pressure kN / m²

a = Load width (cm)

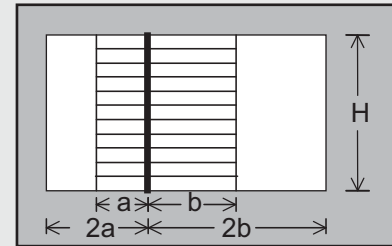
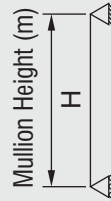
b = Load width (cm)

H = Height between brackets (cm)

E = Modulus of elasticity = 7000kN / cm⁴ H = Mullion height (cm)

f = Maximum deflection ≤ 15 mm 2a = Width between mullions (cm)

2b = Width between mullions (cm)



Load width (cm)

	20	30	40	50	60	70	80	90	100	110
100	0,4	0,6	0,7	0,9	1,1	1,3	1,5	1,7	1,9	2,0
110	0,5	0,7	1,0	1,2	1,5	1,7	2,0	2,2	2,5	2,7
120	0,6	1,0	1,3	1,6	1,9	2,3	2,6	2,9	3,2	3,5
130	0,8	1,2	1,6	2,0	2,5	2,9	3,3	3,7	4,1	4,5
140	1,0	1,5	2,0	2,6	3,1	3,6	4,1	4,6	5,1	5,6
150	1,3	1,9	2,5	3,1	3,8	4,4	5,0	5,7	6,3	6,9
160	1,5	2,3	3,0	3,8	4,6	5,3	6,1	6,9	7,6	8,4
170	1,8	2,7	3,7	4,6	5,5	6,4	7,3	8,2	9,1	10,1
180	2,2	3,3	4,3	5,4	6,5	7,6	8,7	9,8	10,8	11,9
190	2,6	3,8	5,1	6,4	7,7	8,9	10,2	11,5	12,8	14,0
200	3,0	4,5	6,0	7,4	8,9	10,4	11,9	13,4	14,9	16,4
210	3,4	5,2	6,9	8,6	10,3	12,1	13,8	15,5	17,2	18,9
220	4,0	5,9	7,9	9,9	11,9	13,9	15,8	17,8	19,8	21,8
230	4,5	6,8	9,1	11,3	13,6	15,8	18,1	20,4	22,6	24,9
240	5,1	7,7	10,3	12,9	15,4	18,0	20,6	23,1	25,7	28,3
250	5,8	8,7	11,6	14,5	17,4	20,3	23,3	26,2	29,1	32,0
260	6,5	9,8	13,1	16,3	19,6	22,9	26,2	29,4	32,7	36,0
270	7,3	11,0	14,6	18,3	22,0	25,6	29,3	33,0	36,6	40,3
280	8,2	12,3	16,3	20,4	24,5	28,6	32,7	36,8	40,8	44,9
290	9,1	13,6	18,1	22,7	27,2	31,8	36,3	40,8	45,4	49,9
300	10,0	15,1	20,1	25,1	30,1	35,2	40,2	45,2	50,2	55,2
310	11,5	17,2	22,9	28,6	34,4	40,1	45,8	51,5	57,3	63,0
320	13,0	19,5	26,0	32,5	39,0	45,5	52,0	58,5	65,0	71,5
330	14,7	22,1	29,4	36,8	44,1	51,5	58,8	66,2	73,5	80,9
340	16,6	24,9	33,1	41,4	49,7	58,0	66,3	74,6	82,9	91,1
350	18,6	27,9	37,2	46,5	55,8	65,1	74,4	83,7	93,0	102,3
360	20,8	31,2	41,7	52,1	62,5	72,9	83,3	93,7	104,1	114,6
370	23,2	34,9	46,5	58,1	69,7	81,3	93,0	104,6	116,2	127,8
380	25,9	38,8	51,7	64,6	77,6	90,5	103,4	116,4	129,3	142,2
390	28,7	43,0	57,4	71,7	86,1	100,4	114,8	129,1	143,4	157,8
400	31,7	47,6	63,5	79,4	95,2	111,1	127,0	142,9	158,7	174,6
410	35,0	52,6	70,1	87,6	105,1	122,6	140,2	157,7	175,2	192,7
420	38,6	57,9	77,2	96,5	115,8	135,1	154,4	173,6	192,9	212,2
430	42,4	63,6	84,8	106,0	127,2	148,4	169,6	190,8	212,0	233,2
440	46,5	69,7	93,0	116,2	139,4	162,7	185,9	209,2	232,4	255,6
450	50,9	76,3	101,7	127,1	152,6	178,0	203,4	228,8	254,3	279,7
460	55,5	83,3	111,0	138,8	166,6	194,3	222,1	249,9	277,6	305,4
470	60,5	90,8	121,0	151,3	181,5	211,8	242,0	272,3	302,6	332,8
480	65,8	98,7	131,7	164,6	197,5	230,4	263,3	296,2	329,1	362,1
490	71,5	107,2	143,0	178,7	214,5	250,2	286,0	321,7	357,4	393,2
500	77,5	116,3	155,0	193,8	232,5	271,3	310,0	348,8	387,5	426,3
550	113,5	170,2	227,0	283,7	340,4	397,2	453,9	510,6	567,4	624,1
600	160,7	241,1	321,4	401,8	482,1	562,5	642,9	723,2	803,6	883,9

Note: When calculating the required moment of inertia for steel, you should multiply the value on Tables 7.1-7.6 by 0,33 to compensate for the modulus of elasticity of steel. (E=21000 kN/cm²)

Table 1 : Required moment of inertia I_x for a uniform load with two supports
 Modulus of elasticity aluminium = 7000kN / cm⁴ Deflection $f_{max}=l / 200$ or $\leq 15mm$

I_x Required = $(I_{xa} + I_{xb}) * F_w$
 I_{xa} = Moment of inertia from table 5a
 I_{xb} = Moment of inertia from table 5a
 F_w = Correction factor from table 5b

This chart is made for a dynamic wind pressure of 0,5kN/m .
 A correction factor "Fw" must be used in order to calculate the required dynamic wind pressure.

Table 1B

Height above ground (m)	Wind pressure (kN/m ²)	Factor Fw
0 - 8	0,5	1,0
8 - 20	0,8	1,6
20 - 100	1,1	2,2
> 100	1,1	2,6

Load width (cm)

	120	130	140	150	160	170	180	190	200	210
100	2,2	2,4	2,6	2,8	3,0	3,2	3,3	3,5	3,7	3,9
110	3,0	3,2	3,5	3,7	4,0	4,2	4,5	4,7	5,0	5,2
120	3,9	4,2	4,5	4,8	5,1	5,5	5,8	6,1	6,4	6,8
130	4,9	5,3	5,7	6,1	6,5	6,9	7,4	7,8	8,2	8,6
140	6,1	6,6	7,1	7,7	8,2	8,7	9,2	9,7	10,2	10,7
150	7,5	8,2	8,8	9,4	10,0	10,7	11,3	11,9	12,6	13,2
160	9,1	9,9	10,7	11,4	12,2	13,0	13,7	14,5	15,2	16,0
170	11,0	11,9	12,8	13,7	14,6	15,5	16,4	17,4	18,3	19,2
180	13,0	14,1	15,2	16,3	17,4	18,4	19,5	20,6	21,7	22,8
190	15,3	16,6	17,9	19,1	20,4	21,7	23,0	24,2	25,5	26,8
200	17,9	19,3	20,8	22,3	23,8	25,3	26,8	28,3	29,8	31,3
210	20,7	22,4	24,1	25,8	27,6	29,3	31,0	32,7	34,5	36,2
220	23,8	25,7	27,7	29,7	31,7	33,7	35,7	37,6	39,6	41,6
230	27,2	29,4	31,7	33,9	36,2	38,5	40,7	43,0	45,3	47,5
240	30,9	33,4	36,0	38,6	41,1	43,7	46,3	48,9	51,4	54,0
250	34,9	37,8	40,7	43,6	46,5	49,4	52,3	55,2	58,1	61,0
260	39,2	42,5	45,8	49,0	52,3	55,6	58,8	62,1	65,4	68,7
270	43,9	47,6	51,3	54,9	58,6	62,2	65,9	69,6	73,2	76,9
280	49,0	53,1	57,2	61,3	65,3	69,4	73,5	77,6	81,7	85,8
290	54,4	59,0	63,5	68,0	72,6	77,1	81,7	86,2	90,7	95,3
300	60,3	65,3	70,3	75,3	80,4	85,4	90,4	95,4	100,4	105,5
310	68,7	74,4	80,2	85,9	91,6	97,3	103,1	108,8	114,5	120,3
320	78,0	84,5	91,0	97,5	104,0	110,5	117,0	123,5	130,0	136,5
330	88,2	95,6	102,9	110,3	117,7	125,0	132,4	139,7	147,1	154,4
340	99,4	107,7	116,0	124,3	132,6	140,9	149,1	157,4	165,7	174,0
350	111,7	121,0	130,3	139,6	148,9	158,2	167,5	176,8	186,1	195,4
360	125,0	135,4	145,8	156,2	166,6	177,0	187,5	197,9	208,3	218,7
370	139,4	151,1	162,7	174,3	185,9	197,5	209,2	220,8	232,4	244,0
380	155,1	168,1	181,0	193,9	206,9	219,8	232,7	245,6	258,6	271,5
390	172,1	186,5	200,8	215,2	229,5	243,9	258,2	272,5	286,9	301,2
400	190,5	206,3	222,2	238,1	254,0	269,8	285,7	301,6	317,5	333,3
410	210,3	227,8	245,3	262,8	280,3	297,9	315,4	332,9	350,4	367,9
420	231,5	250,8	270,1	289,4	308,7	328,0	347,3	366,6	385,9	405,2
430	254,4	275,6	296,8	318,0	339,2	360,4	381,6	402,8	424,0	445,2
440	278,9	302,1	325,4	348,6	371,8	395,1	418,3	441,6	464,8	488,0
450	305,1	330,5	356,0	381,4	406,8	432,2	457,7	483,1	508,5	533,9
460	333,1	360,9	388,7	416,4	444,2	472,0	499,7	527,5	555,2	583,0
470	363,1	393,3	423,6	453,8	484,1	514,4	544,6	574,9	605,1	635,4
480	395,0	427,9	460,8	493,7	526,6	559,5	592,5	625,4	658,3	691,2
490	428,9	464,7	500,4	536,2	571,9	607,6	643,4	679,1	714,9	750,6
500	465,0	503,8	542,5	581,3	620,0	658,8	697,5	736,3	775,0	813,8
550	680,9	737,6	794,3	851,1	907,8	964,5	1021,3	1078,0	1134,8	1191,5
600	964,3	1044,6	1125,0	1205,4	1285,7	1366,1	1446,4	1526,8	1607,1	1687,5

Note: When calculating the required moment of inertia for steel, you should multiply the value on Tables 7.1-7.6 by 0,33 to compensate for the modulus of elasticity of steel. (E=21000 kN/cm²)

Table 2 : Required moment of inertia I_x for a uniform load with three supports
 Modulus of elasticity aluminium = 7000kN / cm⁴ Deflection $f_{max}=l / 200$ or $\leq 15mm$

$$I_x = \frac{5 W a H^4}{922 E f}$$

W = Dynamic wind pressure kN / m²

a = Load width (cm)

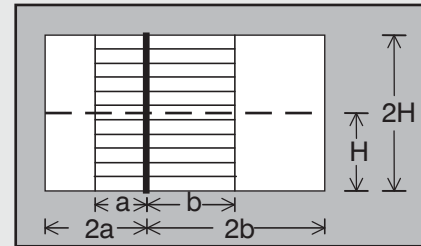
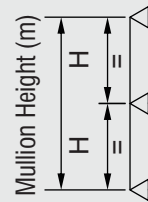
b = Load width (cm)

H = Height between brackets (cm)

E = Modulus of elasticity = 7000kN / cm⁴ H = Mullion height (cm)

f = Maximum deflection $\leq 15mm$ 2a = Width between mullions (cm)

2b = Width between mullions (cm)



Load width (cm)

Height between support brackets (cm)	Load width (cm)										
	20	30	40	50	60	70	80	90	100	110	
250	2,0	3,0	4,0	5,0	6,1	7,1	8,1	9,1	10,1	11,1	
260	2,4	3,5	4,7	5,9	7,1	8,3	9,4	10,6	11,8	13,0	
270	2,7	4,1	5,5	6,9	8,2	9,6	11,0	12,4	13,7	15,1	
280	3,2	4,8	6,3	7,9	9,5	11,1	12,7	14,3	15,9	17,5	
290	3,7	5,5	7,3	9,1	11,0	12,8	14,6	16,4	18,3	20,1	
300	4,2	6,3	8,4	10,5	12,6	14,6	16,7	18,8	20,9	23,0	
310	4,8	7,2	9,5	11,9	14,3	16,7	19,1	21,5	23,8	26,2	
320	5,4	8,1	10,8	13,5	16,2	19,0	21,7	24,4	27,1	29,8	
330	6,1	9,2	12,2	15,3	18,4	21,4	24,5	27,6	30,6	33,7	
340	6,9	10,4	13,8	17,3	20,7	24,2	27,6	31,1	34,5	38,0	
350	7,8	11,6	15,5	19,4	23,3	27,1	31,0	34,9	38,8	42,6	
360	8,7	13,0	17,3	21,7	26,0	30,4	34,7	39,0	43,4	47,7	
370	9,7	14,5	19,4	24,2	29,0	33,9	38,7	43,6	48,4	53,2	
380	10,8	16,2	21,5	26,9	32,3	37,7	43,1	48,5	53,8	59,2	
390	11,9	17,9	23,9	29,9	35,8	41,8	47,8	53,8	59,7	65,7	
400	13,2	19,8	26,4	33,1	39,7	46,3	52,9	59,5	66,1	72,7	
410	14,6	21,9	29,2	36,5	43,8	51,1	58,4	65,7	73,0	80,3	
420	16,1	24,1	32,1	40,2	48,2	56,2	64,3	72,3	80,4	88,4	
430	17,7	26,5	35,3	44,1	53,0	61,8	70,6	79,5	88,3	97,1	
440	19,4	29,0	38,7	48,4	58,1	67,8	77,4	87,1	96,8	106,5	
450	21,2	31,8	42,4	52,9	63,5	74,1	84,7	95,3	105,9	116,5	

N o t e :
 The longest bar available from Alumil is 750cm. Therefore it is unnecessary to calculate a mullion height greater than 750cm. This means the height between the support brackets for a three support load must be less than or equal to 375cm. For dimensions greater than those found on tables 5a and 6a, please consult with the engineering department at your local Alumil supplier.

Note: When calculating the required moment of inertia for steel, you should multiply the value on Tables 7.1-7.6 by 0,33 to compensate for the modulus of elasticity of steel. (E=21000 kN/cm²)

Table 2 : Required moment of inertia I_x for a uniform load with three supports
 Modulus of elasticity aluminium = 7000kN / cm² Deflection $f_{max}=l / 200$ or $\leq 15mm$

I_x Required = $(I_{xa} + I_{xb}) * F_w$
 I_{xa} = Moment of inertia from table 5a
 I_{xb} = Moment of inertia from table 5a
 F_w = Correction factor from table 5b

This chart is made for a dynamic wind pressure of 0,5kN/m .
 A correction factor "Fw" must be used in order to calculate the required dynamic wind pressure.

Table 2B

Height above ground (m)	Wind pressure (kN/m ²)	Factor Fw
0 - 8	0,5	1,0
8 - 20	0,8	1,6
20 - 100	1,1	2,2
> 100	1,1	2,6

Load width (cm)

	120	130	140	150	160	170	180	190	200	210
250	12,1	13,1	14,1	15,1	16,1	17,1	18,2	19,2	20,2	21,2
260	14,2	15,3	16,5	17,7	18,9	20,1	21,2	22,4	23,6	24,8
270	16,5	17,8	19,2	20,6	22,0	23,3	24,7	26,1	27,4	28,8
280	19,0	20,6	22,2	23,8	25,4	27,0	28,6	30,2	31,7	33,3
290	21,9	23,7	25,6	27,4	29,2	31,0	32,9	34,7	36,5	38,4
300	25,1	27,2	29,3	31,4	33,5	35,6	37,7	39,7	41,8	43,9
310	28,6	31,0	33,4	35,8	38,2	40,5	42,9	45,3	47,7	50,1
320	32,5	35,2	37,9	40,6	43,3	46,0	48,7	51,4	54,2	56,9
330	36,7	39,8	42,9	45,9	49,0	52,1	55,1	58,2	61,2	64,3
340	41,4	44,9	48,3	51,8	55,2	58,7	62,1	65,6	69,0	72,5
350	46,5	50,4	54,3	58,1	62,0	65,9	69,8	73,6	77,5	81,4
360	52,0	56,4	60,7	65,1	69,4	73,7	78,1	82,4	86,7	91,1
370	58,1	62,9	67,8	72,6	77,4	82,3	87,1	92,0	96,8	101,6
380	64,6	70,0	75,4	80,8	86,2	91,5	96,9	102,3	107,7	113,1
390	71,7	77,7	83,6	89,6	95,6	101,6	107,5	113,5	119,5	125,5
400	79,3	85,9	92,6	99,2	105,8	112,4	119,0	125,6	132,2	138,8
410	87,6	94,9	102,2	109,5	116,8	124,1	131,3	138,6	145,9	153,2
420	96,4	104,5	112,5	120,5	128,6	136,6	144,6	152,7	160,7	168,7
430	105,9	114,8	123,6	132,4	141,3	150,1	158,9	167,7	176,6	185,4
440	116,1	125,8	135,5	145,2	154,9	164,5	174,2	183,9	193,6	203,3
450	127,1	137,7	148,3	158,5	169,4	180,0	190,6	201,2	211,8	222,4

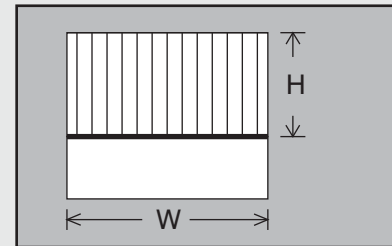
Height between support brackets (cm)

Note: When calculating the required moment of inertia for steel, you should multiply the value on Tables 7.1-7.6 by 0,33 to compensate for the modulus of elasticity of steel. (E=21000 kN/cm²)

Table 3 : Required moment of inertia I_x for dead loads on transom
 Modulus of elasticity aluminium = 7000kN / cm⁴ Deflection fmax=l / 500 or ≤ 3mm

G = Force of glass (Kp)
 a = Distance to glazing support (15cm)
 H = Glass height (cm)
 W = Glass width (cm)
 E = Modulus of elasticity = 7000kN / cm⁴
 f = Maximum deflection l / 500 ή ≤ 3mm

$$I_{y, req} = \frac{G}{24 E f} a (3l^2 - 4a^2)$$



Glass width (cm) This chart is for glazing thickness 12mm (6/12/6 ή 6/15/6)

