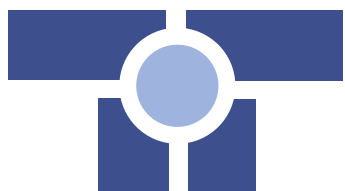


Tecnoperfil

INDÚSTRIA CONSTRUÇÃO CIVIL

CATÁLOGO DE PERFIS



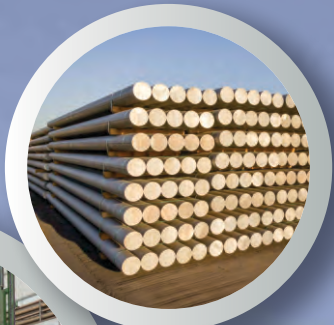
Tecnoperfil



A Tecnoperfil foi fundada em Setembro de 2004, com o objetivo de fabricar perfis extrudados de alumínio para os mais diversos setores como construção civil, indústria automobilística, indústria de bens de consumo, equipamentos elétricos, máquinas e equipamentos além dos mais variadas aplicações industriais.

Em 2012, expandiu sua operação para uma moderna planta em Hortolândia - SP, com mais de 110.000 m² e 200 funcionários que juntos, fazem a operação de duas prensas de extrusão italianas com tecnologia de ponta, uma das mais avançadas do mercado. Focada em oferecer a melhor qualidade de produtos, custo benefício e agilidade no atendimento aos clientes, a Tecnoperfil possui uma planta extremamente automatizada com capacidade de produção de 1.800 toneladas mensais e operando com tarugos de 7".

A Tecnoperfil é uma empresa do mesmo grupo que a tradicional Zincolor, atuante desde 1978 no mercado de acabamento superficial de pintura eletrostática e anodização.



Tecnoperfil

TS

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CÓDIGO	PESO (KG/M)	PÁGINA
CONTRA MARCOS/CONEXÕES		
TCL-006	1,001	4,002
TCL-009	1,411	4,002
TCL-010	0,396	4,002
TCL-011	0,318	4,002
TCM-060	0,275	4,001
TCM-063	0,220	4,001
TCM-083	0,310	4,001
TCM-098	0,383	4,001
TCM-126	0,451	4,001
TCM-151	0,309	4,001
TCM-200	0,198	4,001

ARREMATES		
RM-0001	0,288	5,001
RM-0002	0,195	5,001
TCM-029A	0,242	5,001
TCM-130	0,166	5,001
TCM-169	0,411	5,001
TME-013	0,236	5,001
TME-114	0,090	5,001
TMN-014	0,196	5,001
TMP-347	0,202	5,001

LINHA 25		
45-157B	0,340	6,001
T25-001	0,298	6,004
T25-002	0,313	6,004
T25-005	0,419	6,004
T25-011	0,398	6,002
T25-014	0,493	6,002
T25-015	0,519	6,002
T25-016	0,424	6,002
T25-018	0,405	6,004
T25-020	0,241	6,004
T25-021	0,220	6,001
T25-026	0,494	6,003

CÓDIGO	PESO (KG/M)	PÁGINA
T25-027	0,269	6,004
T25-502	0,694	6,002
T25-504	0,558	6,002
T25-508	0,665	6,003
T25-514	0,406	6,001
T25-516	0,793	6,001
T25-517	0,493	6,002
T25-540	0,453	6,003
T25-542	0,609	6,003
T25-548	0,278	6,003
T25-669	0,598	6,003
TBG-001	0,102	6,001
TFC-070	0,781	6,001
TME-024	0,375	6,001

LINHA 30		
T30-001	0,464	7,001
T30-003	0,457	7,001
T30-008	0,604	7,001
T30-014	0,613	7,001
T30-019	0,300	7,003
T30-023	0,541	7,003
T30-025	0,763	7,002
T30-026	0,694	7,003
T30-028	1,122	7,002
T30-030	1,161	7,002
T30-034	0,277	7,003
T30-044	0,275	7,004
T30-048	0,595	7,004
T30-049	0,473	7,004
T30-051	0,332	7,004
T30-054	0,336	7,003
T30-056	0,332	7,003
T30-077	0,680	7,003
T30-077A	0,389	7,004
T30-082	1,211	7,002
T30-235	0,661	7,002
T30-312	1,505	7,001

CÓDIGO	PESO (KG/M)	PÁGINA
T30-253	0,735	7,001
TBG-010	0,114	7,004

MÓDULO PRÁTICO		
TBG-202	0,098	8,003
TMP-069	0,602	8,002
TMP-070	0,497	8,002
TMP-300	0,361	8,002
TMP-302	0,443	8,002
TMP-309	0,387	8,003
TMP-321	0,468	8,002
TMP-332	0,473	8,003
TMP-336	0,424	8,002
TMP-352	0,200	8,003
TMP-354	0,982	8,003
TMP-361	1,146	8,003
TMP-363	0,543	8,003
TMP-357	0,570	8,001
TMP-360	0,445	8,001
TMP-389	0,466	8,001
TMP-397	0,378	8,001
TMP-415	0,570	8,001

MÓDULO MAX		
T25-301	0,349	9,001
T25-308	0,459	9,001
T25-311	0,336	9,001
T25-312	0,337	9,001
TBG-035	0,117	9,001
TME-056	0,171	9,001
TMM-375	0,391	9,001
TMM-376	0,521	9,001

VENEZIANAS		
VZ-0004	0,255	10,001
VZ-0006	0,298	10,001
VZ-0020	0,261	10,002
VZ-0023	0,293	10,001

SUMÁRIO DE PERFIS



CÓDIGO	PESO (KG/M)	PÁGINA
VENEZIANAS		
VZ-0024	0,271	10,001
VZ-0025	0,267	10,001
VZ-0027	0,276	10,002
VZ-0051	0,268	10,002
VZ-0060	0,372	10,002
VZ-0063	0,263	10,002
VZ-0990	0,286	10,002
VZ-0201	0,261	10,001

GRADIS		
TCG-003	0,437	11,003
TCG-004	0,268	11,003
TCG-005	0,639	11,002
TCG-006	0,470	11,003
TCG-012	0,502	11,003
TCG-013	1,151	11,002
TCG-017	0,338	11,003
TCG-019	0,161	11,003
TCG-021	0,324	11,003
TCG-072	1,131	11,001
TCG-074	0,261	11,002
TCG-075	0,480	11,002
TCG-077	0,750	11,002
TCG-083	1,235	11,001
TCG-366	0,410	11,002
TD-0855	0,809	11,003

DIVISÓRIAS		
DS-0202	0,129	12,001
DV-0020	0,252	12,001
DV-0029	0,242	12,001
DV-0111	0,171	12,001
DV-0112	0,273	12,001

PORTÕES		
T30-044	0,275	13,002

CÓDIGO	PESO (KG/M)	PÁGINA
TDS-152	0,635	13,002
TDS-152A	0,791	13,002
TDS-266	0,495	13,002
TDS-832	0,900	13,004
TP-0719	1,470	13,004
TPC-0010L	0,910	13,001
TPC-002	0,568	13,001
TPC-003	0,939	13,001
TPC-004	0,660	13,001
TPC-005	0,653	13,002
TPC-006	0,405	13,002
TPC-026	0,694	13,001
TPC-027	0,785	13,001
TPC-030	0,745	13,004
TPC-160	1,175	13,003
TPC-190	1,087	13,004
TPC-811	2,855	13,003

LAMBRIS		
19-0065	0,619	14,005
TLB-010	0,537	14,001
TLB-038	0,998	14,003
TLB-039	0,511	14,004
TLB-050E	0,511	14,001
TLB-050L	0,606	14,001
TLB-069	0,721	14,002
TLB-070	0,756	14,004
TLB-071	0,606	14,002
TLB-080	0,983	14,005
TLB-082	0,619	14,003
TLB-185	0,771	14,005
TLB-189	1,583	14,005
TLB-238	0,618	14,004
TLB-335	0,730	14,001

CÓDIGO	PESO (KG/M)	PÁGINA
BOX		
42-0312	0,483	15,001
42-0314	0,248	15,003
PU-0041	0,165	15,003
PU-0042	0,166	15,003
PU-0062	0,195	15,007
TAL-001	0,482	15,006
TAL-002	0,245	15,006
TAL-003	0,297	15,006
TAL-015	0,132	15,006
TAL-046	0,137	15,006
TAL-049	0,588	15,006
TAL-050	0,267	15,006
TAL-070	0,483	15,006
TBX-022	0,510	15,004
TBX-029	0,082	15,009
TBX-030	0,194	15,009
TBX-039	0,337	15,004
TBX-059	0,250	15,007
TBX-068	0,099	15,005
TBX-069	0,354	15,005
TBX-090	0,311	15,009
TBX-092	0,207	15,007
TBX-093	0,160	15,008
TBX-095	0,217	15,007
TBX-096	0,163	15,007
TBX-102	0,053	15,007
TBX-103	0,126	15,008
TBX-105	0,066	15,004
TBX-106	0,266	15,001
TBX-107	0,259	15,002
TBX-111	0,769	15,004
TBX-112	0,198	15,002
TBX-113	0,244	15,004
TBX-137	0,149	15,009
TBX-141	0,406	15,009