	20	30	40	50	60	70	80	90	100	110
100	0,0	0,1	0,3	0,5	0,7	1,0	1,3	1,7	2,1	2,6
110	0,0	0,1	0,3	0,5	0,8	1,1	1,5	1,9	2,3	2,8
120	0,0	0,2	0,3	0,6	0,9	1,2	1,6	2,1	2,6	3,1
130	0,0	0,2	0,4	0,6	0,9	1,3	1,7	2,2	2,8	3,4
140	0,0	0,2	0,4	0,7	1,0	1,4	1,9	2,4	3,0	3,6
150	0,0	0,2	0,4	0,7	1,1	1,5	2,0	2,6	3,2	3,9
160	0,0	0,2	0,5	0,8	1,2	1,6	2,1	2,7	3,4	4,1
170	0,0	0,2	0,5	0,8	1,2	1,7	2,3	2,9	3,6	4,4
180	0,0	0,2	0,5	0,9	1,3	1,8	2,4	3,1	3,8	4,7
190	0,0	0,3	0,5	0,9	1,4	1,9	2,5	3,3	4,0	4,9
200	0,0	0,3	0,6	1,0	1,4	2,0	2,7	3,4	4,3	5,2
210	0,0	0,3	0,6	1,0	1,5	2,1	2,8	3,6	4,5	5,4
220	0,0	0,3	0,6	1,1	1,6	2,2	2,9	3,8	4,7	5,7
230	0,1	0,3	0,7	1,1	1,7	2,3	3,1	3,9	4,9	6,0
240	0,1	0,3	0,7	1,2	1,7	2,4	3,2	4,1	5,1	6,2
250	0,1	0,3	0,7	1,2	1,8	2,5	3,3	4,3	5,3	6,5
260	0,1	0,3	0,7	1,3	1,9	2,6	3,5	4,4	5,5	6,7
270	0,1	0,4	0,8	1,3	2,0	2,7	3,6	4,6	5,7	7,0
280	0,1	0,4	0,8	1,4	2,0	2,8	3,7	4,8	6,0	7,2
290	0,1	0,4	0,8	1,4	2,1	2,9	3,9	5,0	6,2	7,5
300	0,1	0,4	0,9	1,4	2,2	3,0	4,0	5,1	6,4	7,8
310	0,1	0,4	0,9	1,5	2,2	3,1	4,1	5,3	6,6	8,0
320	0,1	0,4	0,9	1,5	2,3	3,2	4,3	5,5	6,8	8,3
330	0,1	0,4	0,9	1,6	2,4	3,3	4,4	5,6	7,0	8,5
340	0,1	0,4	1,0	1,6	2,5	3,4	4,5	5,8	7,2	8,8
350	0,1	0,5	1,0	1,7	2,5	3,5	4,7	6,0	7,4	9,1
360	0,1	0,5	1,0	1,7	2,6	3,6	4,8	6,2	7,7	9,3
370	0,1	0,5	1,1	1,8	2,7	3,7	5,0	6,3	7,9	9,6
380	0,1	0,5	1,1	1,8	2,8	3,8	5,1	6,5	8,1	9,8
390	0,1	0,5	1,1	1,9	2,8	3,9	5,2	6,7	8,3	10,1
400	0,1	0,5	1,1	1,9	2,9	4,0	5,4	6,8	8,5	10,4
410	0,1	0,5	1,2	2,0	3,0	4,1	5,5	7,0	8,7	10,6
420	0,1	0,6	1,2	2,0	3,0	4,2	5,6	7,2	8,9	10,9
430	0,1	0,6	1,2	2,1	3,1	4,3	5,8	7,4	9,2	11,1
440	0,1	0,6	1,3	2,1	3,2	4,4	5,9	7,5	9,4	11,4
450	0,1	0,6	1,3	2,2	3,3	4,5	6,0	7,7	9,6	11,6
460	0,1	0,6	1,3	2,2	3,3	4,6	6,2	7,9	9,8	11,9
470	0,1	0,6	1,3	2,3	3,4	4,7	6,3	8,0	10,0	12,2
480	0,1	0,6	1,4	2,3	3,5	4,8	6,4	8,2	10,2	12,4
490	0,1	0,6	1,4	2,4	3,5	4,9	6,6	8,4	10,4	12,7
500	0,1	0,7	1,4	2,4	3,6	5,0	6,7	8,6	10,6	12,9
550	0,1	0,7	1,6	2,7	4,0	5,6	7,4	9,4	11,7	14,2
600	0,1	0,8	1,7	2,9	4,3	6,1	8,0	10,3	12,8	15,5

Note: When calculating the required moment of inertia for steel, you should multiply the value on Tables 7.1-7.6 by 0,33 to compensate for the modulus of elasticity of steel. (E=21000 kN/cm²)

Table 3 : Required moment of inertia I_x for dead loads on transom
 Modulus of elasticity aluminium = 7000kN / cm⁴ Deflection $f_{max} = l / 500$ or $\leq 3mm$

$I_{y, req} = I_y * F_w$

I_y = Required moment of inertia from table 7a

F_w = Correction factor from table 7b

Table 3B : Correction factor F_w

Glazing thickness	Factor F_w	Glazing thickness	Factor F_w
6	0,50	16	1,33
8	0,67	18	1,50
10	0,80	20	1,67
12	1,00	22	1,83
14	1,16	24	2,00

Glass width (cm) This chart is for glazing thickness 12mm (6/12/6 ή 6/15/6)

	120	130	140	150	160	170	180	190	200	210
100	3,1	3,6	4,2	4,9	5,9	7,1	8,5	9,9	11,6	13,5
110	3,4	4,0	4,7	5,4	6,5	7,8	9,3	10,9	12,8	14,8
120	3,7	4,4	5,1	5,8	7,1	8,5	10,1	11,9	13,9	16,1
130	4,0	4,7	5,5	6,3	7,7	9,2	11,0	12,9	15,1	17,5
140	4,3	5,1	5,9	6,8	8,3	10,0	11,8	13,9	16,3	18,8
150	4,6	5,5	6,4	7,3	8,9	10,7	12,7	14,9	17,4	20,2
160	4,9	5,8	6,8	7,8	9,5	11,4	13,5	15,9	18,6	21,5
170	5,3	6,2	7,2	8,3	10,1	12,1	14,4	16,9	19,7	22,9
180	5,6	6,6	7,6	8,8	10,7	12,8	15,2	17,9	20,9	24,2
190	5,9	6,9	8,0	9,3	11,2	13,5	16,1	18,9	22,1	25,6
200	6,2	7,3	8,5	9,7	11,8	14,2	16,9	19,9	23,2	26,9
210	6,5	7,6	8,9	10,2	12,4	14,9	17,7	20,9	24,4	28,2
220	6,8	8,0	9,3	10,7	13,0	15,6	18,6	21,9	25,5	29,6
230	7,1	8,4	9,7	11,2	13,6	16,4	19,4	22,9	26,7	30,9
240	7,4	8,7	10,2	11,7	14,2	17,1	20,3	23,9	27,9	32,3
250	7,7	9,1	10,6	12,2	14,8	17,8	21,1	24,9	29,0	33,6
260	8,0	9,5	11,0	12,7	15,4	18,5	22,0	25,9	30,2	35,0
270	8,4	9,8	11,4	13,1	16,0	19,2	22,8	26,9	31,4	36,3
280	8,7	10,2	11,9	13,6	16,6	19,9	23,7	27,9	32,5	37,7
290	9,0	10,6	12,3	14,1	17,2	20,6	24,5	28,8	33,7	39,0
300	9,3	10,9	12,7	14,6	17,8	21,3	25,4	29,8	34,8	40,4
310	9,6	11,3	13,1	15,1	18,4	22,0	26,2	30,8	36,0	41,7
320	9,9	11,7	13,5	15,6	18,9	22,8	27,0	31,8	37,2	43,0
330	10,2	12,0	14,0	16,1	19,5	23,5	27,9	32,8	38,3	44,4
340	10,5	12,4	14,4	16,6	20,1	24,2	28,7	33,8	39,5	45,7
350	10,8	12,7	14,8	17,0	20,7	24,9	29,6	34,8	40,6	47,1
360	11,1	13,1	15,2	17,5	21,3	25,6	30,4	35,8	41,8	48,4
370	11,4	13,5	15,7	18,0	21,9	26,3	31,3	36,8	43,0	49,8
380	11,8	13,8	16,1	18,5	22,5	27,0	32,1	37,8	44,1	51,1
390	12,1	14,2	16,5	19,0	23,1	27,7	33,0	38,8	45,3	52,5
400	12,4	14,6	16,9	19,5	23,7	28,4	33,8	39,8	46,4	53,8
410	12,7	14,9	17,4	20,0	24,3	29,2	34,6	40,8	47,6	55,2
420	13,0	15,3	17,8	20,5	24,9	29,9	35,5	41,8	48,8	56,5
430	13,3	15,7	18,2	20,9	25,5	30,6	36,3	42,8	49,9	57,8
440	13,6	16,0	18,6	21,4	26,0	31,3	37,2	43,8	51,1	59,2
450	13,9	16,4	19,1	21,9	26,6	32,0	38,0	44,8	52,3	60,5
460	14,2	16,8	19,5	22,4	27,2	32,7	38,9	45,8	53,4	61,9
470	14,5	17,1	19,9	22,9	27,8	33,4	39,7	46,8	54,6	63,2
480	14,8	17,5	20,3	23,4	28,4	34,1	40,6	47,8	55,7	64,6
490	15,2	17,8	20,7	23,9	29,0	34,8	41,4	48,7	56,9	65,9
500	15,5	18,2	21,2	24,4	29,6	35,6	42,3	49,7	58,1	67,3
550	17,0	20,0	23,3	26,8	32,6	39,1	46,5	54,7	63,9	74,0
600	18,6	21,8	25,4	29,2	35,5	42,7	50,7	59,7	69,7	80,7

Note: When calculating the required moment of inertia for steel, you should multiply the value on Tables 7.1-7.6 by 0,33 to compensate for the modulus of elasticity of steel. ($E=21000$ kN/cm²)

Pre-dimensioning of a three-hinged frame

Load tables based on a uniform of 1 kN/m²

Required moment of inertia for rafter due to wind load, snow load and dead weight with roof inclination (normal area, no corners or edges)

E = 7000 kN/cm²

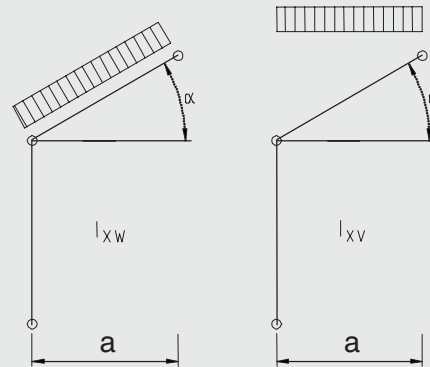
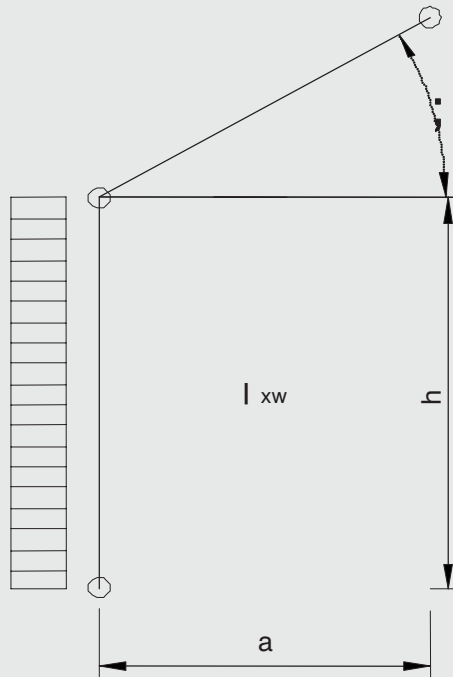


Table 4 : Moment of inertia for various inclinations

Inclination	15°		30°		45°		60°	
	l _{xw} rafter cm ⁴	l _{xw} rafter cm ⁴	l _{xw} rafter cm ⁴	l _{xw} rafter cm ⁴	l _{xw} rafter cm ⁴	l _{xw} rafter cm ⁴	l _{xw} rafter cm ⁴	l _{xw} rafter cm ⁴
0,5	0,8	0,7	1,1	0,8	2,0	1,0	5,6	1,4
0,6	1,3	1,2	1,9	1,4	3,4	1,7	9,6	2,4
0,7	2,1	2,0	2,9	2,2	5,4	2,7	15,3	3,8
0,8	3,2	3,0	4,4	3,3	8,1	4,0	22,9	5,7
0,9	4,5	4,2	6,3	4,7	11,5	5,8	32,5	8,1
1,0	6,2	5,8	8,6	6,4	15,8	7,9	44,6	11,2
1,1	8,2	7,7	11,4	8,6	21,0	10,5	59,4	14,9
1,2	10,7	10,0	14,8	11,1	27,3	13,6	77,1	19,3
1,3	13,6	12,7	18,9	14,2	34,7	17,3	98,1	24,5
1,4	17,0	15,9	23,6	17,7	43,3	21,7	122,5	30,6
1,5	20,9	19,5	29,0	21,7	53,3	26,6	150,7	37,7
1,6	25,4	23,7	35,2	26,4	64,6	32,3	182,9	45,7
1,7	30,4	28,4	42,2	31,7	77,5	38,8	219,3	54,8
1,8	36,1	33,7	50,1	37,6	92,1	46,0	260,4	65,1
1,9	42,5	39,6	58,9	44,2	108,3	54,1	306,2	76,6
2,0	49,5	46,2	68,7	51,5	126,3	63,1	357,1	89,3
2,1	57,3	53,5	79,6	59,7	146,2	73,1	413,4	103,4
2,2	65,9	61,5	91,5	68,6	168,1	84,0	475,4	118,8
2,3	75,3	70,3	104,5	78,4	192,0	96,0	543,2	135,8
2,4	85,6	79,9	118,8	89,1	218,2	109,1	617,1	154,3
2,5	96,7	90,3	134,2	100,7	246,6	123,3	697,5	174,4
2,6	108,8	101,5	151,0	113,3	277,4	138,7	784,6	196,2
2,7	121,9	113,7	169,1	126,8	310,7	155,3	878,7	219,7
2,8	135,9	126,8	188,6	141,5	346,5	173,2	980,0	245,0
2,9	151,0	140,9	209,5	157,2	384,9	192,5	1088,8	272,2
3,0	167,2	156,0	232,0	174,0	426,2	213,1	1205,4	301,3
3,1	184,5	172,1	256,0	192,0	470,2	235,1	1330,0	332,5
3,2	202,9	189,3	281,5	211,1	517,2	258,6	1462,9	365,7
3,3	222,5	207,6	308,8	231,6	567,2	283,6	1604,3	401,1
3,4	243,4	227,1	337,7	253,3	620,4	310,2	1754,6	438,7
3,5	265,5	247,7	368,4	276,3	676,7	338,4	1914,1	478,5
3,6	288,9	269,5	400,8	300,6	736,4	368,2	2082,9	520,7
3,7	313,6	292,6	435,2	326,4	799,5	399,7	2261,3	565,3
3,8	339,8	317,0	471,4	353,6	866,1	433,0	2449,6	612,4
3,9	367,3	342,7	509,6	382,2	936,3	468,1	2648,2	662,0
4,0	396,3	369,7	549,9	412,4	1010,2	505,1	2857,1	714,3
4,1	426,8	398,2	592,1	444,1	1087,8	543,9	3076,8	769,2
4,2	65,9	61,5	91,5	68,6	168,1	84,0	475,4	118,8
4,3	492,3	459,3	683,1	512,3	1254,9	627,5	3549,4	887,4
4,4	527,5	492,1	731,9	548,9	1344,5	672,3	3802,9	950,7
4,5	564,2	526,4	782,9	587,2	1438,3	719,1	4068,1	1017,0
4,6	602,7	562,3	836,3	627,2	1536,3	768,2	4345,4	1086,3
4,7	642,9	599,8	892,0	669,0	1638,7	819,4	4635,0	1158,7
4,8	684,8	638,9	950,2	712,6	1745,5	872,8	4937,1	1234,3
4,9	728,5	679,7	1010,8	758,1	1856,9	928,5	5252,2	1313,0
5,0	774,0	722,2	1073,9	805,5	1973,0	986,5	5580,4	1395,1

Note: When calculating the required moment of inertia for steel, you should multiply the value on Tables 7.1-7.6 by 0,33 to compensate for the modulus of elasticity of steel. (E=21000 kN/cm²)

Required mullion moment of inertia due to uniform load
(with $f_{perm} = h/300$) with load 1 kN/m^2 and width 1m



Kink height h (m)	I_{xw} mullion cm^4
1,0	5,6
1,1	7,4
1,2	9,6
1,3	12,3
1,4	15,3
1,5	18,8
1,6	22,9
1,7	27,4
1,8	32,5
1,9	38,3
2,0	44,6
2,1	51,7
2,2	59,4
2,3	67,9
2,4	77,1
2,5	87,2
2,6	98,1
2,7	109,8
2,8	122,5
2,9	136,1
3,0	150,7
3,1	166,2
3,2	182,9
3,3	200,5
3,4	219,3
3,5	239,3
3,6	260,4
3,7	282,7
3,8	306,2
3,9	331,0
4,0	357,1

Calculation parameters

B = Load width (m)

q = Dynamic pressure according to DIN 1055, part 4

Building height0 - 8m $q = 0,5\text{kN/m}^2$

Building height8 - 20m $q = 0,8\text{kN/m}^2$

Building height20 - 100m $q = 1,1\text{kN/m}^2$

q_S = Snow load in accordance with DIN 1055, part 5, in dependence on the location

q_E = Dead weight in accordance with DIN 1055, part 1, in dependence on the insert element

K_S = Diminution factor for snow load in accordance with DIN 1055, part 5

g = Load conversion factor for dead weight with sloping roofs

c_p = Aerodynamic pressure coefficient in accordance with DIN 1055, part 4

Roof inclination	15°	30°	45°	60°
k_s	1,0	1,0	0,6	0,1
g	1,035	1,155	1,414	2,000
c_p	Factor according to the valid standard			

List of loads for final dimensioning of three-hinged frame loads

Mullion dimensioning

For the type of load "wind pressure" the result is as follows:

$$I_{req, mullion} = B \cdot l_{xw mullion} \cdot q \cdot (c_p \cdot 1,25)$$

For the type of load "wind suction" the result is as follows:

$$I_{req, mullion} = B \cdot l_{xw mullion} \cdot q \cdot c_p$$

Rafter dimensioning

For the type of load "dead weight" and "snow load":

$$I_{req, rafter} = B \cdot [l_{xv rafter} \cdot (g \cdot q + k_s \cdot q_s)]$$

For the type of load "dead weight" and 0,5 "snow load" and "wind load":

$$I_{req, rafter} = B \cdot [l_{xv rafter} \cdot g (q_E + 0,5 \cdot k_s \cdot q_s) + (l_{xw rafter} p \cdot c \cdot 1,25 \cdot q)]$$

Μόνο για πίεση ανέμου (κλίση στέγης που υπερβαίνει τις 25 °), διαφορετικά 1,0

For the type of load "dead weight" and 0,5 "snow load" and "wind load":

$$I_{req, rafter} = B \cdot [l_{xv rafter} \cdot (g \cdot q + k_s \cdot q_s) + (0,5 \cdot l_{xw rafter} \cdot c_p \cdot 1,25 \cdot q)]$$

Μόνο για πίεση ανέμου (κλίση στέγης που υπερβαίνει τις 25 °), διαφορετικά 1,0

For the type of load "wind suction" - "dead weight":

$$I_{erf, rafter} = B \cdot (l_{xv rafter} \cdot c_p \text{ suction} \cdot q \text{ l}_{xv rafter} \cdot g \cdot q_E)$$

The maximum value of the determined results is decisive for the pre-dimensioning of the three-hinged frame!

Calculation example

Given:

Load width $B = 1\text{m}$
 System depth $a = 3,5\text{m}$
 Folding height $h = 2,2\text{m}$
 Roof inclination = 15°
 Glass thickness = 14m

Φορτίο ανέμου $q = 0,5\text{kN/m}^2$
 Pressure coefficient vertical $C_p = 0,8$
 Pressure coefficient sloping area $C_p = 0,6$ DIN 1055 chapter 4 table, 12
 Snow load $q_s = 0,75\text{kN/m}^2$
 Diminishing factor $k_s = 1,00$ DIN 1055 chapter 5 table, 1
 Dead weight $q_E = 0,39\text{kN/m}^2$ (glass weight + profile weight)
 Load conversion factor $g = 1,035$

Mullion dimensioning

For the type of load "wind pressure" the result is as follows:

$$I_{req, \text{ mullion}} = B \cdot l_{xw \text{ mullion}} \cdot q \cdot (c_p \cdot 1,25)$$

$$I_{req, \text{ mullion}} = 1 \cdot 59,4 \cdot 0,5 \cdot (0,8 \cdot 1,25) = 29,7 \text{ cm}^4$$

Υπολογισμός διαστάσεων επιτεγίδας (ή τραβέρσα κεκλιμένης στέγης)

For the type of load "dead weight" and "snow load" the result is as follows:

$$I_{req, \text{ rafter}} = B \cdot [l_{xv \text{ rafter}} \cdot (g \cdot q_E + k_s \cdot q_s)]$$

$$I_{req, \text{ rafter}} = 1 \cdot [247,7 \cdot (1,035 \cdot 0,39 + 1,00 \cdot 0,75)] = 285,8 \text{ cm}^4$$

For the type of load "dead weight" and 0,5 "snow load" and "wind load":

$$I_{req, \text{ rafter}} = B \cdot [l_{xv \text{ rafter}} \cdot (g \cdot q + 0,5 \cdot k_s \cdot q_s) + (l_{xw \text{ rafter}} \cdot 1 \cdot 1,25 \cdot q)]$$

$$I_{req, \text{ rafter}} = 1 \cdot [247,7 \cdot (1,035 \cdot 0,39 + 0,5 \cdot 1,00 \cdot 0,75) + (265,5 \cdot (-0,6) \cdot 1 \cdot 0,5)] = 113,2 \text{ cm}^4$$

For the type of load "dead weight" and 0,5 "snow load" and "wind load":

$$I_{req, \text{ rafter}} = B \cdot [l_{xv \text{ rafter}} \cdot (g \cdot q + k_s \cdot q_s) + (0,5 \cdot l_{xw \text{ rafter}} \cdot 1 \cdot 1,25 \cdot q)]$$

$$I_{req, \text{ rafter}} = 1 \cdot [247,7 \cdot (1,035 \cdot 0,39 + 1,00 \cdot 0,75) + (265,5 \cdot (-0,6) \cdot 1 \cdot 0,5)] = 245,9 \text{ cm}^4$$

For the type of load "wind suction" - "dead weight" (to be calculated only in case of relevant wind suction forces):

$$I_{req, \text{ rafter}} = B \cdot (l_{xv \text{ rafter}} \cdot c_p \text{ suction} \cdot q \cdot g \cdot l_{xv \text{ rafter}} \cdot g \cdot q_E)$$

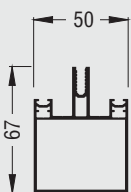
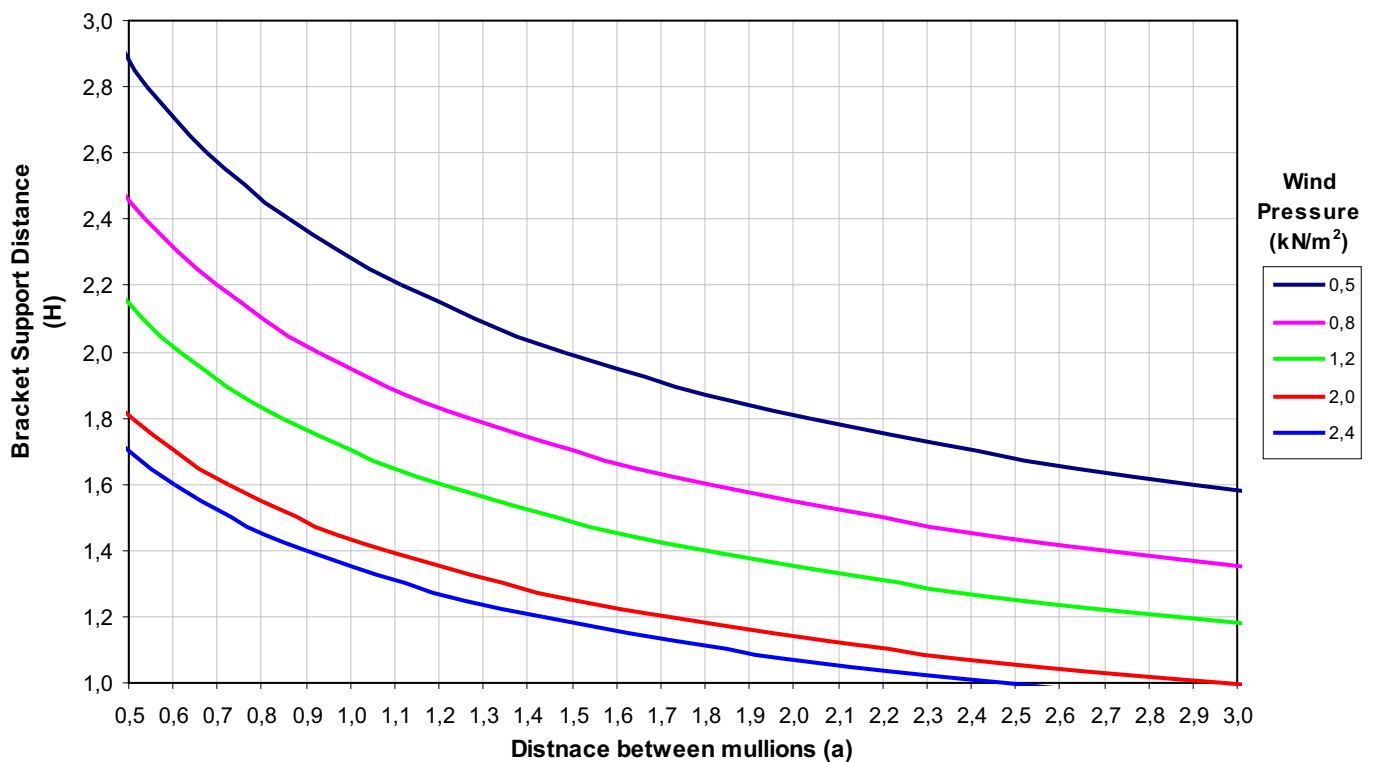
$$I_{req, \text{ rafter}} = 1 \cdot (247,7 \cdot (-0,6) \cdot 0,5 - 247,7 \cdot 1,035 \cdot 0,39) = 174,3 \text{ cm}^4$$

From the type of load with the highest requirements the following results with regard to pre-dimensioning:

$$I_{yreq} = 285,8 \text{ cm}^4$$

Wind load charts for mullions

M70002



$I_x = 22,2 \text{ cm}^4$
 $I_y = 14,9 \text{ cm}^4$

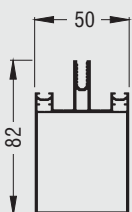
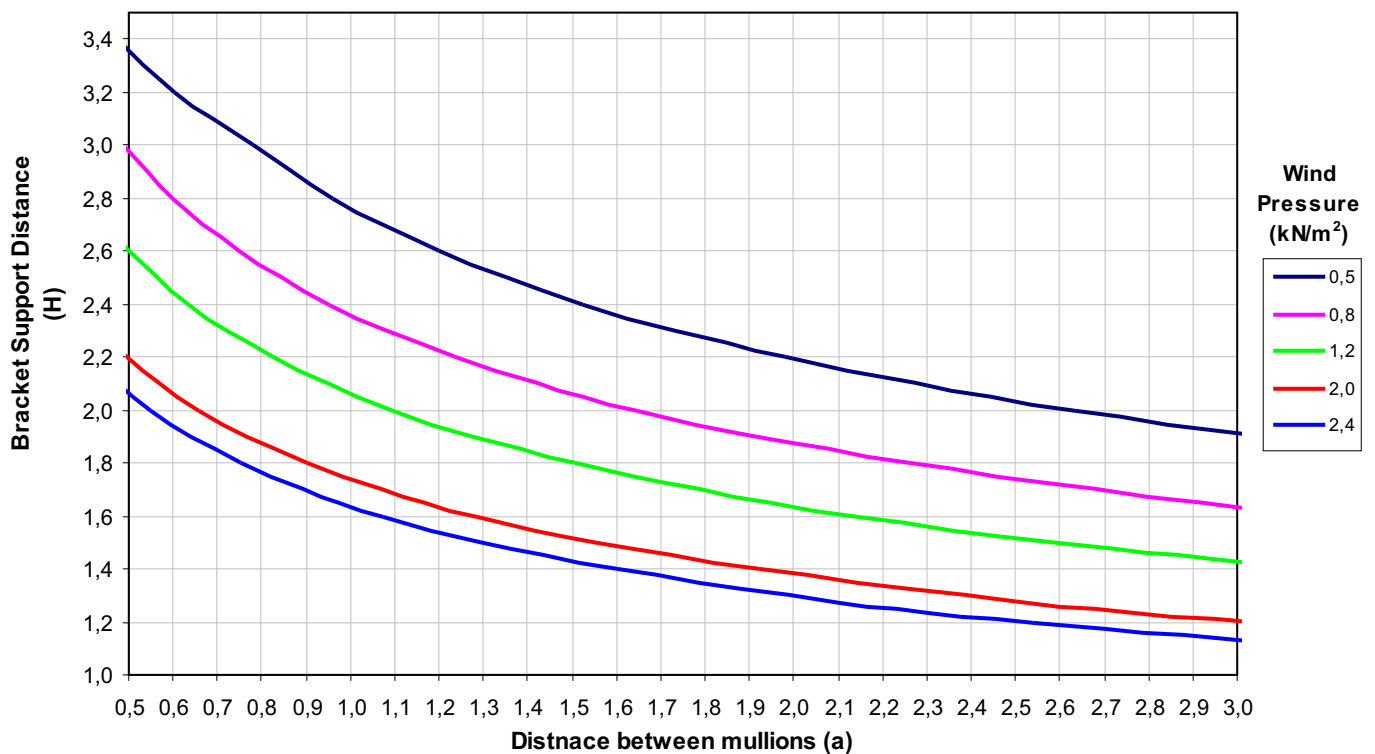
M70002

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70003



$I_x = 39,3 \text{ cm}^4$
 $I_y = 17,8 \text{ cm}^4$

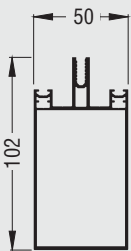
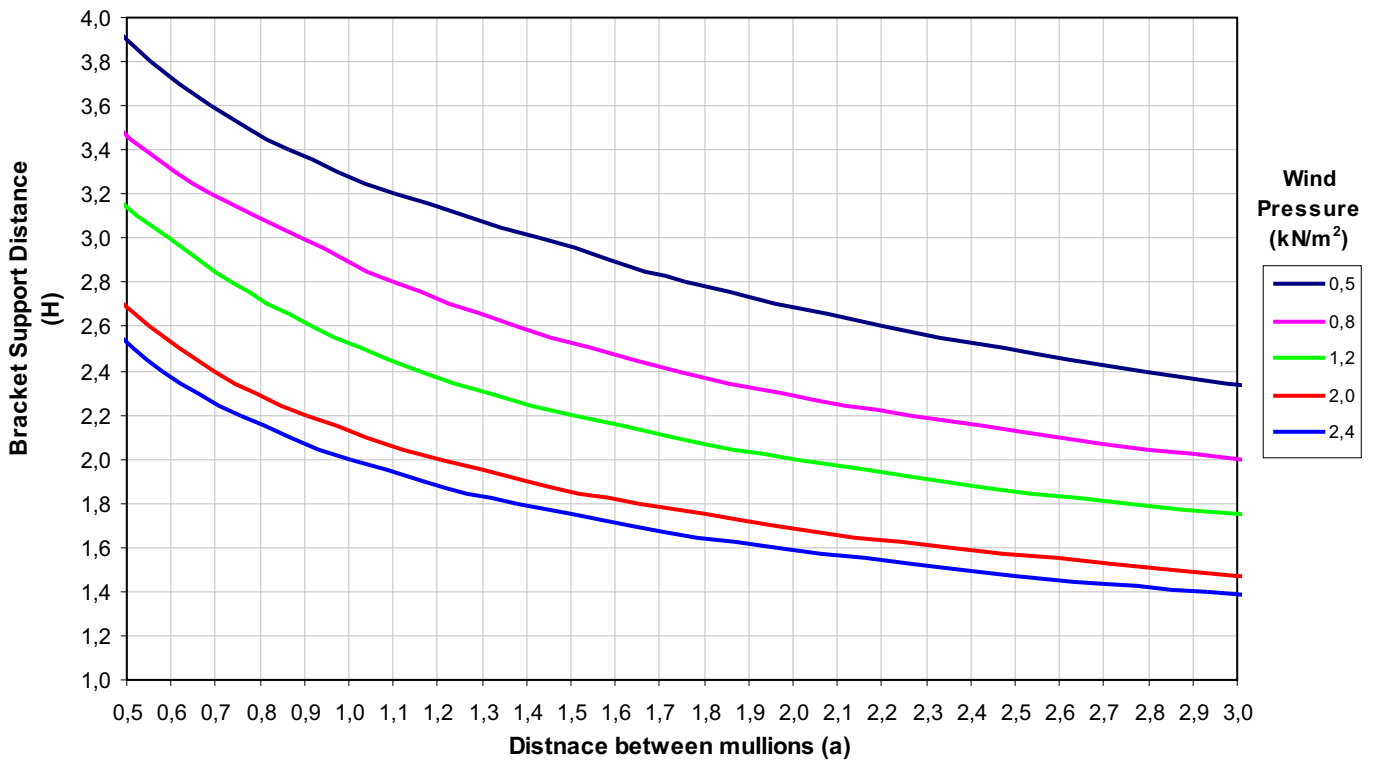
M70003

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70004



$I_x = 72,0 \text{ cm}^4$
 $I_y = 21,8 \text{ cm}^4$

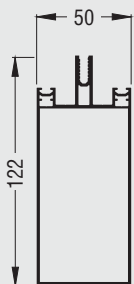
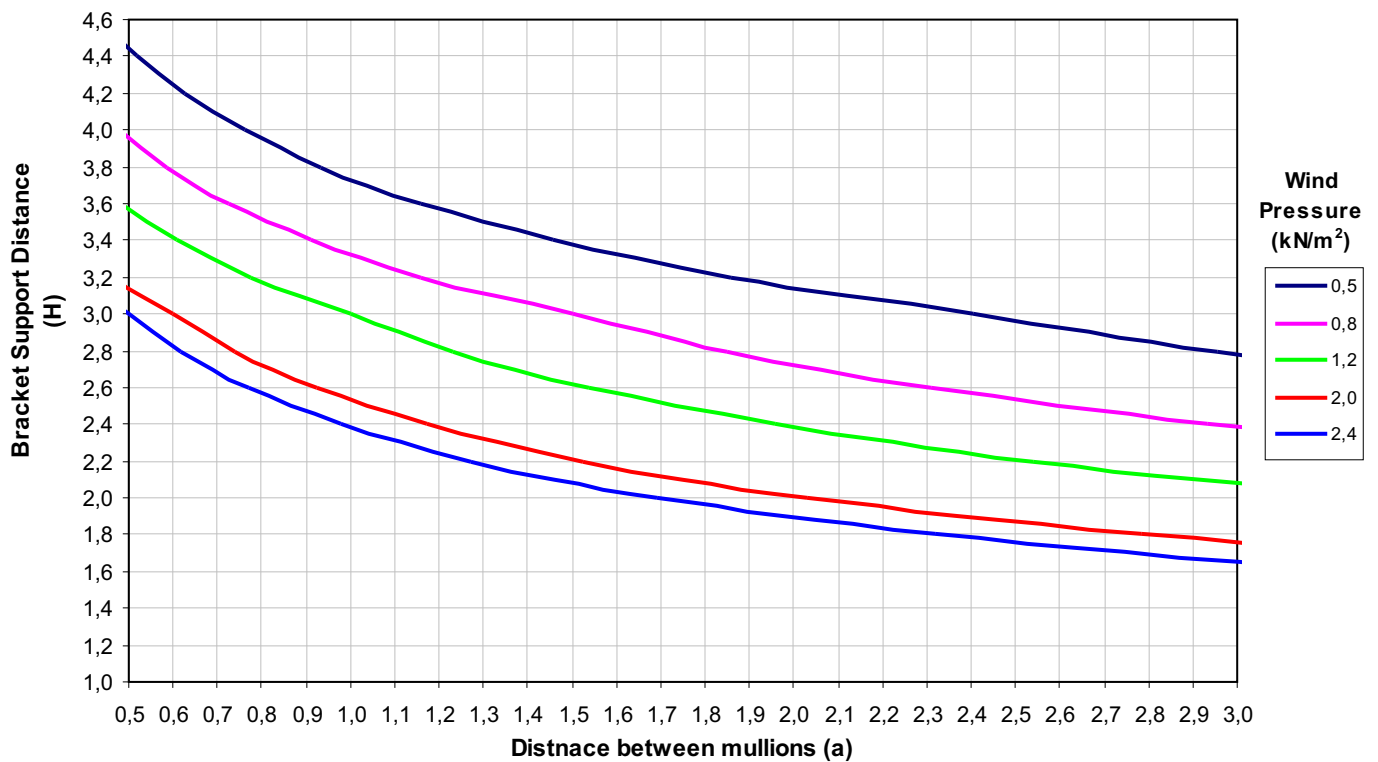
M70004