CÓDIGO	PESO (KG/M)	PÁGINA
TBX-158	0,188	15,002
TBX-159	0,241	15,002
TBX-164	0,303	15,008
TBX-169	0,931	15,009
TBX-174	0,225	15,001
TBX-174-GD	0,195	15,001
TBX-182	0,335	15,008
TBX-184	0,265	15,005
TBX-187	0,691	15,009
TBX-188	0,294	15,009
TBX-198	0,260	15,008
TBX-200	0,528	15,002
TBX-206	0,384	15,004
TBX-209	0,273	15,004
TBX-212	0,130	15,007
TBX-214	0,329	15,008
TBX-221	0,570	15,007
TBX-225	0,103	15,005
TBX-229	0,794	15,005
TBX-232	0,125	15,005
TBX-240	0,433	15,005
TBX-281	0,147	15,009
TBX-297	0,527	15,008
TBX-329	0,107	15,007
TBX-346	0,209	15,002
TBX-347	0,443	15,001
TBX-349	0,215	15,001
TBX-350	0,158	15,002
TBX-689	0,143	15,004
TP-0202	0,214	15,005
TP-0208	0,057	15,005
TP-0240	0,270	15,005
TP-0255	0,641	15,005

FECHAMENTO DE SACADA		
TFS-001	1,223	16,001
TFS-002	0,501	16,001

CÓDIGO	PESO (KG/M)	PÁGINA
TFS-003	0,660	16,001
TFS-004	0,176	16,001

FACHADA CORTINA		
TFC-012	1,204	17,001
TFC-013	0,245	17,001
TFC-014	0,315	17,001

TECNO 2.5		
TSU-001	0,760	18,001
TSU-002	0,700	18,002
TSU-003	0,509	18,001
TSU-003A	0,505	18,001
TSU-004	0,475	18,001
TSU-005	0,956	18,001
TSU-007	0,357	18,001
TSU-008	0,226	18,003
TSU-009	0,881	18,005
TSU-010	1,024	18,004
TSU-011	0,941	18,004
TSU-012	0,509	18,006
TSU-013	0,699	18,006
TSU-014	0,675	18,006
TSU-015	0,883	18,005
TSU-016	0,823	18,005
TSU-026	0,877	18,003
TSU-028	0,501	18,003
TSU-029	0,645	18,003
TSU-030	0,551	18,020
TSU-031	1,278	18,008
TSU-032	1,162	18,008
TSU-033	0,721	18,008
TSU-039	0,521	18,009
TSU-039A	0,472	18,009
TSU-040	0,496	18,009
TSU-040A	0,438	18,009
TSU-041	0,508	18,009
TSU-041A	0,467	18,009
TSU-042	0,570	18,010
TSU-043	0,967	18,010
TSU-044	0,956	18,010

CÓDIGO	PESO (KG/M)	PÁGINA
TSU-047	0,981	18,010
TSU-048	1,039	18,012
TSU-049	1,043	18,010
TSU-050	0,885	18,013
TSU-053	0,475	18,013
TSU-055	0,542	18,014
TSU-056	0,538	18,014
TSU-060	0,976	18,014
TSU-060A	0,755	18,014
TSU-061	1,062	18,014
TSU-068	0,534	18,016
TSU-069	0,576	18,016
TSU-070	0,521	18,016
TSU-071	0,280	18,018
TSU-073A	0,694	18,021
TSU-079	0,329	18,020
TSU-080	0,357	18,019
TSU-081	0,368	18,019
TSU-082	0,382	18,019
TSU-083	0,143	18,019
TSU-084	0,125	18,019
TSU-085	0,437	18,020
TSU-086	0,543	18,020
TSU-090	0,447	18,020
TSU-091	0,402	18,020
TSU-093	0,284	18,017
TSU-094	0,357	18,017
TSU-097	0,400	18,017
TSU-098	0,399	18,017
TSU-099	0,208	18,017
TSU-102	0,109	18,016
TSU-102A	0,104	18,016
TSU-103	0,155	18,016
TSU-107	0,271	18,014
TSU-108	0,135	18,016
TSU-111	0,617	18,018
TSU-121	1,415	18,007
TSU-122	1,414	18,007

SUMÁRIO DE PERFIS



CÓDIGO	PESO (KG/M)	PÁGINA
TSU-123	0,970	18,007
TSU-186	0,506	18,015
TSU-187	0,471	18,016
TSU-188	0,582	18,015
TSU-192	0,507	18,010
TSU-200	0,386	18,019
TSU-225	0,990	18,013
TSU-226	1,014	18,015
TSU-227	0,555	18,013
TSU-228	0,652	18,002
TSU-230	0,954	18,004
TSU-238	0,714	18,011
TSU-239	0,783	18,011
TSU-241	0,688	18,018
TSU-242	0,659	18,011
TSU-243	0,628	18,011
TSU-244	0,693	18,011
TSU-245	0,623	18,021
TSU-245A	0,780	18,021
TSU-246	0,645	18,012
TSU-251	0,825	18,003
TSU-260	0,703	18,002
TSU-272	0,438	18,002
TSU-279	0,563	18,021
TSU-289	1,025	18,012
TSU-290	1,053	18,012