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70005



$I_x = 120,9 \text{ cm}^4$
 $I_y = 25,9 \text{ cm}^4$

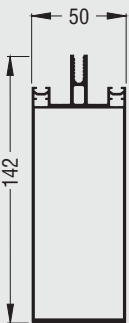
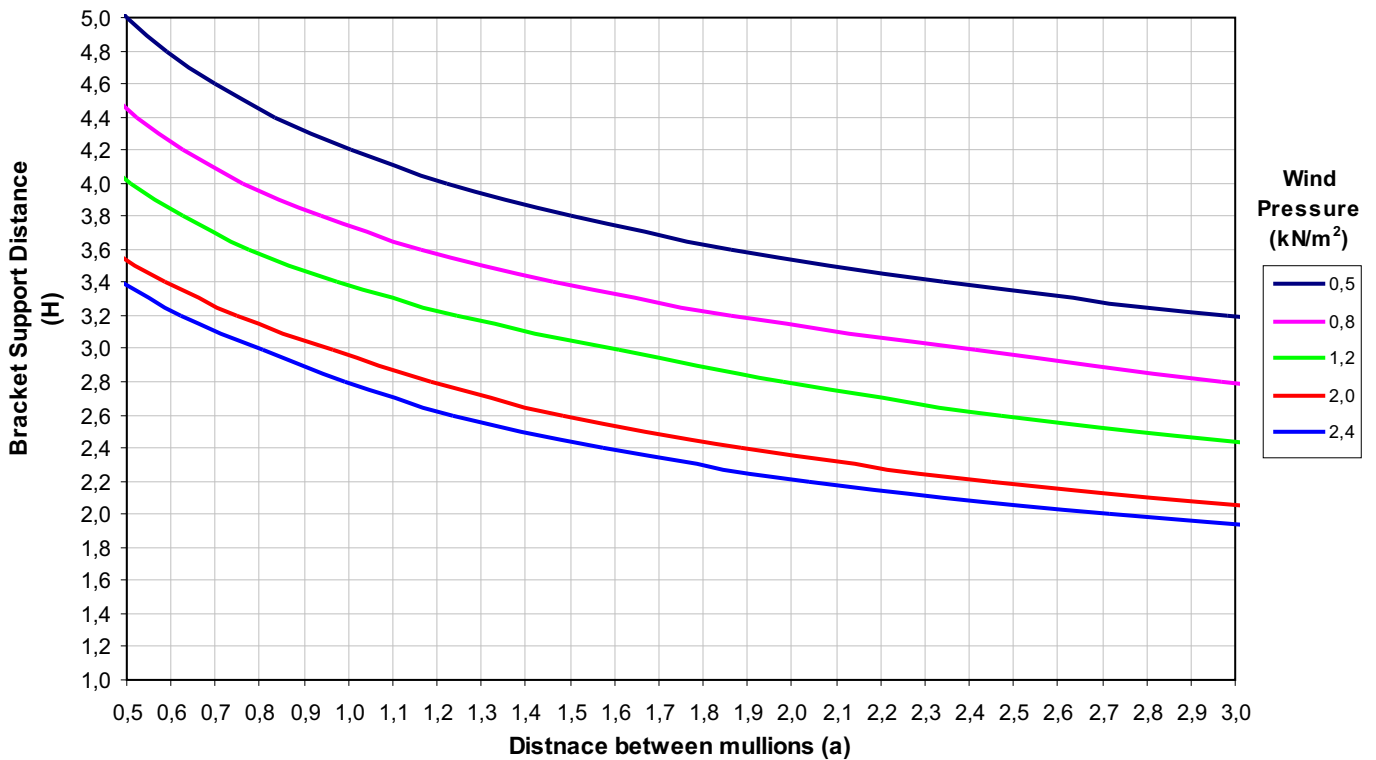
M70005

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70006



$I_x = 193,4 \text{ cm}^4$
 $I_y = 30,4 \text{ cm}^4$

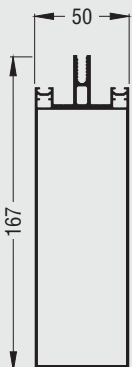
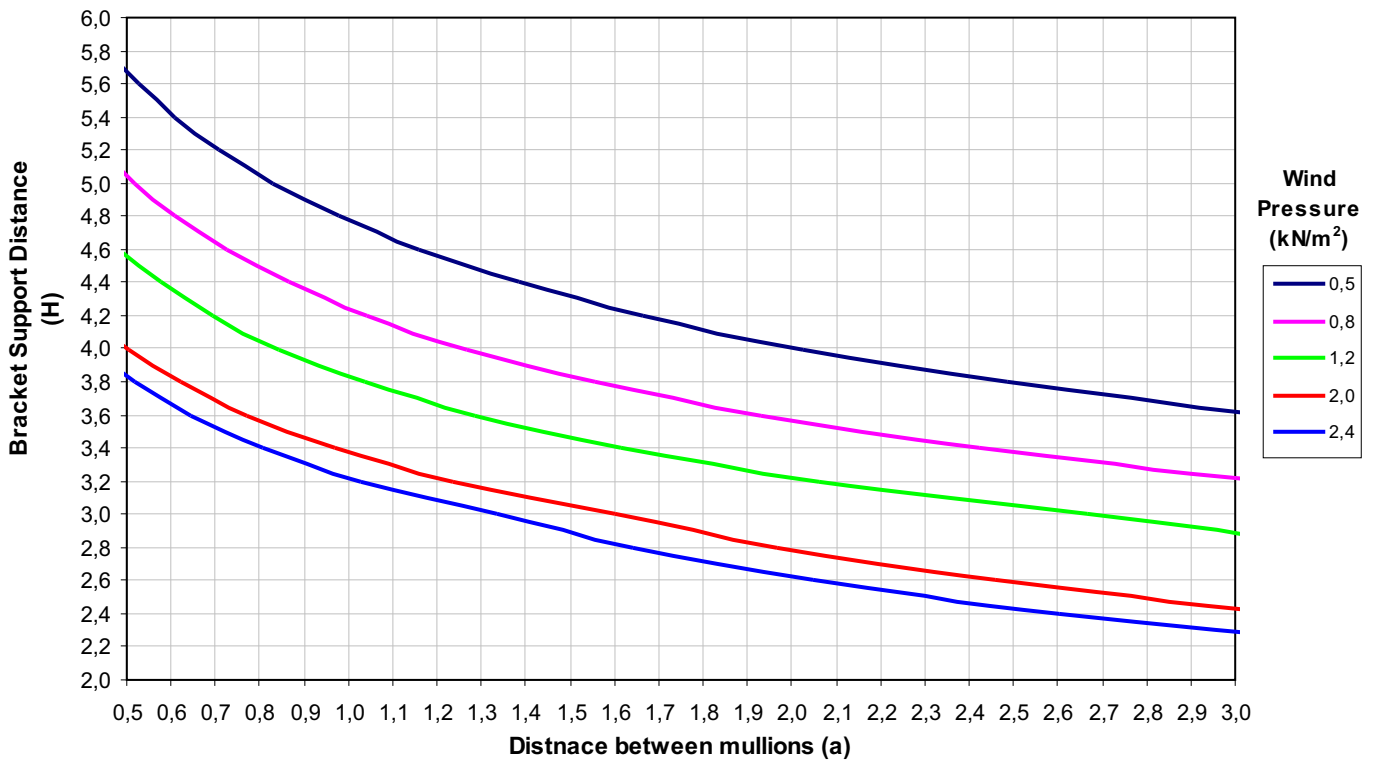
M70006

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70007



$I_x = 318,3 \text{ cm}^4$
 $I_y = 35,9 \text{ cm}^4$

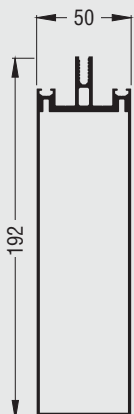
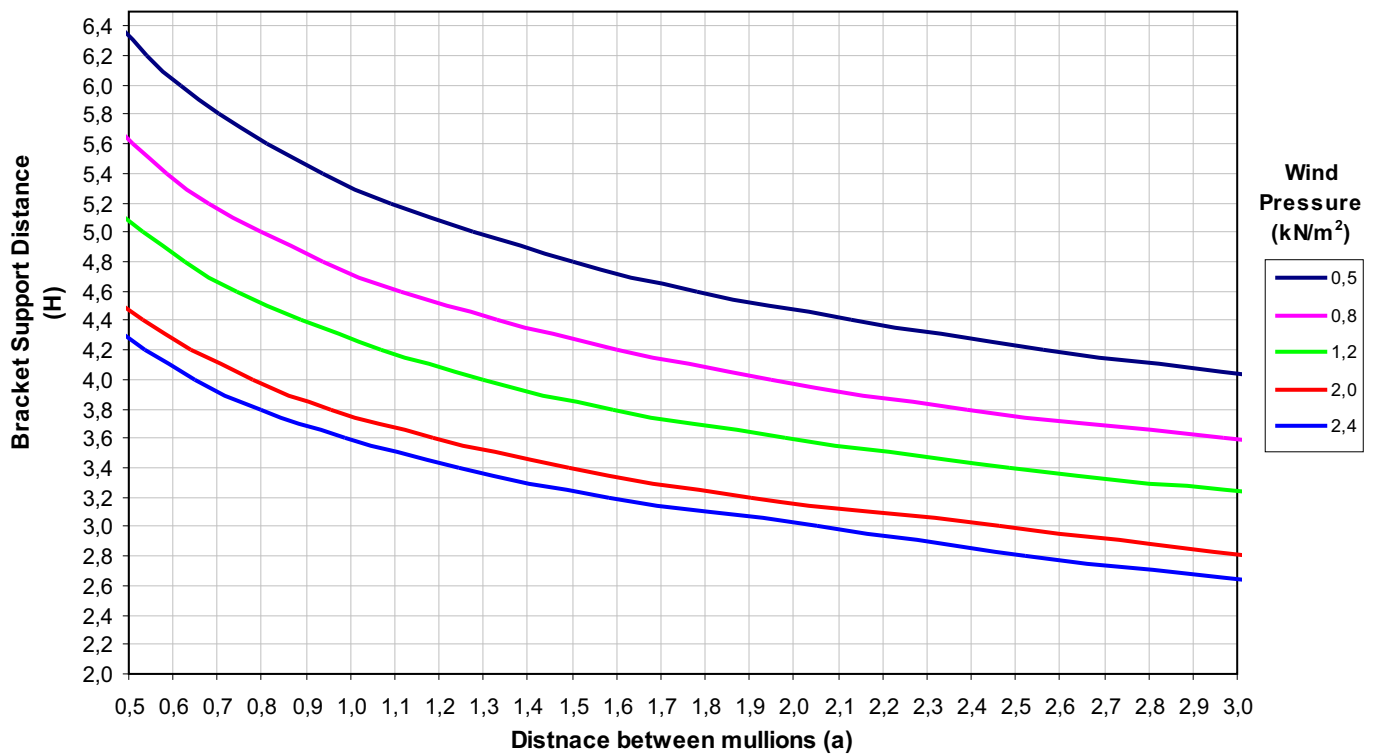
M70007

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70034



$I_x = 505,2 \text{ cm}^4$
 $I_y = 43,1 \text{ cm}^4$

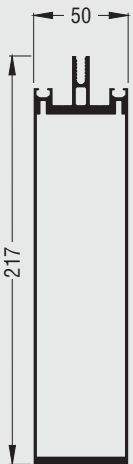
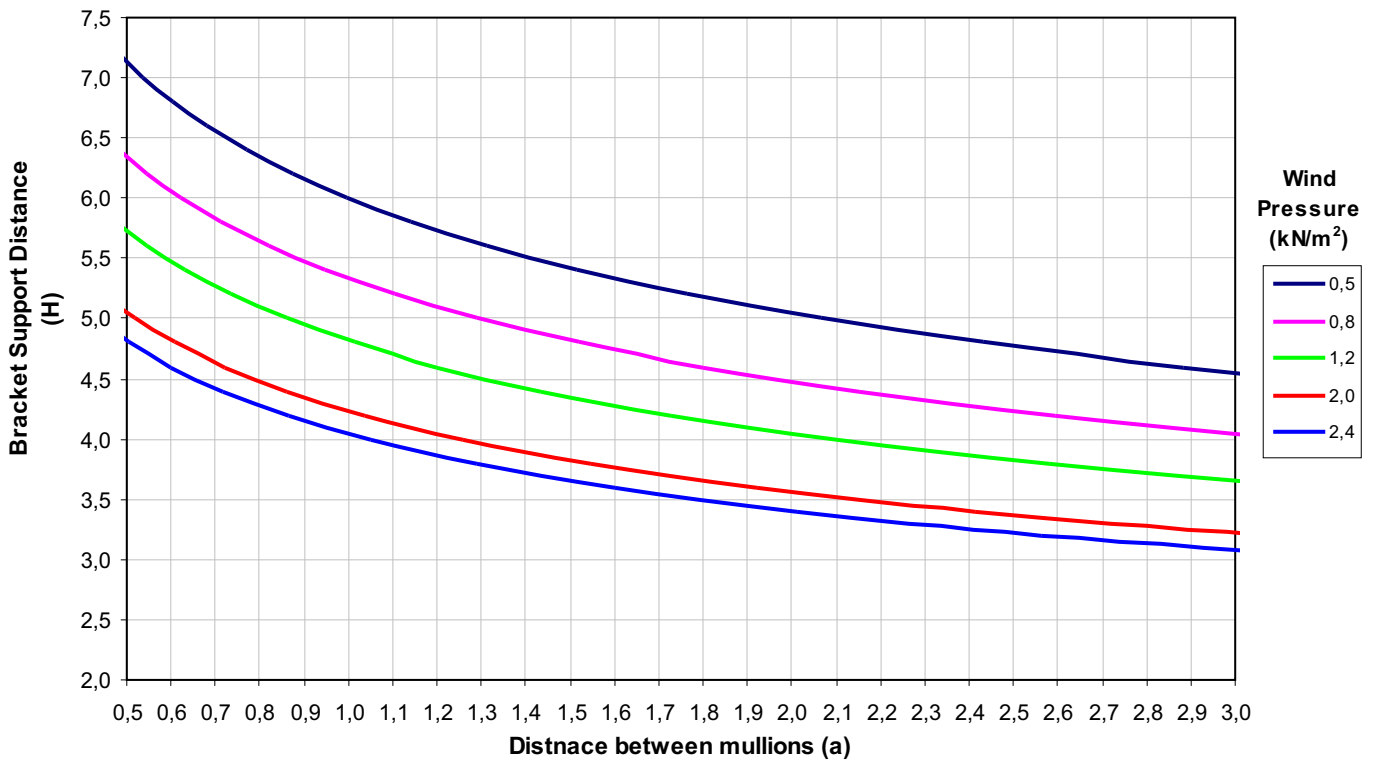
M70034

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70008



$I_x = 805,0 \text{ cm}^4$
 $I_y = 49,9 \text{ cm}^4$

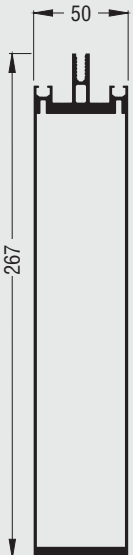
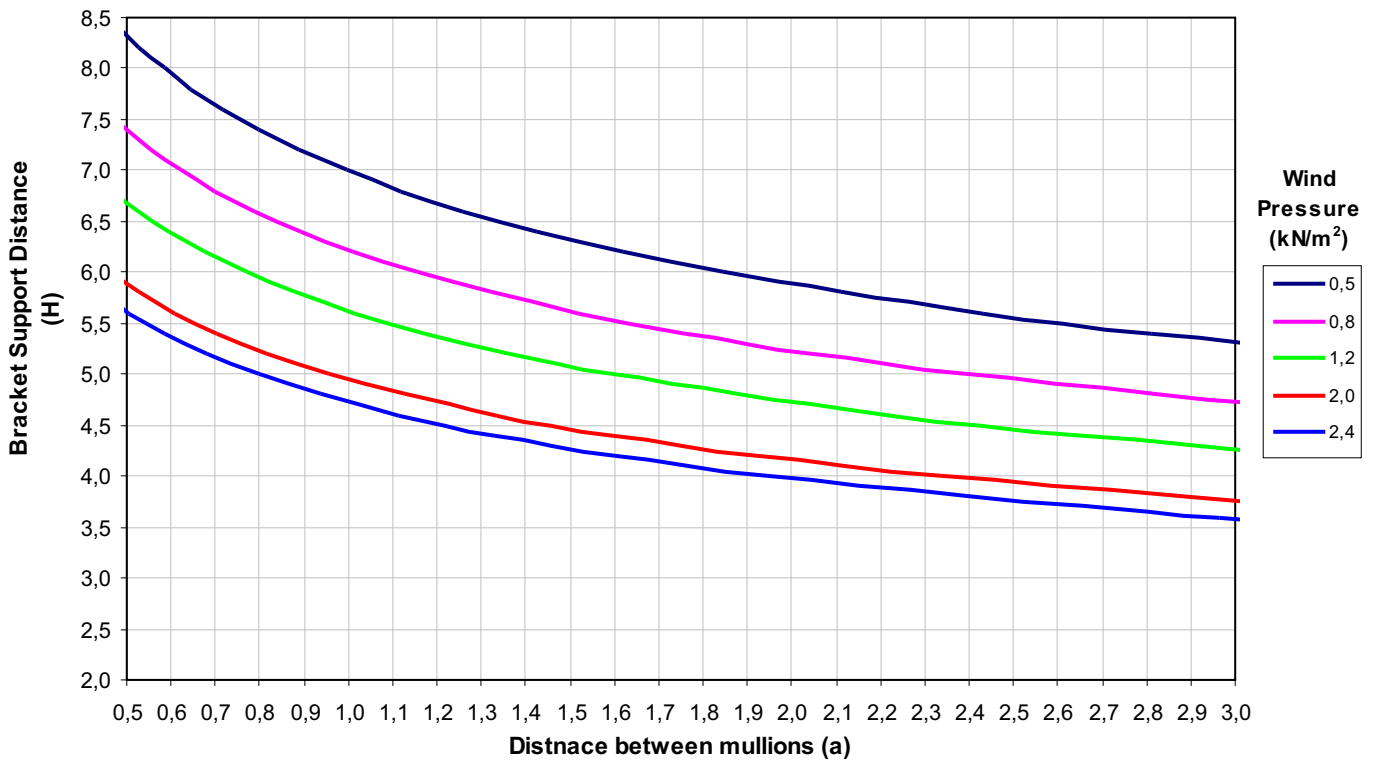
M70008