LINHA TECNO 3.2

AG-012SB	0,550	19,014
AG-015SB	0,545	19,014
AG-016SB	0,628	19,014
AG-033SB	0,693	19,014
AG-034SB	0,957	19,014
AG-035SB	0,931	19,014
LG-06SB	0,759	19,012
LG-07SB	1,276	19,012
LG-34SB	0,957	19,012
LG-43SB	0,912	19,013
LG-50SB	0,878	19,013
LG-51SB	1,000	19,013

CÓDIGO	PESO (KG/M)	PÁGINA
LG-55SB	0,985	19,012
LG-58SB	0,836	19,013
TBG-057	0,168	19,015
TLG-002	0,601	19,003
TLG-003	0,714	19,002
TLG-004	2,035	19,002
TLG-005	2,113	19,003
TLG-006	0,650	19,008
TLG-007	1,214	19,008
TLG-015	0,142	19,015
TLG-016	0,347	19,011
TLG-018	1,522	19,011
TLG-021	1,500	19,011
TLG-024	1,129	19,001
TLG-026	0,148	19,015
TLG-027	0,138	19,015
TLG-028	0,433	19,004
TLG-042	0,959	19,016
TLG-043R	0,807	19,016
TLG-043S	0,768	19,016
TLG-044	1,245	19,001
TLG-045	0,953	19,003
TLG-046	0,213	19,004
TLG-047	1,127	19,001
TLG-048	0,910	19,010
TLG-049	0,875	19,010
TLG-049A	0,978	19,010
TLG-050	0,799	19,009
TLG-050A	0,925	19,008
TLG-051	0,904	19,009
TLG-052	1,668	19,010
TLG-053	1,651	19,009
TLG-054	1,574	19,009
TLG-055	0,758	19,008
TLG-056C	0,642	19,007
TLG-058	0,750	19,016

CÓDIGO	PESO (KG/M)	PÁGINA
TLG-059	0,169	19,015
TLG-061	0,319	19,004
TLG-062	1,728	19,004
TLG-063	0,549	19,007
TLG-064	1,358	19,005
TLG-066	1,523	19,004
TLG-068	0,386	19,019
TLG-070	2,075	19,006
TLG-070A	2,273	19,017
TLG-071	1,962	19,006
TLG-071A	2,083	19,017
TLG-072	1,098	19,007
TLG-072A	1,236	19,017
TLG-074	0,751	19,019
TLG-077C	0,890	19,011
TLG-124	0,812	19,003
TLG-126A	0,959	19,015
TLG-127A	1,698	19,015
TLG-128	0,872	19,019
TLG-129	1,242	19,018
TLG-130	0,655	19,018
TLG-131A	0,764	19,019
TLG-132	0,773	19,018
TLG-158	0,899	19,005
TLG-168A	1,117	19,018
TLG-610	0,967	19,002

LINHA 42

TBG-023	0,202	20,001
TBG-037	0,190	20,002
T42-004	1,093	20,001
T42-006	1,578	20,001
T42-007	1,212	20,002
T42-012	0,814	20,002
T42-014	0,371	20,001
T42-032	1,377	20,001
T42-035	1,182	20,002
T42-042	0,573	20,002

CÓDIGO	PESO (KG/M)	PÁGINA
INTEGRADA		
TLG-034	2,141	21,005
TLG-035	1,090	21,006
TLG-041L	1,370	21,005
TLG-060	1,016	21,004
TLG-070D	1,024	21,007
TLG-071D	0,752	21,007
TLG-858	0,751	21,006
TLG-859	1,553	21,004
TLG-861	1,338	21,004
TLG-862	0,270	21,010
TMN-001	1,380	21,008
TMN-003	1,092	21,008
TMN-007	0,707	21,010
TMN-015	0,790	21,010
TMN-027	0,987	21,010
TMN-031	1,008	21,009
TMN-032	1,285	21,009
TMN-039	1,400	21,007
TMN-055	0,382	21,010
TMN-501	0,923	21,011
TMN-502	1,128	21,011
TP-0238	0,485	21,010
TSU-136	0,978	21,003
TSU-137	1,100	21,001
TSU-138	0,795	21,003
TSU-139	1,275	21,001
TSU-140	0,815	21,002
TSU-142	1,207	21,002
TSU-143	0,951	21,001

DISSIPADORES		
DIS-008	1,720	22,001
DIS-009	3,769	22,001
DIS-010	3,829	22,001
DIS-011	2,025	22,004
DIS-026	3,413	22,002

CÓDIGO	PESO (KG/M)	PÁGINA
DIS-027	4,010	22,003
DIS-028	2,274	22,002
DIS-031	2,311	22,005
DIS-053	2,103	22,002
DIS-055	2,125	22,005
DIS-062	3,943	22,005
DIS-067	0,345	22,003
DIS-068	0,866	22,004
DIS-518	2,500	22,004
DIS-467	1,093	22,003

BICICLETAS		
TB-0001	5,823	23,001
TB-0002	7,574	23,001
TB-0003	0,606	23,002
TB-0004	0,487	23,002
TB-0005	1,247	23,001
TB-0006	3,143	23,001
TP-0222	0,242	23,002