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Wind load charts for mullions

M70009



$I_x = 1475,2 \text{ cm}^4$
 $I_y = 61,0 \text{ cm}^4$

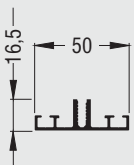
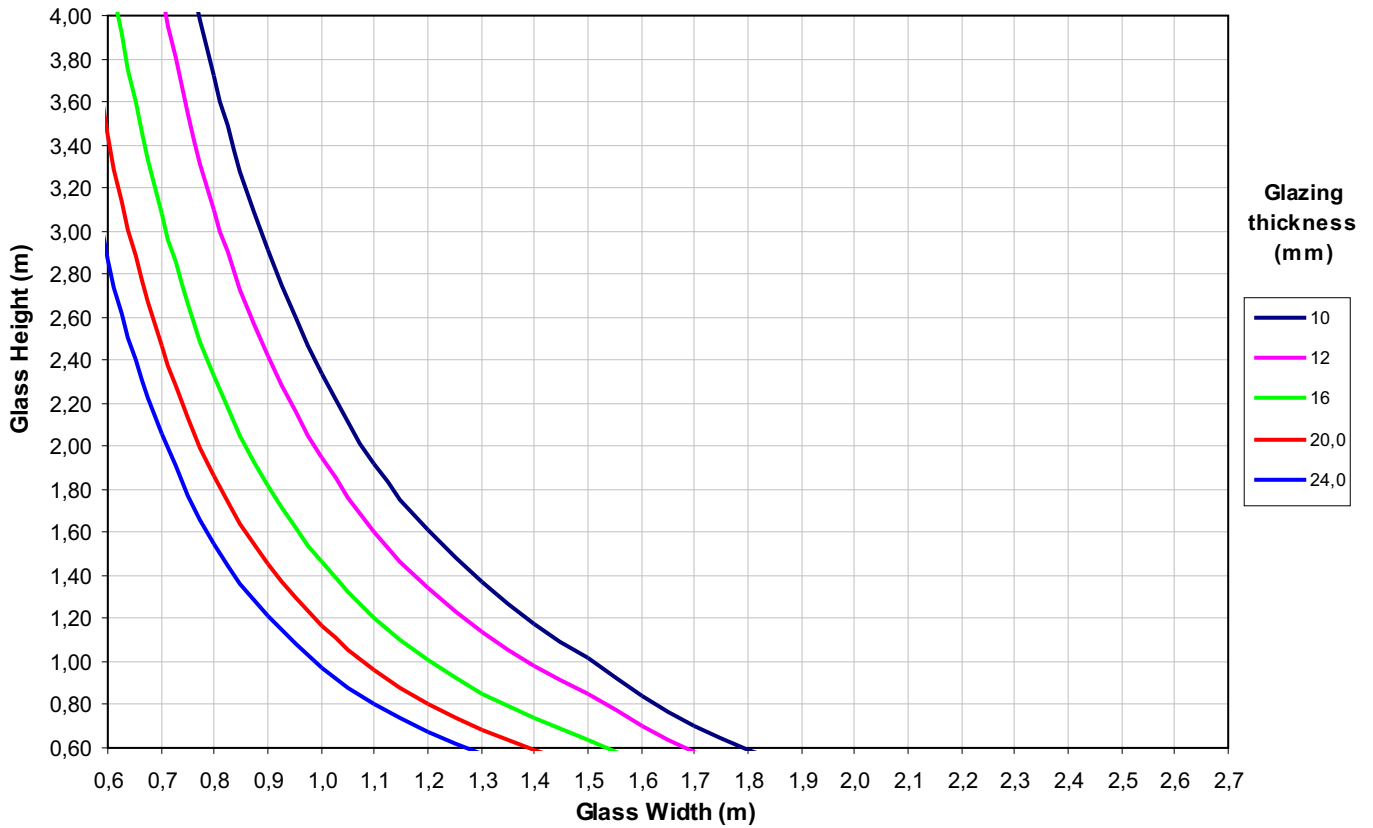
M70009

Note: The distance "H" is the distance between support points and is not necessarily the mullion height.

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70010



$I_x = 0,4 \text{ cm}^4$
 $I_y = 3,8 \text{ cm}^4$

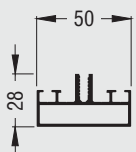
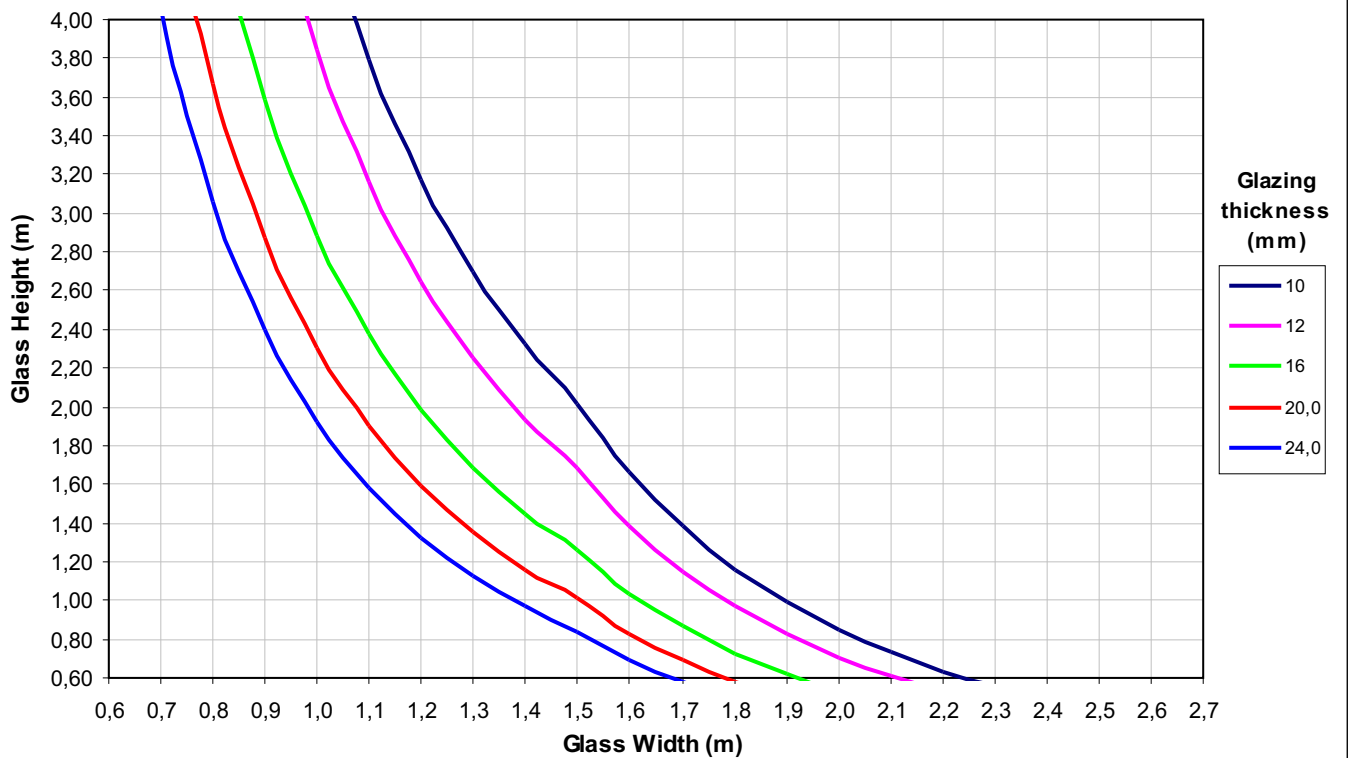
M70010

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f \text{ max} = 1/200$

Dead load charts for transoms

M70011



$I_x = 2,0 \text{ cm}^4$
 $I_y = 7,5 \text{ cm}^4$

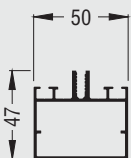
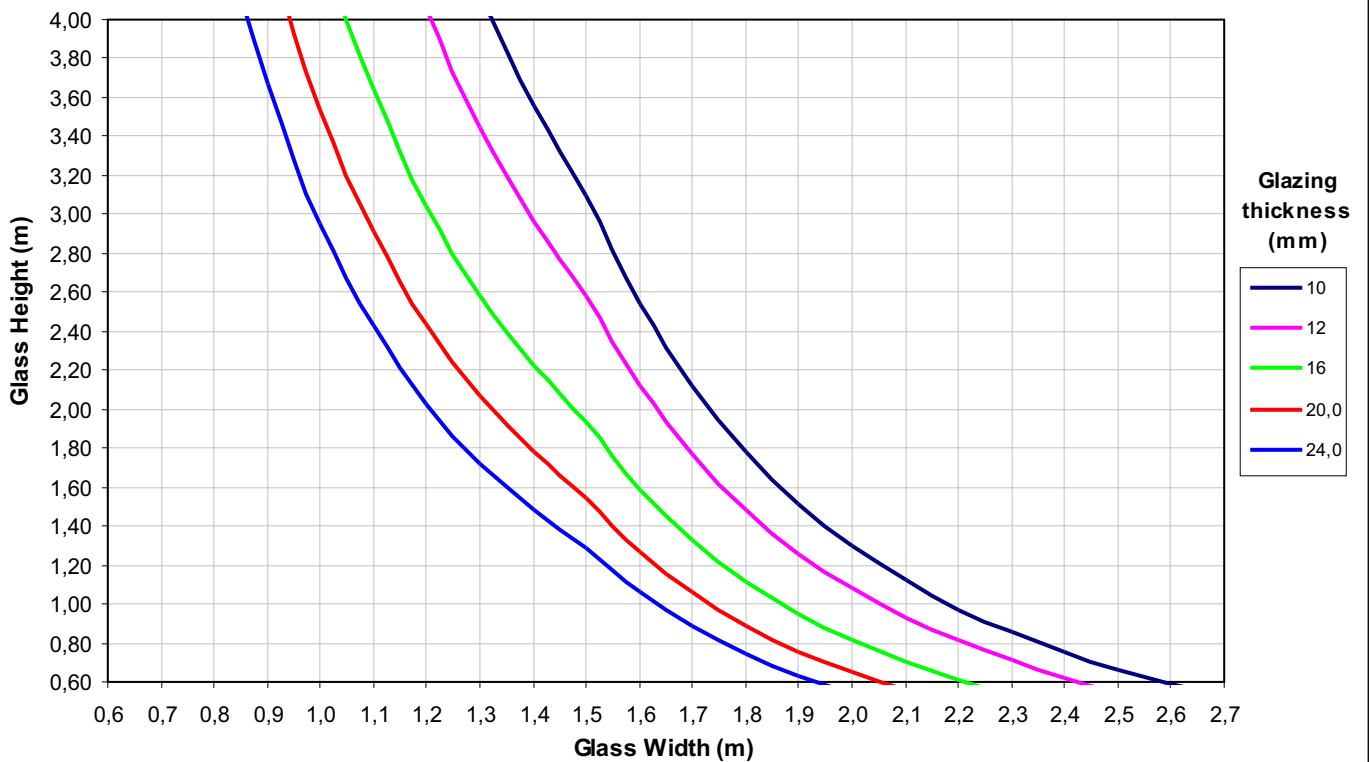
M70011

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70012



$I_x = 9,0 \text{ cm}^4$
 $I_y = 11,5 \text{ cm}^4$

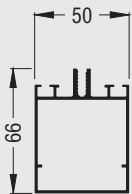
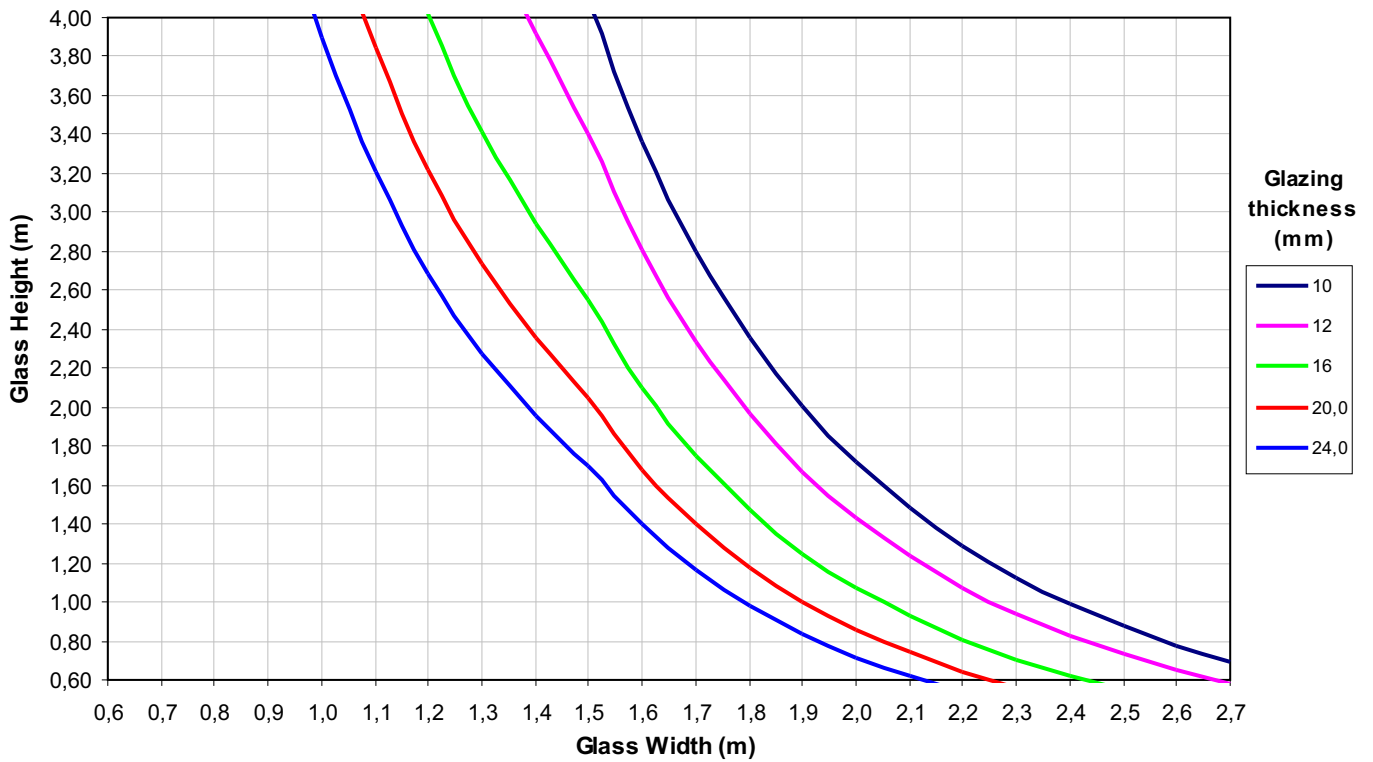
M70012

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70013



$I_x = 22,9 \text{ cm}^4$
 $I_y = 15,2 \text{ cm}^4$

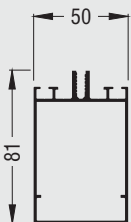
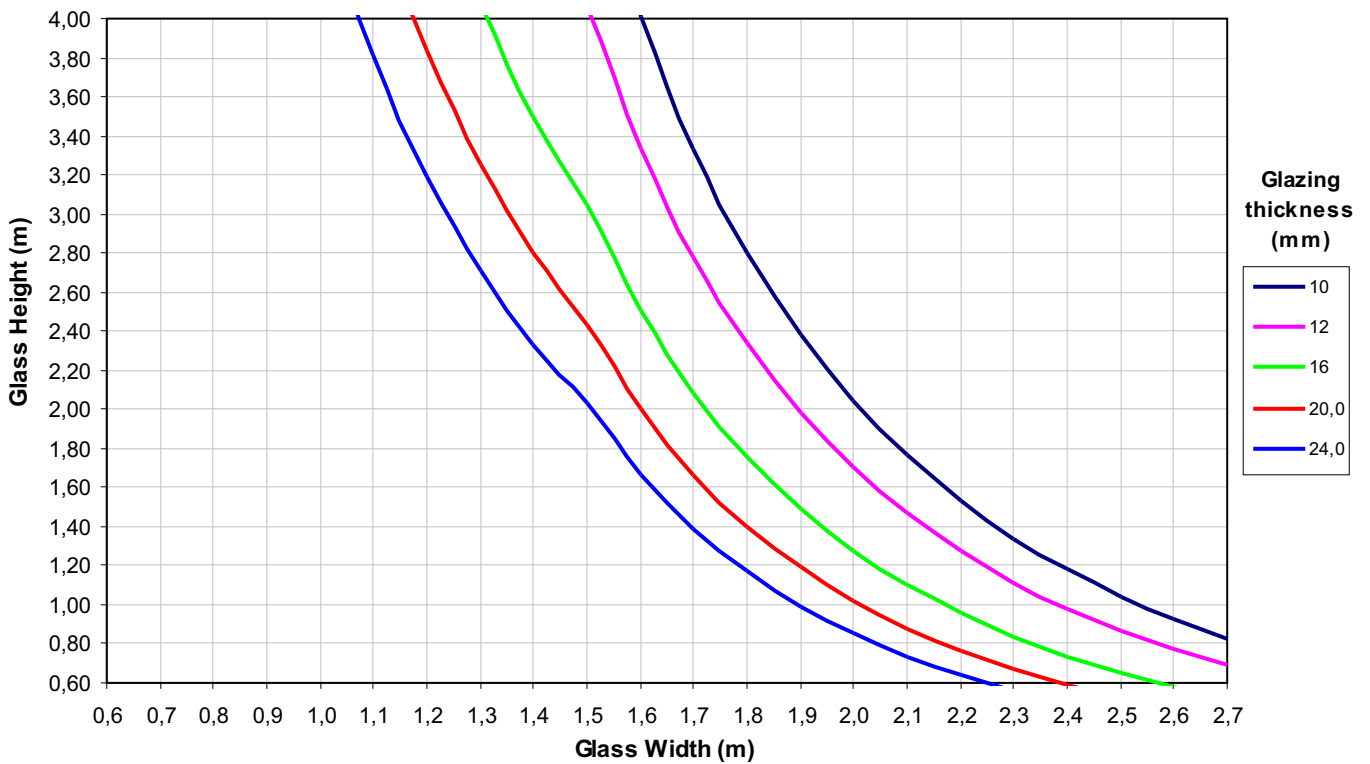
M70013

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70014



$I_x = 39,7 \text{ cm}^4$
 $I_y = 18,1 \text{ cm}^4$

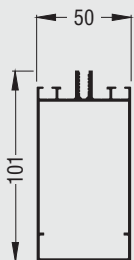
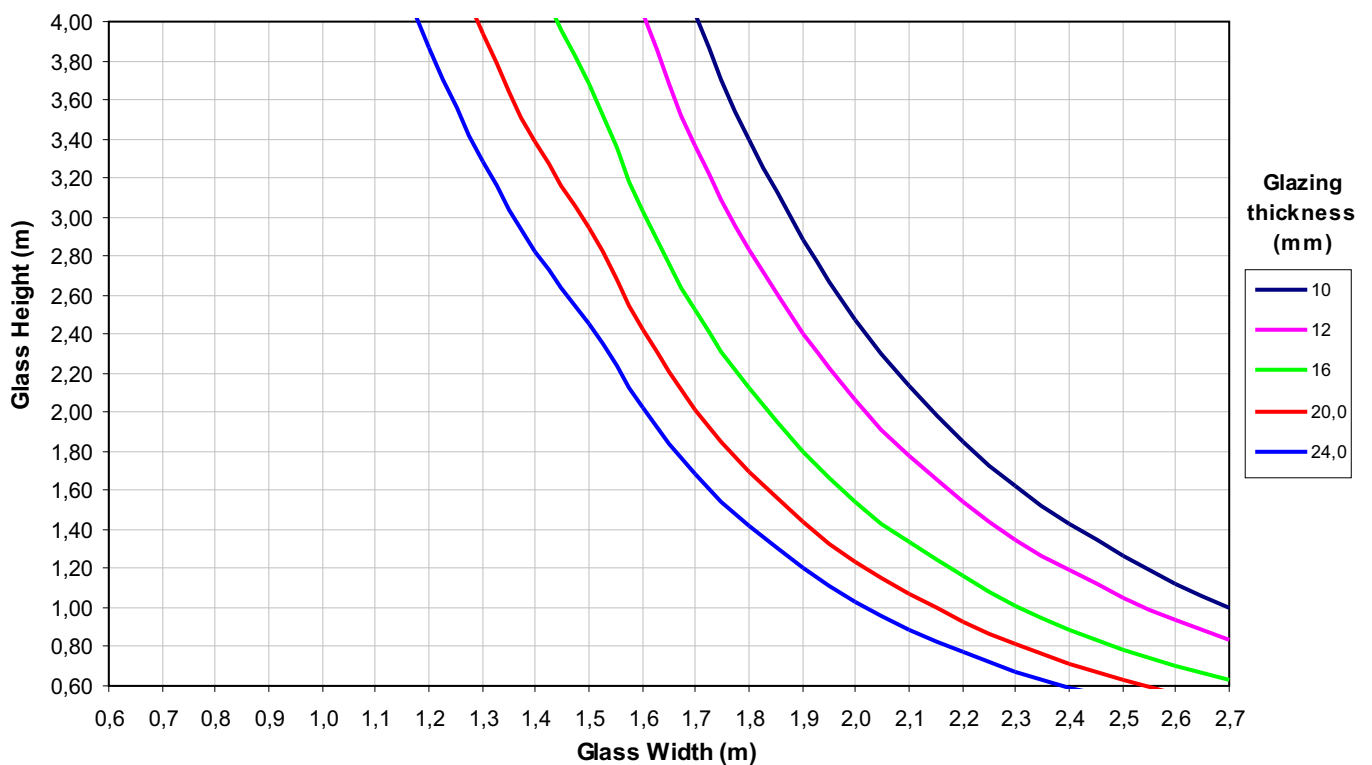
M70014

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70015



$I_x = 70,1 \text{ cm}^4$
 $I_y = 21,9 \text{ cm}^4$

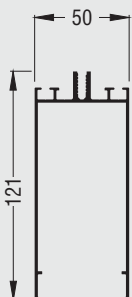
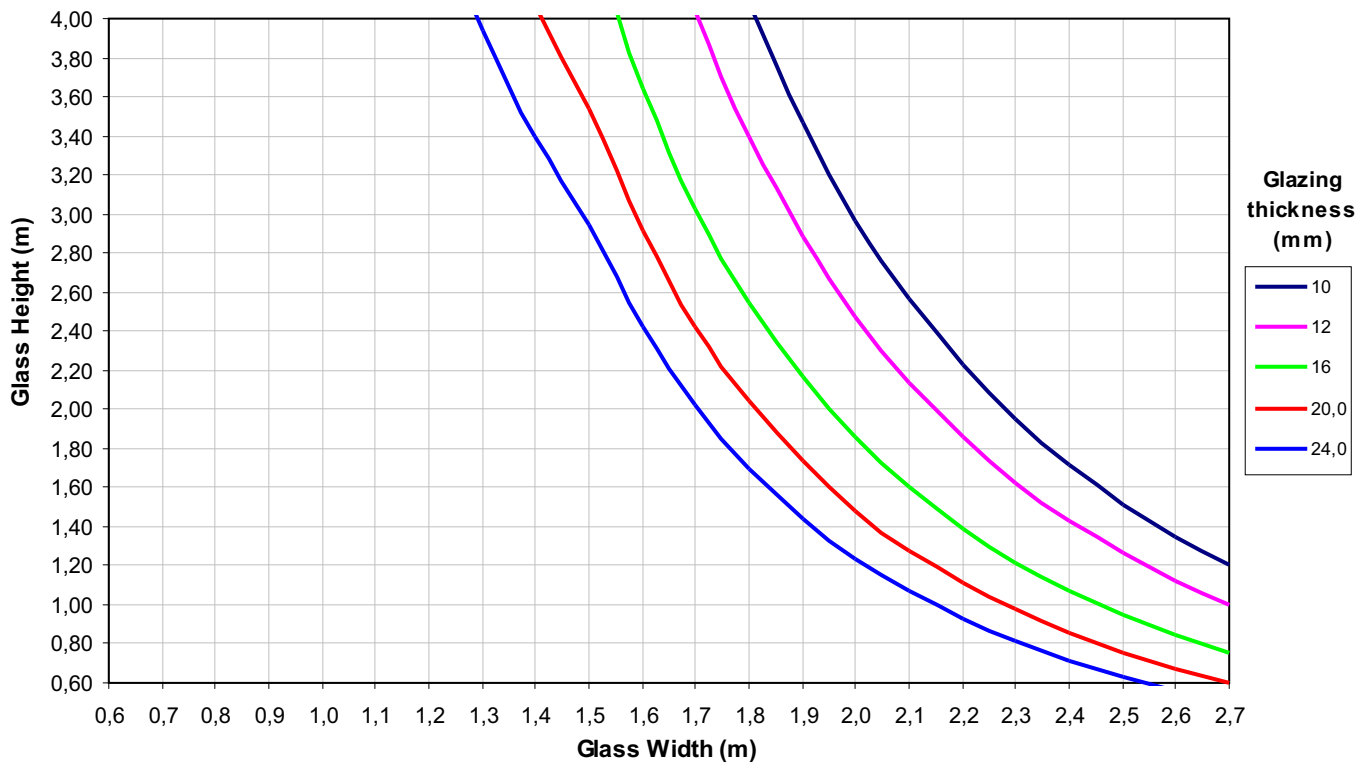
M70015

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70016



$I_x = 113,8 \text{ cm}^4$
 $I_y = 26,3 \text{ cm}^4$

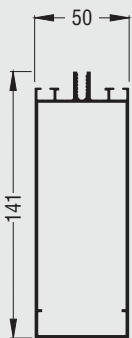
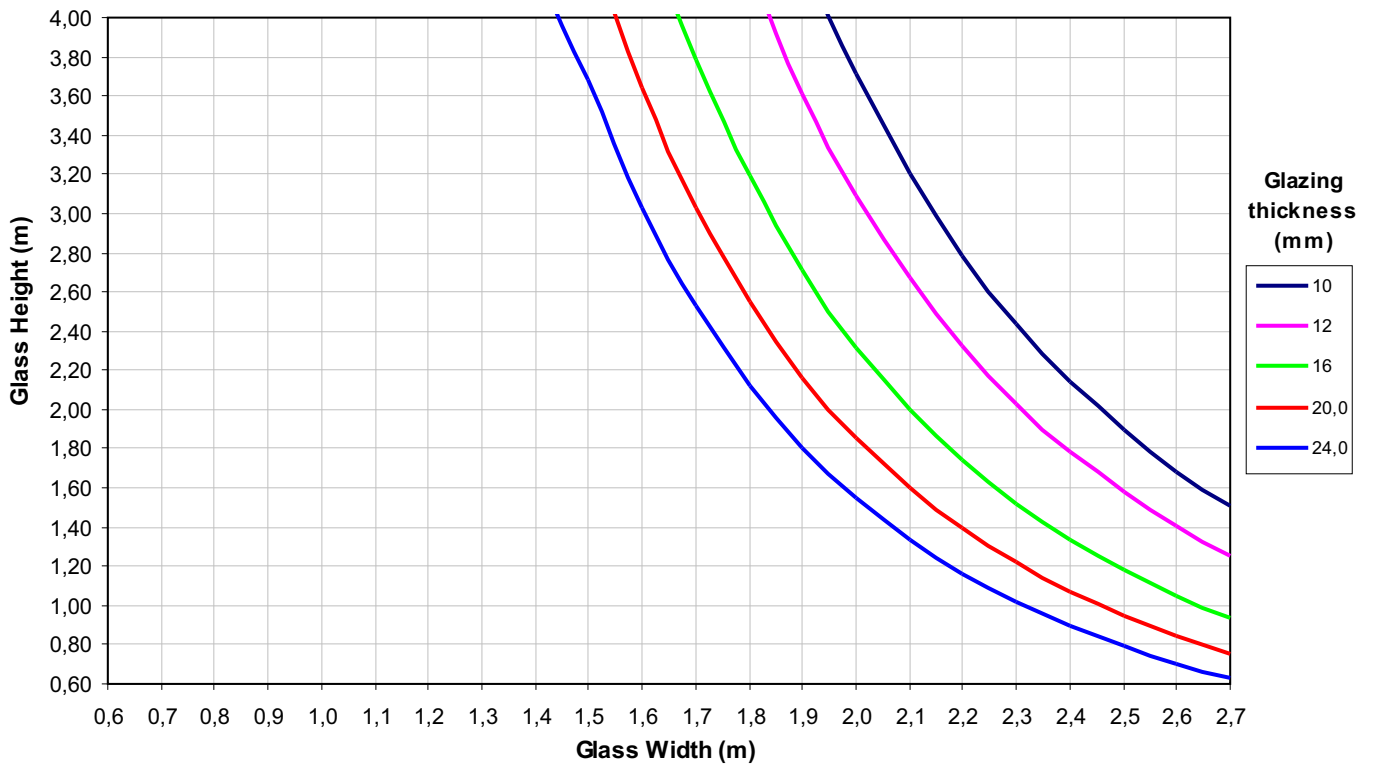
M70016

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m³.

Valid for aluminium (E = 7000 kN/cm²) and f max = 1/200

Dead load charts for transoms

M70017



$I_x = 176,4 \text{ cm}^4$
 $I_y = 32,9 \text{ cm}^4$

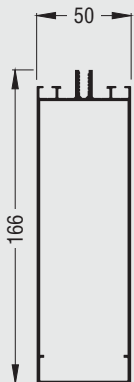
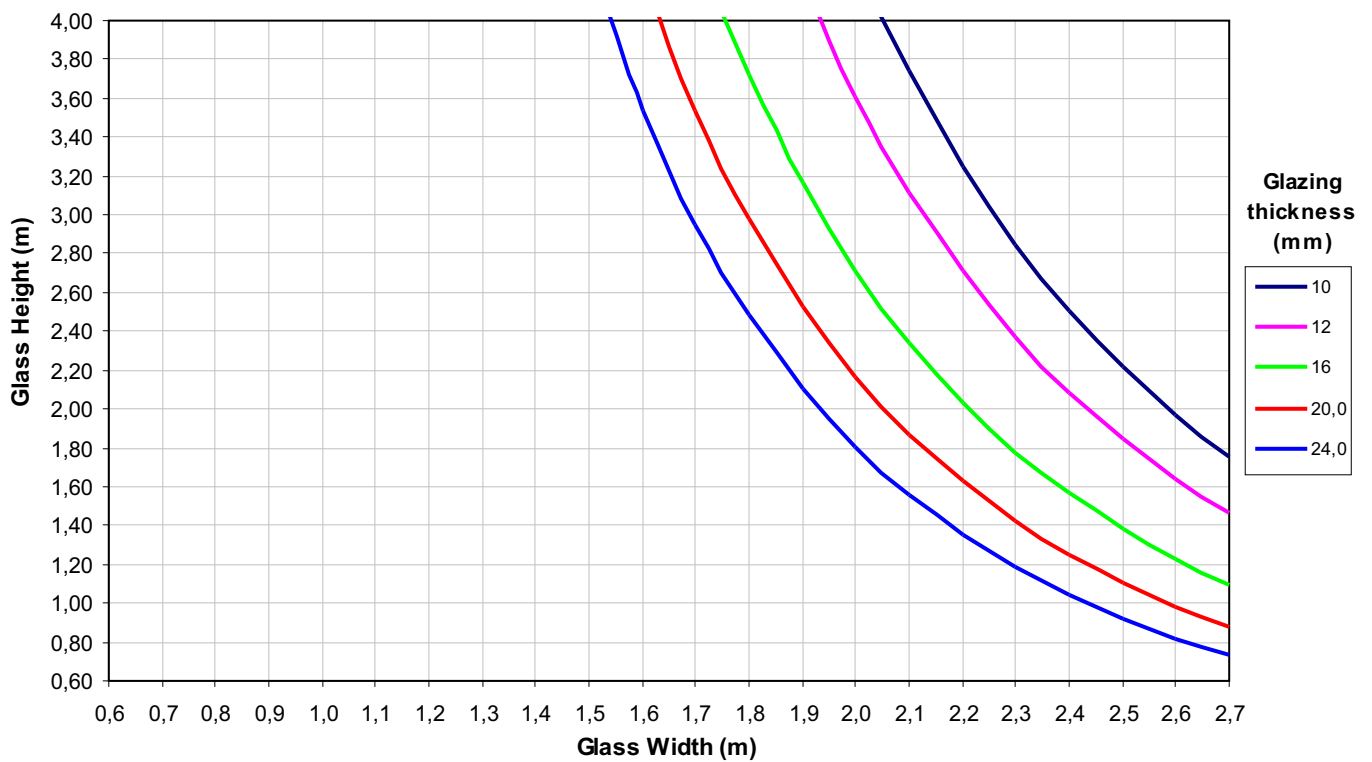
M70017

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70018



$I_x = 271,4 \text{ cm}^4$
 $I_y = 38,4 \text{ cm}^4$

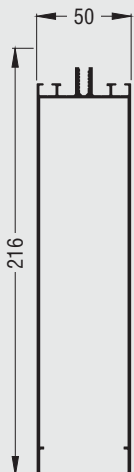
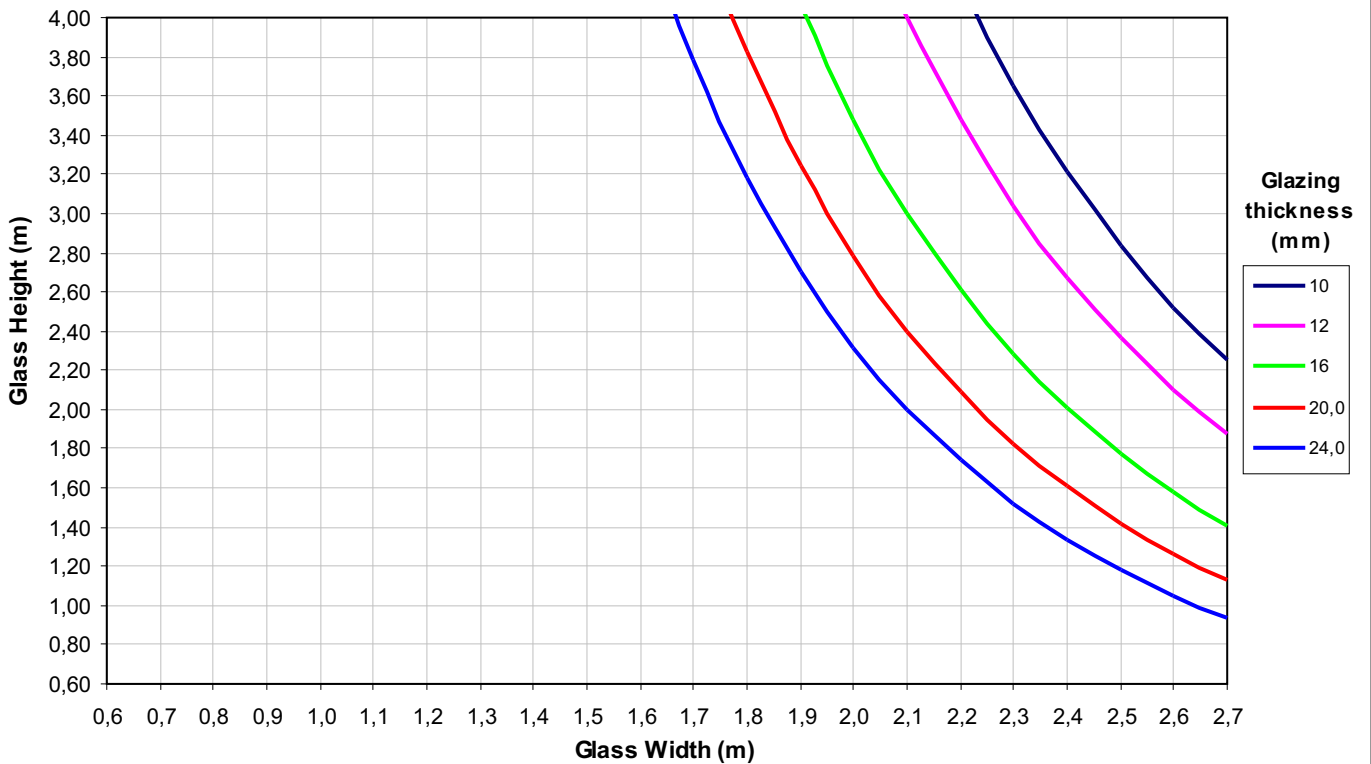
M70018

Note: The glass thickness does not include the thickness of the spacer.
 The density of the glass is assumed to be 2600 Kg/m^3 .