MÓVEIS - PUXADORES		
TM-0775	0,314	24,001
TDP-572	0,279	24,001
TDP-573	0,300	24,001
TDP-595	0,622	24,001
TDP-596	0,756	24,001
TDP-614	0,506	24,001

FACHADA		
TFA-200	1,986	25,001
TFA-201	1,817	25,001
TFA-211	0,999	25,002
TFA-242	1,355	25,002
TFA-347	1,255	25,002
TFA-403	0,631	25,001
TFA-405	0,666	25,001

CÓDIGO	PESO (KG/M)	PÁGINA
DIVERSOS		
TSD-001	1.150	26,001
TP-7132	0.205	26,001
TP-0193	3.311	26,001
TP-0192	1.379	26,001

EQUIVALÊNCIA ENTRE NORMAS

Liga ASTM	ABNT/Brasil	Alemanha (DIN)	Inglaterra (BS)	Itália (UNI)	França (NF ou AIR)
1050	1050	Al 99,5	1B	P-Al-P 99,5	A5
1100	1100	Al 99,0	1C	P-Al-P 99,0	A4
1350	1350	E-Al99,5	1E	-	A5/L
6005A	6005A	Al Mg Si 0,7	-	-	-
6060	6060	Al Mg Si 0,5	H-9	P-Ai Si 0,4 Mg	A-GS
6061	6061	Al Mg Si Cu	H-20	P-Al Mg1 Si Cu	A-GSUC
6063	6063	Al Mg Si 0,5	H-9	P-Al Mg Si	A-GS
6101	6101	E-Al Mg Si 0,5	91E	P-Al Si 0,5 Mg	A-G S/L
6261	6261	-	-	-	-
6351	6351	Al Mg Si	H-30	P-Al Si Mg Mn	A-SGM
6463	6463	-	-	P-Al Mg Si / Cu	-

CARACTERÍSTICAS FÍSICAS DO ALUMÍNIO E OUTROS MATERIAIS

Propriedades físicas	Alumínio (1100)	Aço (1020)	Cobre (Puro)
Peso específico (kg/m ³) x 10 ³	2,71	7,86	8,96
Temperatura de fusão (°C)	657	1500	1083
Módulo de elasticidade (kg/mm ²)	7.000	21.000	11.250
Coefficiente de dilatação térmica linear - 20° a 100° C (M/M.K)	23,6x10 ⁻⁶	11,7.10 ⁻⁶	16,5.10 ⁻⁶
Condutibilidade térmica a 25°C (W/M.K)	222	52	394
Condutibilidade elétrica (%IACS) à 20 °C	59	14,5	100

COMPOSIÇÃO QUÍMICA

ASTM	Si	Fe	Cu	Mn	Mg	Cr	Zn	i	Outros elementos		Alumínio (Mínimo)
									Cada	Total	
1050	0,25	0,40	0,05	0,05	0,05	-	0,05	0,03	0,03	-	99,50
1100	1,0	Si+Fe	0,05-0,20	0,05	-	-	0,10	-	0,05	0,15	99,00
1350	0,10	0,40	0,05	0,01	-	0,01	0,05	Ti+V<0,02	0,03	0,10	99,50
6005A	0,50-0,90	0,35	0,30	0,50	0,40-0,70	0,30	0,20	0,10	0,05	0,15	Restante
6060	0,30-0,6	0,10-0,30	0,10	0,10	0,35-0,60	0,05	0,15	0,10	0,05	0,15	Restante
6061	0,40-0,80	0,70	0,15-0,40	0,15	0,80-1,2	0,04-0,35	0,25	0,15	0,05	0,15	Restante
6063	0,20-0,60	0,35	0,10	0,10	0,45-0,90	0,10	0,10	0,10	0,05	0,15	Restante
6082	0,7-1,3	0,50	0,10	0,40-1,0	0,60-1,2	0,25	0,20	0,10	0,05	0,15	Restante
6101	0,30-0,70	0,50	0,10	0,03	0,35-0,8	0,03	0,10	-	0,03	0,10	Restante
6261	0,40-0,70	0,40	0,15-0,40	0,20-0,35	0,7-1,0	0,10	0,20	0,10	0,05	0,15	Restante
6351	0,7-1,3	0,50	0,10	0,40-0,8	0,40-0,8	-	0,20	0,20	0,05	0,15	Restante
6463	0,2-0,6	0,15	0,2	0,05	0,45-0,9	-	0,05	0,03	0,05	0,15	Restante

Os valores mencionados indicam porcentagens em peso e representam limites máximos, salvo quando expresso intervalo. A composição química é equivalente ao ISO 209.

PROPRIEDADES MECÂNICAS

Propriedades de liga			Limite de resistência à tração Kg /mm ²	Limite de escoamento Kg /mm ²	Alongamento em 50 mm (%)	Dureza bri- nell 500/10 HB(2)	Limite de Resistência ao cizalhamento Kg/mm ²	Resistência a Fadiga 500x10 6 Ciclos (Kg/mm ²)
Liga	Aplicações típicas	Têmpera						
1050	Equipamentos para indústrias químicas, alimentícias e de bebidas	0	9,8 (9,1)	- (3,2)	- (45)	- (20)	- (5,6)	- (2,8)
		H14	10,5 (11,2)	- (9,8)	- (35)	- (32)	- (7,0)	- (3,5)
		H18	13,4 (14,4)	- (13,7)	- (22)	- (40)	- (8,4)	- (4,9)
		H24	- (11,2)	-	-	-	-	-
1100	Painéis decorativos, etiquetas, utensílios domésticos, uso geral, peças estampadas, aletas.	0	10,7 -	- (3,5)	- (45)	- (23)	- (6,3)	- (3,5)
		H12	9,7 -	-	-	-	-	-
		H14	11,2 (12,0)	- (11,2)	- (25)	- (34)	- (7,7)	- (4,9)
		H16	13,3 -	-	-	-	- (8,4)	- (5,5)
		H18	15,4 (21,0)	- (16,1)	- (20)	- (44)	- (9,1)	- (6,3)
		F	-	-	-	-	-	-
1200	Equipamento para indústrias químicas, alimentícias e de bebidas	0	10,9 (8,4)	- (3,5)	- (45)	- (23)	- (16,3)	- (3,5)
		H14	11,2 (12,0)	- (11,2)	- (25)	- (32)	- (7,7)	- (4,9)
		H18	15,4 (21,0)	- (16,1)	- (20)	- (44)	- (9,1)	- (6,3)
2117	Rebites	T4	26,7 (30,2)	12,6 (17,0)	18 (27)	- (70)	18,3 (19,7)	- (13,5)
2017	Peças com elevada resistência mecânica - usinagem	0	24,6 (18,3)	- (9,8)	16 (30)	- (45)	- (12,7)	- (9,1)
		T4	38,7 (45,7)	22,5 (29,6)	16 (24)	- (105)	- (26,7)	- (12,6)
2024	Peças com elevada resistência mecânica - forjagem	0	24,6 (22,5)	13,3 (11,2)	12 (15)	- (42)	- (12,6)	- (8,4)
		T4	40,0 (45,7)	29,5 (36,5)	12 (17)	- (105)	- (28,8)	- (12,6)
2014	Peças com elevada resistência mecânica - forjagem	0	21,1 (20,4)	12,6 (10,5)	12 (14)	- (45)	- (12,6)	- (7,7)
		T4	35,1 (43,6)	24,6 (29,5)	12 (18)	- (105)	- (26,7)	- (12,6)
		T6	42,2 (47,1)	37,2 (42,9)	7 (11)	- (135)	- (31,6)	- (12,6)
2011	Peças usinadas em torno automático	T3	30,1 (33,9)	23,8 (29,7)	10 (15)	- (95)	- (21,0)	- (12,6)
		T6	29,6 (34,0)	- (23,0)	- (16)	-	-	-
		T8	- (41,5)	- (31,5)	- (12)	- (100)	- (24,5)	- (12,5)
4043	Solda	-	-	-	-	-	-	
4047	Solda	-	-	-	-	-	-	
6063	Caixilharia e ornamentos - anodização fosca	0	11,9 (10,5)	- (3,5)	- (40)	- (26)	- (7,7)	- (5,5)
		T4A	11,1 (14,1)	6,0 (8,4)	16 (25)	- (48)	- (10,0)	- (6,5)
		T5	15,4 (19,6)	11,9 (16,8)	8 (16)	- (66)	- (12,0)	- (7,0)
		T6C	18,3 (22,1)	14,8 (19,7)	8 (14)	- (68)	- (15,5)	- (7,0)
		T8A	21,0 (28,0)	17,5 (25,2)	8 (13)	-	- (15,5)	-
		T8D	25,9 (30,8)	23,8 (28,7)	7 (12)	-	- (12,5)	-
		T8E	- (19,0)	- (17,0)	- (10)	-	- (19,0)	-
6463	Frisos decorativos com alta refletividade	T4A	- (14,0)	- (7,0)	- (20)	- (42)	- (10,0)	- (7,0)
		T6C	- (24,0)	- (21,0)	- (12)	- (74)	- (15,5)	- (7,0)
6101	Aplicação elétrica - boa resistência mecânica	T5	- (18,5)	- (15,0)	-	-	-	55,0
		T6	20,4 (25,5)	17,5 (23,0)	- (13)	- (78)	%IACS	55,0
		T6A	19,0 (21,0)	15,5 (18,0)	-	- (62)	-	56,0
		T6B	14,0 (18,0)	10,5 (14,0)	- (20)	- (54)	-	57,0
6351	Estruturas e pesas usinadas	0	- (12,6)	- (5,6)	- (25)	-	-	-
		T4	19,0 (25,3)	11,9 (15,5)	18 (20)	- (60)	- (15,5)	- (9,5)
		T6	29,5 (32,3)	26,0 (30,2)	10 (13)	- (95)	- (20,5)	- (9,5)
6053	Rebites	T4	17,6 (21,1)	-	-	-	11,9	-
		T6	22,5 (24,6)	14,1	14	-	(70)	15,5 (18,3)
5056	Rebites e Solda	0	31,6 (29,5)	- (14,1)	10 (35)	- (65)	- (18,3)	- (14,1)
		H34	33,0 (35,2)	- (28,1)	- (20)	- (95)	- (20,4)	- (14,8)
		H38	38,7 (40,7)	- (33,7)	-	- (100)	- (22,5)	- (15,5)
5052	Estrutura (expostas ao ar marinho)	0	21,8 (20,4)	- (9,8)	25 (30)	- (45)	- (12,6)	- (11,2)
		H34	23,9 (26,0)	- (20,4)	- (14)	- (67)	- (14,7)	- (12,6)
		H38	27,4 (30,2)	- (26,7)	- (8)	- (80)	- (16,9)	- (14,1)
6061	Estruturas e Rebites	0	15,5 (14,1)	11,2 (8,4)	16 (24)	- (30)	- (8,5)	- (6,3)
		T4	18,3 (24,6)	11,2 (14,8)	16 (20)	- (65)	- (15,5)	- (9,8)
		T6	26,7 (31,0)	24,6 (28,2)	10 (16)	- (95)	- (19,0)	- (9,8)
		T9	35,1 (36,6)	- (33,0)	12 (18)	-	-	-
6261	Estruturas	T4	- (22,0)	- (13,0)	- (17)	- (70)	-	-
		T4A	- (19,0)	- (11,0)	- (17)	- (60)	-	-
		T6	28,0 (30,0)	25,4 (27,0)	10 (12)	- (95)	-	-
		T6C	23,4 (27,0)	20,3 (23,0)	7 (10)	- (85)	-	-