Valid for aluminium ($E = 7000 \text{ kN/cm}^2$) and $f_{max} = 1/200$

Dead load charts for transoms

M70019



$I_x = 545,3 \text{ cm}^4$
 $I_y = 49,3 \text{ cm}^4$

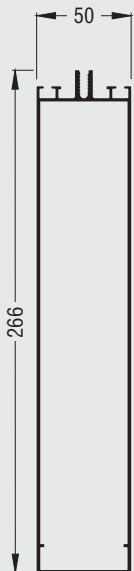
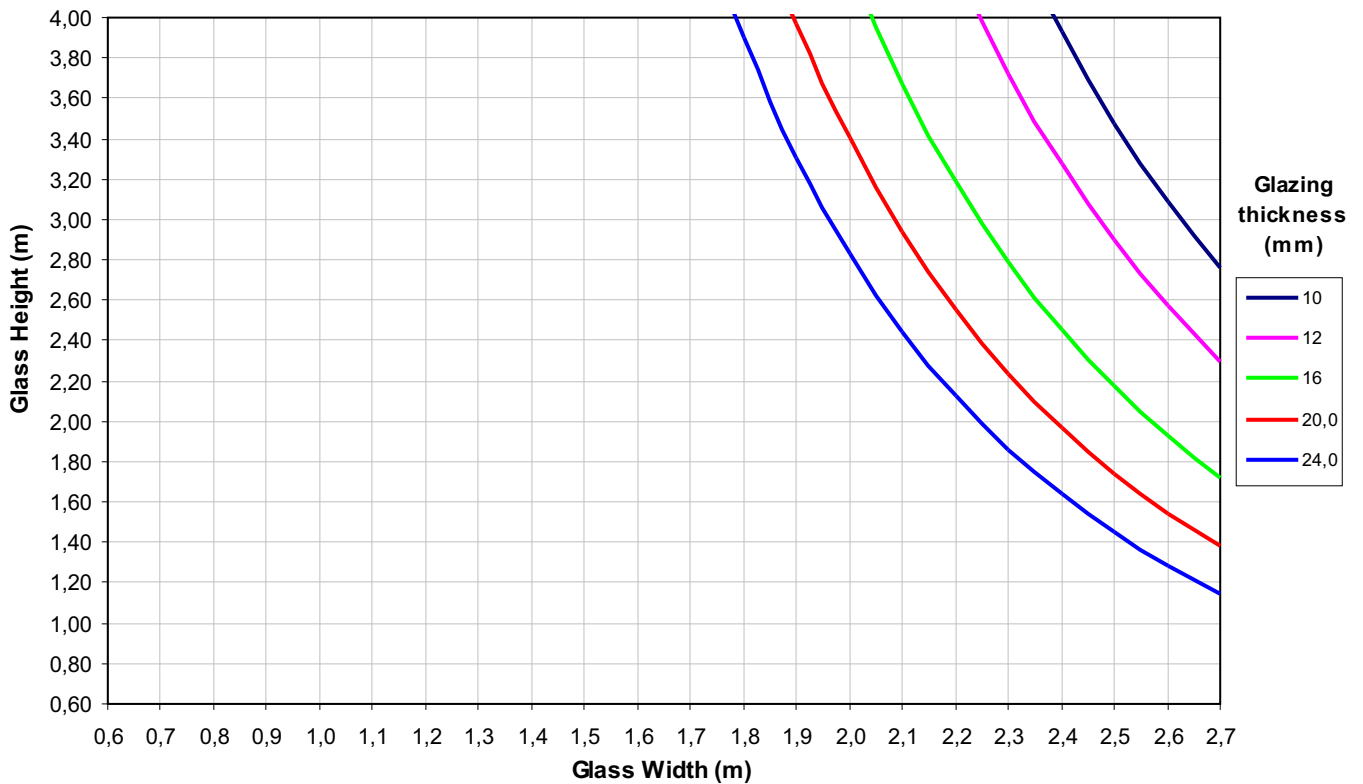
M70019

Note: The glass thickness does not include the thickness of the spacer. The density of the glass is assumed to be 2600 Kg/m³.

Valid for aluminium (E = 7000 kN/cm²) and f max = 1/200

Dead load charts for transoms

M70020



$I_x = 951,1 \text{ cm}^4$
 $I_y = 60,3 \text{ cm}^4$

M70020

Note: The glass thickness does not include the thickness of the spacer.
The density of the glass is assumed to be 2600 Kg/m³.

Valid for aluminium (E = 7000 kN/cm²) and f max = 1/200

Standards

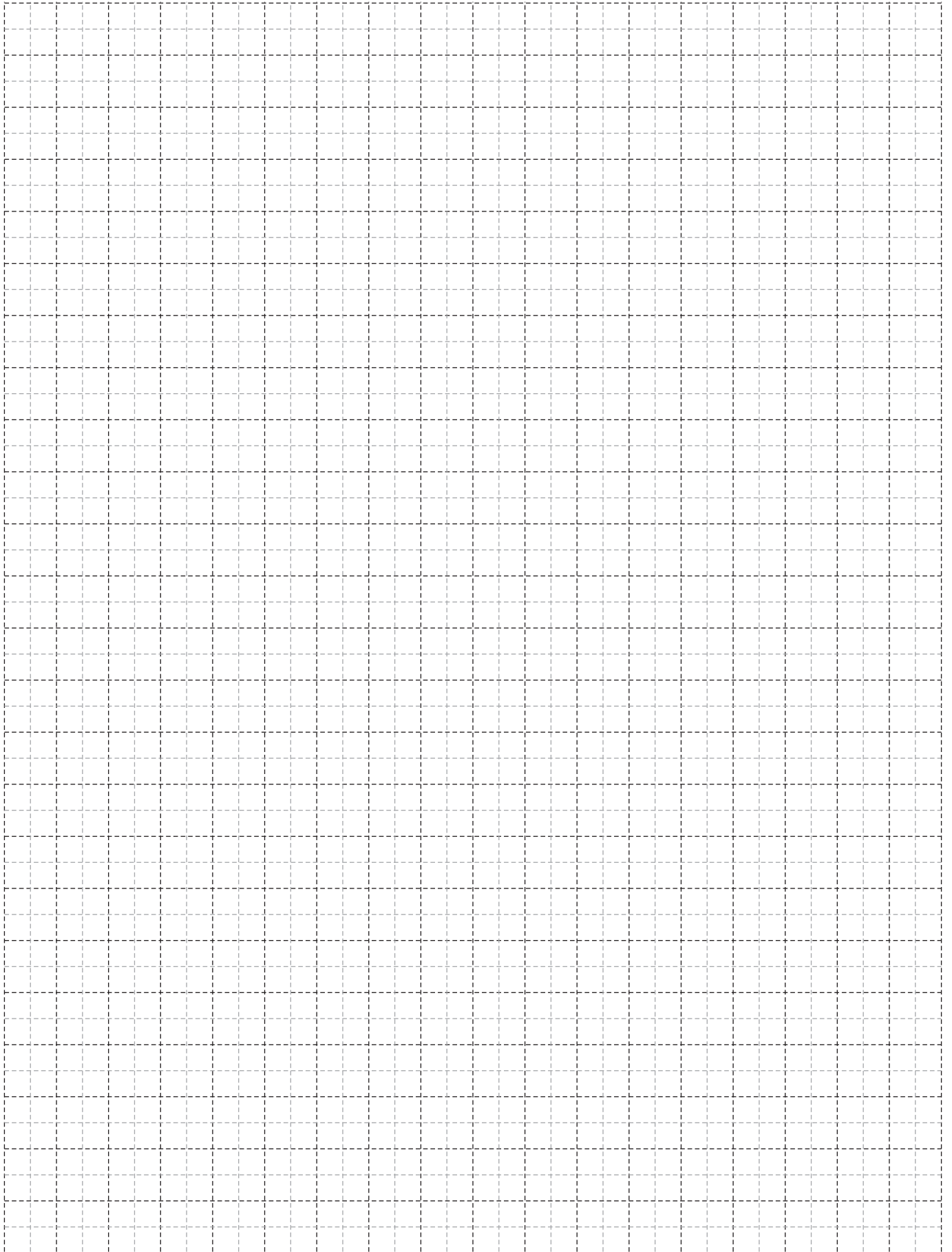
Building codes and reference material


EN 1990: (Eurocode 0) Basis of structural design
 EN 1991: (Eurocode 1) Actions on structures
 EN 1992: (Eurocode 2) Design of concrete structures
 EN 1993: (Eurocode 3) Design of steel structures
 EN 1994: (Eurocode 4) Design of composite steel and concrete
 EN 1995: (Eurocode 5) Design of timber structures
 EN 1996: (Eurocode 6) Design of masonry structures
 EN 1997: (Eurocode 7) Geotechnical design
 EN 1998: (Eurocode 8) Design of structures for earthquake
 EN 1999: (Eurocode 9) Design of aluminium structures
 EN 14351-1 - Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics;
 EN 13830 - Curtain walling - Product standard;
 EN 1279-1 - Glass in building - Insulating glass units - Part 1: Generalities, dimensional tolerances and rules for the system description;
 EN 1279-2 - Glass in building - Insulating glass units - Part 2: Long term test method and requirements for moisture penetration;
 EN 1279-3 - Glass in building - Insulating glass units - Part 3: Long term test method and requirements for gas leakage rate and for gas concentration tolerances
 EN 1279-4 - Glass in building - Insulating glass units - Part 4: Methods of test for the physical attributes of edge seals
 EN 1279-5 - Glass in building - Insulating glass units - Part 5: Evaluation of conformity
 EN 1279-6 - Glass in building - Insulating glass units - Part 6: Factory production control and periodic tests;
 DIN 4109 - Sound insulation in buildings; requirements and testing
 DIN 1055-1 - Action on structures - Part 1: Densities and weights of building materials, structural elements and stored materials
 DIN 1055-2 - Design Loads for Buildings; Soil Characteristics; Specific Weight, Angle of Friction, Cohesion, Angle of Wall Friction
 DIN 1055-3 - Actions on structures - Part 3: Self-weight and imposed load in building
 DIN 1055-4 - Actions on structures - Part 4: Wind loads
 DIN 1055-5 - Actions on structures - Part 5: Snowloads and ice loads
 DIN 1055-6 - Actions on structures - Part 6: Design loads for buildings and loads in silo bins
 DIN 1055-7 - Actions on structures - Part 7: Thermal actions
 DIN 1055-8 - Actions on structures - Part 8: Actions during execution
 DIN 1055-9 - Actions on structures - Part 9: Accidental actions
 DIN 4113-1 - Aluminium constructions under predominantly static loading; static analysis and structural design
 DIN 4113-1/A1 - Aluminium constructions under predominantly static loading - Part 1: Static analysis and structural design; Amendment A1
 DIN 4113-2 - Aluminium constructions under predominantly static loading - Part 2: Static analysis, structural design and execution of welded constructions
 DIN V 4113-3 - Aluminium constructions under predominantly static loading - Part 3: Execution and qualification of constructors
 EN 674 - Glass in building - Determination of the thermal transmittance (U value) - Guarded hot plate method;
 EN 673 - Glass in building - Determination of thermal transmittance (U value) - Calculation method (including Amendment A1:2000 + Amendment A2:2002);
 BS 8118-1:1991 - Structural use of aluminium. Code of practice for design (Structural design, Design, Aluminium, Aluminium alloys, Structural members, Structural systems, Loading, Construction materials, Deformation, Corrosion protection, Joints, Joining processes, Approval testing, Acceptance (approval), Metal sections, Beams, Plate girders, Fatigue, Stress, Static loading, Reports, Safety measures, Design calculations)
 ENV 1627 - Windows, doors, shutters - Burglar resistance - Requirements and classification;
 EN 1627 - Burglar resistant construction products (not for precast concrete parts) - Requirements and classification;

Standards

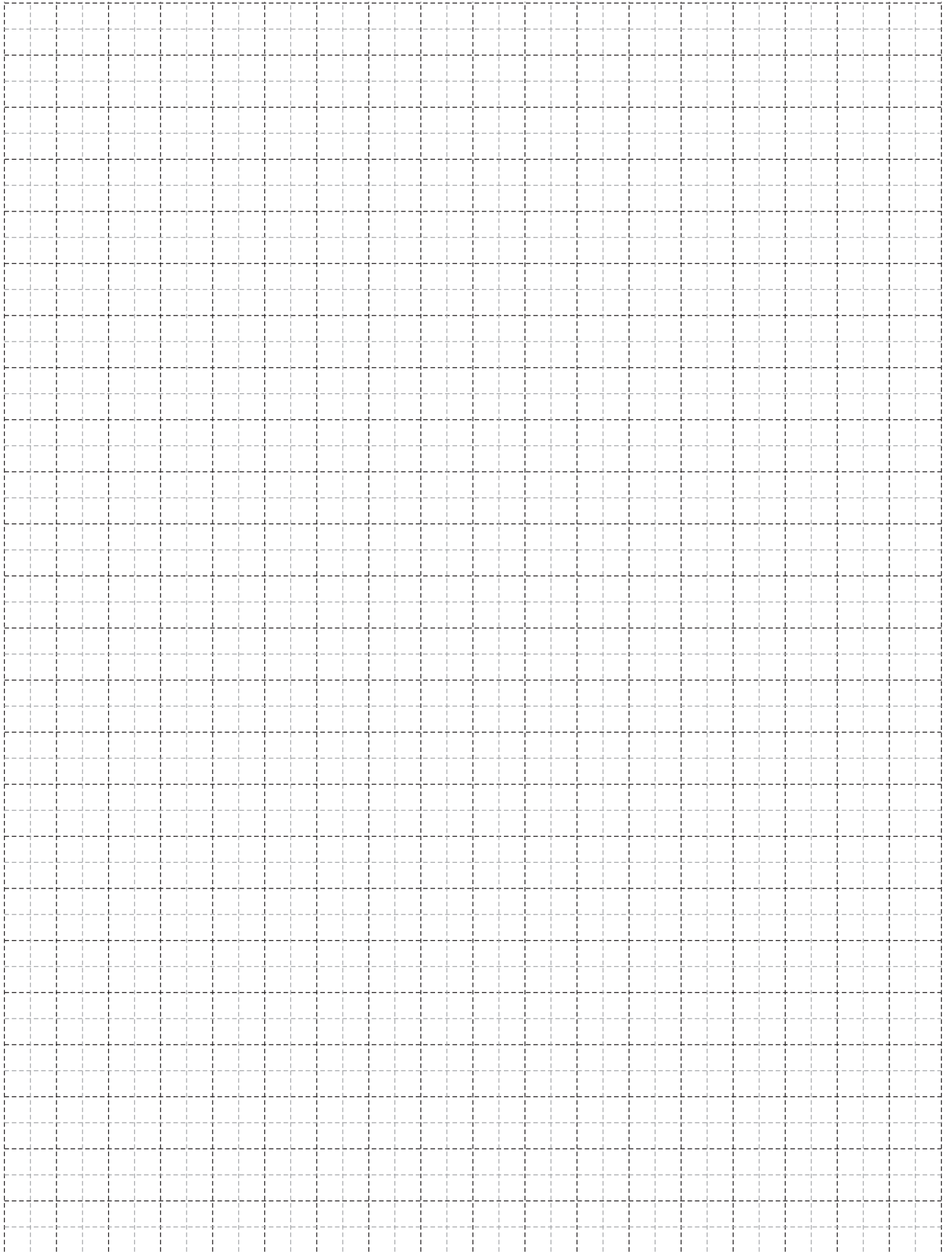
Building codes and reference material

- EN ISO 10077-1 - Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Part 1: General (ISO 10077-1:2006);
- EN ISO 10077-2 - Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Part 2: Numerical method for frames (ISO/FDIS 10077-2:2003);
- EN ISO 12567-1 - Thermal performance of windows and doors - Determination of thermal transmittance by hot box method - Part 1: Complete windows and doors (ISO 12567-1:2000);
- EN ISO 12567-2 - Thermal performance of windows and doors - Determination of thermal transmittance by hot box method - Part 2: Roof windows and other projecting windows (ISO 12567-2:2005);
- EN 12210 - Windows and doors - Resistance to wind load - Classification (includes Corrigendum AC:2002);
- EN 12758 - Glass in building - Glazing and airborne sound insulation - Definitions and determination of properties;
- DIN 4108-1 - Thermal insulation in buildings; quantities and units
- DIN 4108-2 - Thermal protection and energy economy in buildings - Part 2: Minimum requirements to thermal insulation
- DIN 4108-3 - Thermal protection and energy economy in buildings - Part 3: Protection against moisture subject to climate conditions; Requirements and directions for design and construction
- DIN 4108-4 - Thermal insulation and energy economy in buildings - Part 4: Hygrothermal design values
- DIN 4108-6 - Thermal protection and energy economy in buildings - Part 6: Calculation of annual heat and energy use
- DIN 4108-7 - Thermal insulation and energy economy of buildings - Part 7: Airtightness of building, requirements, recommendations and examples for planning and performance
- DIN 4108-10 - Thermal insulation and energy economy in buildings - Application-related requirements for thermal insulation materials - Part 10: Factory made products
- EN 13050 - Curtain walling - Watertightness - Laboratory test under dynamic condition of air pressure and water spray;
- EN 12179 - Curtain walling - Resistance to wind load - Test method
- EN 13116 - Curtain walling - Resistance to wind load - Performance requirements;
- EN 13241-1:2003 - Industrial, commercial and garage doors and gates. Product standard. Products without fire resistance or smoke control characteristics
- EN 949 - Windows and curtain walling, doors, blinds and shutters - Determination of the resistance to soft and heavy body impact for doors;
- EN 14019 - Curtain Walling - Impact resistance - Performance requirements;
- EN 1364 - Fire resistance tests for non-loadbearing elements: Curtain walling - Full configuration (complete assembly);
- EN 1670 - Building hardware - Corrosion resistance - Requirements and test methods;
- EN 12152 - Curtain walling - Air permeability - Performance requirements and classification;
- EN 12153 - Curtain walling - Air permeability - Test methods;
- EN 12154 - Curtain walling - Watertightness - Performance requirements and classification;
- EN 12155 - Curtain walling - Watertightness - Laboratory test under static pressure;
- EN 12179 - Curtain walling - Resistance to wind load - Test method;
- EN 12365-1 - Building hardware - Gaskets and weatherstripping for doors, windows, shutters and curtain walling - Part 1: Performance requirements and classification;



A large, abstract graphic on the left side of the page, consisting of several overlapping yellow and orange geometric shapes, including triangles and rectangles, creating a dynamic, layered effect.

ΓΕΝΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ GENERAL INFORMATION



Γενικές Πληροφορίες

1. Το αλουμίνιο ως δομικό υλικό

Με την μέθοδο της διέλασης το αλουμίνιο έχει την δυνατότητα να δημιουργεί πολύπλοκες διατομές με ανοχές ακριβείας. Το αλουμίνιο μπορεί να μορφοποιηθεί σε πραγματικά απεριόριστο αριθμό μοναδικών προφίλ, καθένα από τα οποία ικανοποιεί ειδικές δομικές και αισθητικές απαιτήσεις. Αυτή η ικανότητα του υλικού να προσφέρει απείριπτες και καλαίσθητες λύσεις σε ιδιαίτερα πολύπλοκα σχεδιαστικά προβλήματα το οδήγησε στην ηγετική θέση που κατέχει σήμερα. Το αλουμίνιο επιλέγεται για το εξωτερικό των κτιρίων γιατί είναι σταθερό, ανθεκτικό στη διάβρωση και ελαφρύ μέταλλο. Μια από τις πιο δελεαστικές ιδιότητες του αλουμινίου για τον μηχανικό, είναι ο καταπληκτικός λόγος αντίστασης/βάρους. Στα 2,7 gr/cm³, το αλουμίνιο είναι 66% πιο ελαφρύ από τον χάλυβα. Επίσης είναι ανθεκτικό σε ψαθυρή θραύση. Όταν γίνεται σύγκριση μεταξύ κατασκευών αλουμινίου και κατασκευών χάλυβα, ο μεγαλύτερος συντελεστής ελαστικότητας του αλουμινίου σημαίνει ότι ο λόγος βάρους 1:2 επιτυγχάνεται εύκολα. Ακόμη, μπορεί να κατεργαστεί με υψηλές ταχύτητες κοπής και οι συγκολλητές συνδέσεις δεν είναι απαραίτητες. Αυτά τα πλεονεκτήματα συμβάλλουν στην μείωση των χρόνων κατασκευής. Τα προφίλ που συνθέτουν τα συστήματα της Alumil είναι από κράμα EN AW 6060 σύμφωνα με το εναρμονισμένο πρότυπο (EN) 755-1. Τα μηχανικά χαρακτηριστικά συμμορφώνονται με το πρότυπο EN 755-2, με συντελεστή ελαστικότητας 70kN/mm². Οι ανοχές βασίζονται στο EN 755-3.

2. Επαφή με άλλα υλικά

2.1 Μέταλλα

Όταν δύο μέταλλα με διαφορετική ηλεκτροαρνητικότητα (electro-negativity) έρχονται σε επαφή σε υγρό περιβάλλον, το πιο ηλεκτροαρνητικό από τα δύο, μέταλλο, υφίσταται μια ηλεκτρική και οξειδωτική τάση. Το αλουμίνιο είναι περισσότερο ηλεκτροαρνητικό συγκρινόμενο με τα άλλα μέταλλα. Ο εκτεθειμένος (απροστάτευτος) χάλυβας, οξειδώνεται και επιτίθεται στο αλουμίνιο. Για να αποφευχθεί η διάβρωση του αλουμινίου, θα πρέπει να τοποθετείται μεταξύ των δύο μετάλλων ένα μονωτικό διαχωριστικό. Αντιθέτως, η επαφή με τον ανοξειδωτο χάλυβα, από όσα γνωρίζουμε μέχρι σήμερα, δεν φαίνεται να βλάπτει το αλουμίνιο. Η επαφή με τον χαλκό και τα κράματά του είναι εξαιρετικά επιζήμια για το αλουμίνιο και η προστασία με επιφανειακή μόνωση αυτών των δύο υλικών απαιτείται. Τέλος και ο μόλυβδος είναι πιο ηλεκτροθετικός από το αλουμίνιο και θα πρέπει να μονώνεται επίσης.

2.2 Ξύλο

Τα περισσότερα είδη ξυλείας δεν έχουν επιβλαβείς επιπτώσεις στο αλουμίνιο. Ορισμένα είδη ξυλείας όμως, όπως η δρύς και η καρυδιά, παράγουν οξέα τα οποία προσβάλλουν και φθείρουν το αλουμίνιο. Αυτά τα φαινόμενα παρατηρούνται κυρίως σε συνθήκες αυξημένης υγρασίας στο περιβάλλον ή όταν το ξύλο δεν είναι αρκετά στεγνό. Συνιστάται η μόνωση με την χρήση ασφαλτούχου χρώματος. Επίσης όταν το ξύλο υποβάλλεται σε επεξεργασίες για την προφύλαξή του από την υγρασία και τα έντομα, θα πρέπει να ελέγχεται ότι οι χημικές ουσίες που χρησιμοποιούνται για την κατεργασία δεν είναι επιβλαβείς για το αλουμίνιο. Προϊόντα που στην σύνθεσή τους περιέχεται στεατικός χαλκός, άλατα υδραργύρου και φθοριούχες ενώσεις, είναι πολύ επιβλαβή για το αλουμίνιο και θα πρέπει να αποφεύγονται.

2.3 Ασβέστης/Τσιμέντο

Σε συνθήκες υγρασίας, ο ασβέστης ή το τσιμέντο αντιδρούν με το αλουμίνιο (ακόμη και όταν είναι ανοδιωμένο) αποκαλύπτοντας επιφανειακές λευκές κηλίδες στην επιφάνεια του μετάλλου μετά τον καθαρισμό. Συνιστάται να προστατεύεται το αλουμίνιο κατά την τοποθέτηση με το προστατευτικό φιλμ της Alumil.

General Information

1. Aluminium as a fabrication material

Aluminium has the capability of being extruded into complex shapes to exact tolerances. Aluminium can be formed into literally thousands of unique profiles, each one able to meet a number of specific structural and aesthetic requirements. It is this capability to provide simple elegant solutions to extremely complex design problems that has led to aluminium's enduring appeal. Aluminium is chosen for outdoor use because it is a stable, corrosion-resistant and light weight metal. One of aluminium's primary appeals to a specifier is its exceptional strength to weight ratio. At 2.7g/cm³, aluminium is 66% lighter than steel. It is also far less susceptible to brittle fractures. Indeed, when aluminium and steel structures are compared, aluminium's greater modulus of elasticity means that weight ratios of 1:2 are easily attained. It can also be processed at high cutting speeds and welded connections are not necessary. These advantages help to reduce fabrication time. Alumil constructions are realized with aluminium profiles extruded in the alloy EN AW 6060 according to EN 755-1. The mechanical characteristics conform to the standard EN 755-2, with a modulus of elasticity of 70GPa. The tolerances are based on EN 755-3.

2. Contact with other materials

2.1 Metals

When two metals of differing electro-negativity values come into contact in humid conditions, an electrical couple is formed giving rise to oxidizing effects at the expense of electro-negative metal of the couple. In order to avoid severe corrosion effects, an insulating barrier should be placed between the two metals. Contact with stainless steel has not been found to be harmful to aluminium to date. Contact with copper and its alloys is extremely harmful to aluminium. It is absolutely necessary to insulate these two metals. Lead should be insulated as well.

2.2 Timber

Most timbers have no harmful effects on aluminium. Some such as walnut however, produce acids which attack and damage aluminium. These effects occur especially in humid conditions or when the timber is not sufficiently dry. Insulation is recommended by using a bituminous paint. When you treat timber against humidity and insects you should check that the chemical substances used in the treatment are not harmful to aluminium. Products containing copper salts, mercury salts, and fluoride compounds are very harmful to aluminium and should be avoided.

2.3 Lime/Cement

In humid conditions, limestone or cement reacts with aluminium (even when anodized) revealing superficial white spots on the surface of the metal after cleaning. It is advisable to protect the aluminium during installation with ALUMIL protective foil.

3. Επιφανειακή επεξεργασία

Είναι διαθέσιμα τα παρακάτω χρώματα:

Αποχρώσεις ανοδίωσης:

Φυσικό ματ χρώμα
Μπρούτζινο χρώμα
Ειδικές αποχρώσεις ανοδίωσης

Η διαδικασία ανοδίωσης γίνεται σύμφωνα με τις προδιαγραφές της EWAA-EURAS.

Χρώματα ηλεκτροστατικής βαφής:

Λευκό
Καφέ
Χρώματα RAL
Χρώματα SABLE

Η διαδικασία της ηλεκτροστατικής βαφής γίνεται σύμφωνα με τις προδιαγραφές της Qualicoat.

4. Αποθήκευση

Για την αποφυγή επιφανειακών φθορών πρέπει να παίρνονται οι παρακάτω προφυλάξεις:

- 4.1 Τα προφίλ να αποθηκεύονται σε χώρο που δεν υπάρχει υγρασία
- 4.2 Να αποφεύγεται οποιαδήποτε επαφή με χάλυβα, προστατεύοντας τα προφίλ με χαρτί συσκευασίας ή πλαστική μεμβράνη. Σε υγρές περιοχές σκουριά και ρινίσματα χάλυβα μπορούν να προκαλέσουν φθορές στην επιφανειακή επεξεργασία.
- 4.3 Τα προφίλ πρέπει να αποθηκεύονται σε οριζόντια θέση με τρόπο που να αποκλείεται η πιθανότητα φθοράς ή γρατσουνίσματος κατά την μετακίνησή τους.
- 4.4 Τα προφίλ να αποθηκεύονται συσκευασμένα.

5. Συντήρηση του αλουμινίου

Τόσο το ανοδιωμένο όσο και το ηλεκτροστατικά βαμμένο αλουμίνιο, πρέπει να καθαρίζονται σε τακτά διαστήματα. Σε ημιαστικές μη παραθαλάσσιες περιοχές που δεν επηρεάζονται από επιθετικά περιβαλλοντικά φαινόμενα όπως ατμοσφαιρική ρύπανση ή αλατώδες περιβάλλον, ο καθαρισμός μπορεί να γίνεται μαζί με τον καθαρισμό των τζαμιών. Για τον καθαρισμό του αλουμινίου συνιστάται η χρήση χλιαρού νερού και ενός «μαλακού» απορρυπαντικού που να μην είναι όξινο και να μην περιέχει αμμωνία. Μετά, πρέπει να ξεβγάζεται επιμελώς με νερό και να στεγνώνεται με ένα μαλακό απορροφητικό πανί. Σε αστικές ή παραθαλάσσιες περιοχές, ο καθαρισμός του αλουμινίου πρέπει να γίνεται πιο συχνά και με πολύ μεγάλη επιμέλεια. Οι επιφάνειες αλουμινίου που δεν εκτίθενται στην βροχή πρέπει να καθαρίζονται με μεγαλύτερη συχνότητα από τις εκτεθειμένες στην βροχή. Αν το νερό και τα μαλακά απορρυπαντικά δεν επαρκούν για τον καλό καθαρισμό του αλουμινίου, υπάρχουν και ειδικά για το αλουμίνιο απορρυπαντικά. Αυτά τα απορρυπαντικά περιέχουν ελαφρώς λειαντικά ψήγματα και μπορούν να χρησιμοποιηθούν σε συνδυασμό με ένα συνθετικό πανί καθαρισμού. Σε όλες τις περιπτώσεις είναι πολύ σημαντικό να ξεπλένονται καλά οι επιφάνειες και να στεγνώνονται επιμελώς, ειδικά οι γωνίες και τα προφίλ που έρχονται σε επαφή με το έδαφος. Για την προστασία και την επιμήκυνση του κύκλου ζωής του αλουμινίου, όλα τα προφίλ που βάφονται στα βαφεία της ALUMIL υποβάλλονται σε βελτιωτική επεξεργασία επιφάνειας SEASIDE CLASS, διαθέσιμο από την ALUMIL.

3. Surface treatment

The following colours are available:
Anodised finish:

Natural colour etched
Bronze colour
Special anodised colours

The anodising process is carried out according to the EWAA-EURAS regulations.
Painted finish:

White
Brown
RAL colours
Sable colours

The painting process is carried out in accordance to Qualicoat regulations.

4. Storage

To avoid superficial damage the following precautions should be taken:

- 4.1 Store the profiles in a dry area
- 4.2 Avoid any contact with steel by protecting the profiles with wrapping paper or plastic foil. In humid areas rust and steel burr can damage the surface finish.
- 4.3 Store the profiles horizontally in such a way as to eliminate the possibility of damaging or scratching the profiles while removing them.
- 4.4 Store the profiles in batches.

5. Aluminium maintenance

Both anodised and painted aluminium should be cleaned on a regular basis. For urban not littoral areas that are not subjected to aggressive elements like air pollution or salty air, it is sufficient to clean the aluminium whenever you clean the glass. Warm water should be used with a dilute of a non-aggressive, non-acetous detergent without ammonia for cleaning the aluminium. Then you should thoroughly rinse the aluminium with clear water and dry using an absorbing cloth. In urban areas or areas near to the sea, the aluminium should be cleaned more often and more thoroughly. Areas that are not exposed to rainfall should be cleaned more frequently than other surfaces. If water and mild detergents are not enough to clean the aluminium fenestrations there are detergents that have been specially developed for aluminium surfaces. These detergents contain light abrasive elements and can be used with a synthetic cleaning cloth. In all cases it is important to completely rinse surfaces with clear water and dry them thoroughly, especially the corners and the bottom profile. In order to protect and increase the life cycle of the aluminium, it may be treated with a very thin clear coat of water resistant film available from ALUMIL.

Χρήσιμα Ευρωπαϊκά πρότυπα και προδιαγραφές | Useful European standards and reference material

EN 10211	Θερμικές γέφυρες σε κτιριακές κατασκευές - Ροές θερμότητας και επιφανειακές θερμοκρασίες - Μέρος 1-2 Thermal bridges in building construction - Heat flows and surface temperatures - Detailed calculations (ISO 10211:2007) Parts 1-2
EN 12020-1	Αλουμίνιο και κράματα αλουμινίου - Διελασμένο προφίλ ακριβείας από κράματα EN AW-6060 και EN AW-6063 - Μέρος 1: Τεχνικές συνθήκες για έλεγχο και παράδοση Aluminium and aluminium alloys - Extruded precision profiles in alloys EN AW-6060 and EN AW-6063 - Part 1: Technical conditions for inspection and delivery
EN 12020-2	Αλουμίνιο και κράματα αλουμινίου - Διελασμένο προφίλ ακριβείας από κράματα EN AW-6060 και EN AW-6063 - Μέρος 2: Ανοχές διαστάσεων και μορφή Aluminium and aluminium alloys - Extruded precision profiles in alloys EN AW-6060 and EN AW-6063 - Part 2: Tolerances on dimensions and form
EN 12046	Δυνάμεις χειρισμού - Μέθοδος δοκιμής - Μέρος 1-2 Operating forces - Test method - Part 1: Windows Part 2: Doors
EN 12152	Υαλοπετάσματα - Αεροδιαπερατότητα - Απαιτήσεις επιδόσεων και ταξινόμηση Curtain walling - Air permeability - Performance requirements and classification
EN 12153	Υαλοπετάσματα - Αεροπερατότητα - Μέθοδος δοκιμής Curtain walling - Air permeability - Test method
EN 12154	Υαλοπετάσματα - Υδατοστεγανότητα - Απαιτήσεις απόδοσης και ταξινόμηση Curtain walling - Watertightness - Performance requirements and classification
EN 12155	Υαλοπετάσματα - Υδατοστεγανότητα - Εργαστηριακή δοκιμή υπό στατική πίεση Curtain walling - Watertightness - Laboratory test under static pressure
EN 12179	Υαλοπετάσματα - Αντίσταση στην ανεμοπίεση - Μέθοδος δοκιμής Curtain walling - Resistance to wind load - Test method
EN 12207	Παράθυρα και πόρτες - Αεροπερατότητα - Ταξινόμηση Windows and doors - Air permeability - Classification
EN 12208	Παράθυρα και πόρτες - Υδατοπερατότητα - Ταξινόμηση Windows and doors - Watertightness - Classification
EN 12210	Παράθυρα και πόρτες - Αντίσταση στην ανεμοπίεση - Ταξινόμηση Windows and doors - Resistance to wind load - Classification
EN 12211	Παράθυρα και πόρτες - Αντίσταση στην ανεμοπίεση - Μέθοδος δοκιμής Windows and doors - Resistance to wind load - Test method
EN 12400	Παράθυρα και πόρτες - Μηχανική ανθεκτικότητα - Απαιτήσεις και ταξινόμηση Windows and pedestrian doors - Mechanical durability - Requirements and classification
EN 12519	Παράθυρα και πόρτες για πεζούς - Ορολογία Windows and pedestrian doors - Terminology
EN 12567	Θερμική απόδοση παραθύρων και θυρών - Προσδιορισμός της θερμικής μετάδοσης με τη μέθοδο θερμής πλάκας - Μέρος 1 Thermal performance of windows and doors - Determination of thermal transmittance by hot box method - Part 1-2
EN 13049	Παράθυρα - Κρούση με μαλακό και βαρύ σώμα - Μέθοδος δοκιμής, απαιτήσεις ασφαλείας και ταξινόμηση Windows - Soft and heavy body impact - Test method, safety requirements and classification
EN 13115	Παράθυρα - Ταξινόμηση μηχανικών ιδιοτήτων - Φορτία που εξασκούνται κάθετα, κατά την στρέψη και κατά την λειτουργία Windows - Classification of mechanical properties - Racking, torsion and operating forces
EN 13141	Αερισμός κτιρίων - Δοκιμές επίδοσης συστατικών μερών / προϊόντων για αερισμό κατοικιών - Μέρος 1-8 Ventilation for buildings - Performance testing of components/products for residential ventilation Parts 1-8

Χρήσιμα Ευρωπαϊκά πρότυπα και προδιαγραφές | Useful European standards and reference material

EN 13123	Παράθυρα, πόρτες και εξώφυλλα - Αντίσταση στις εκρήξεις - Απαιτήσεις και ταξινόμηση - Μέρος 1-2 Windows, doors and shutters - Explosion resistance - Requirements and classification Parts 1-2
EN 13124	Παράθυρα, πόρτες και εξώφυλλα - Αντοχή σε εκρήξεις - Μέθοδοι δοκιμής - Μέρος 1-2 Windows, doors and shutters - Explosion resistance - Test method Parts 1-2
ENV 13420	Παράθυρα - Συμπεριφορά μεταξύ διαφορετικών κλιμάκων - Μέθοδος δοκιμής Windows - Behaviour between different climates - Test method
EN 13501	Ταξινόμηση δομικών προϊόντων και στοιχείων σχετικά με την φωτιά - Μέρος 1-5 Fire classification of construction products and building elements Parts 1-5
EN 13541	Ύαλος για δομική χρήση - Υαλοστάσια ασφαλείας - Δοκιμές για ταξινόμηση της αντίστασης σε πίεση λόγω έκρηξης Glass in building - Security glazing - Testing and classification of resistance against explosion pressure
EN 14351	Παράθυρα και πόρτες - Πρότυπο προϊόντος, χαρακτηριστικά επίδοσης - Μέρος 1: Παράθυρα και εξωτερικά συστήματα θυρών για πεζούς χωρίς χαρακτηριστικά πυραντίστασης ή/και διαρροής καπνού Windows and doors - Product standard, performance characteristics
EN 14600	Συστήματα θυρών και ανοιγόμενα παράθυρα με χαρακτηριστικά πυραντίστασης ή/και ελέγχου καπνού - Απαιτήσεις και ταξινόμηση Doorsets and openable windows with fire resisting and/or smoke control characteristics - Requirements and classification
EN 14608	Παράθυρα - Προσδιορισμός της αντίστασης σε κατακόρυφο φορτίο Windows - Determination of the resistance to racking
EN 14609	Παράθυρα - Προσδιορισμός της αντίστασης σε στατική στρέψη Windows - Determination of the resistance to static torsion



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