PROPRIEDADES MECÂNICAS

6261	Peças usinadas em torno automático	T3	-	(35,7)	-	(34,7)	-	(7)	-	(104)	-	-	-
		T4	-	(27,4)	-	(18,3)	-	(18)	-	(63)	-	-	-
		T6	-	(37,0)	-	(32,4)	-	(15)	-	(90)	-	-	-
		T8	-	(41,4)	-	(39,8)	-	(12)	-	(104)	-	-	-
7104	Estruturas	T4A	20,8	(23,4)	13,1	(16,1)	13	(16)	-	(70)	-	-	-

OBS.: (-) = Os valores entre parênteses são típicos, correspondem uma média de valores observados.
= Indica-se o valor máximo para garantir um completo recozimento.

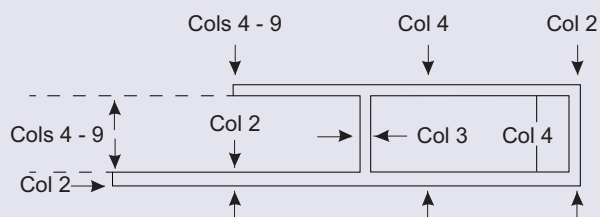
CARACTERÍSTICAS ESPECÍFICAS

Liga	Resistencia à corrosão	Anodização		Solda MIG	Solda TIG	Usinagem	Deformabilidade a frio	Brasagem	Outras
		Decorativa	Protetora						
1050	A	A	A	A	A	E	A	A	-
1100	A	A	A	A	A	E	A	A	-
1350	A	A	A	A	A	E	A	A	-
6005A	A	C	A	A	A	C	C	B	-
6060	A	A	A	A	A	D	B	A	-
6061	A	D	A	A	A	C	C	B	-
6063	A	A	A	A	A	D	B	A	-
6101	A	A	A	A	A	D	B	A	-
6261	A	C	A	A	A	C	C	B	-
6351	A	D	A	A	A	C	C	C	-
6463	A	A	A	A	A	D	B	A	-

Índices de "A até E" em ordem de mérito
N - Não apropriado

TOLERÂNCIA DE DIMENSÕES

Extrusão



- Para os produtos extrudados são adotadas as tolerâncias contidas na norma ABNT NBR 8116 - alumínio e suas ligas - que é baseada na ASTM (ANSI H35.2 - M);
- Dadas as necessidades de constante atualização da norma NBR 8116, devido aos avanços das indústrias produtoras de alumínio e as necessidades cada vez maiores das indústrias usuárias de perfis extrudados, os valores constantes desta tabela estão sujeitos a mudanças;
- Nesta página, apresentaremos apenas a tabela mais usual, sendo que informações complementares poderão ser obtidas com os **técnicos da Tecnoperfil**;
- A tabela apresenta as tolerância padronizadas;
- Quando nenhuma tolerância é mostrada, deve ser estabelecida de comum acordo entre o comprador e o fornecedor.

TOLERÂNCIA DE DIMENSÕES

Dimensão nominal (mm)	Tolerância na seção transversal do perfil							
	Dimensões do metal				Dimensões entre superfícies metálicas			
	Dimensão nominal onde 75% ou mais é metal (E) (F)				Desvio permitido da dimensão nominal quando mais de 25% da dimensão for vazio (G) (H)			
	Todas as dimensões exceto aquelas incluídas na coluna 3	Espessuras de parede, circundando um vazio de 70 mm ou mais (I) (J)	Nas dimensões medidas a uma distância "A" da base da aba					
5 a 15			15 a 30	30 a 60	60 a 100	100 a 150	150 a 200	
C oluna								
1	2	3	4	5	6	7	8	9
até 3,2	0,15	± 10% da espessura especificada Máximo: ± 1,50 Mínimo: ± 0,25	0,25	0,30	-	-	-	-
3,2 a 6,3	0,18		0,30	0,36	0,41	-	-	-
6,3 a 12,5	0,20		0,36	0,41	0,46	0,50	-	-
12,5 a 20	0,23		0,41	0,46	0,50	0,56	-	-
20 a 25	0,25		0,46	0,50	0,56	0,64	0,76	-
25 a 40	0,30		0,54	0,58	0,66	0,76	0,88	-
40 a 50	0,36		0,60	0,66	0,78	0,92	1,05	1,25
50 a 100	0,60		0,86	0,96	1,20	1,45	1,70	2,05
100 a 150	0,86		1,10	1,25	1,65	2,00	2,40	2,80
150 a 200	1,10		1,35	1,55	2,40	2,50	3,05	3,55
200 a 250	1,35	1,65	1,90	2,50	3,05	3,70	4,30	

• Vergalhões, barras e perfis extrudados. Tolerâncias na seção transversal em milímetros para mais ou para menos. Essas tolerâncias aplicam-se a perfis extrudados exceto na têmpera "O" (estado cozido) e "F" (como fabricado).

• **(A)** Estas tolerâncias-padrão aplicam-se a perfis comuns; podem ser necessárias tolerâncias mais amplas para alguns perfis e podem ser possíveis tolerâncias mais estreitas para outros, dependendo do acordo prévio entre o comprador e o fornecedor.

• **(B)** As tolerâncias para perfis extrudados nas ligas e têmperas especiais devem ser negociadas entre o comprador e o fornecedor.

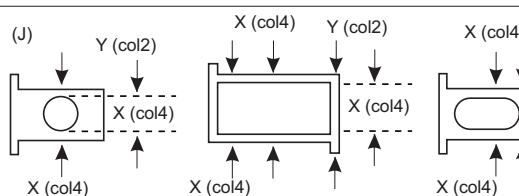
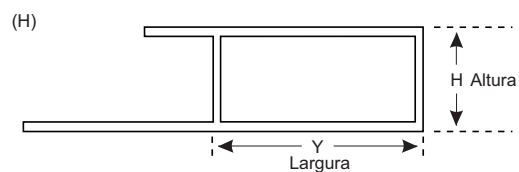
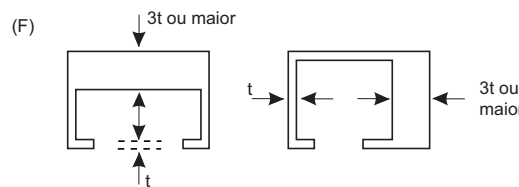
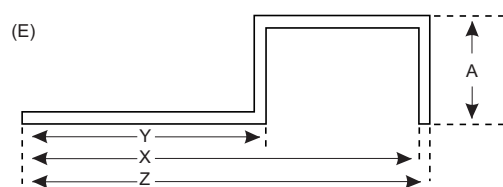
• **(C)** A tolerância aplicável a uma dimensão composta de dois ou mais componentes é a soma das tolerâncias das dimensões componentes, se todas elas forem indicadas.

• **(D)** Se uma tolerância dimensional especificada não for simétrica, então o valor da tolerância-padrão a ser aplicado é aquele que seria aplicado à média das dimensões máxima e mínima permitidas pela tolerância inicialmente especificada.

• **(E)** Estas tolerâncias não se aplicam a dimensões "X" e "Z" do exemplo, mesmo quando "Y" for 75% ou mais de "X". Para as tolerâncias aplicáveis às dimensões "X" e "Z" usar as colunas 4, 5, 6, 7, 8 e 9 dependendo da distância A.

• **(F)** A tolerância na espessura da parede dos perfis tubulares ou semitubulares deve ser combinada entre o comprador e o fornecedor, quando a espessura nominal de uma parede for três ou mais vezes maior que a parede oposta.

• **(G)** Nos pontos situados a 5 mm ou menos do início da aba, aplicam-se as tolerâncias da coluna 2.



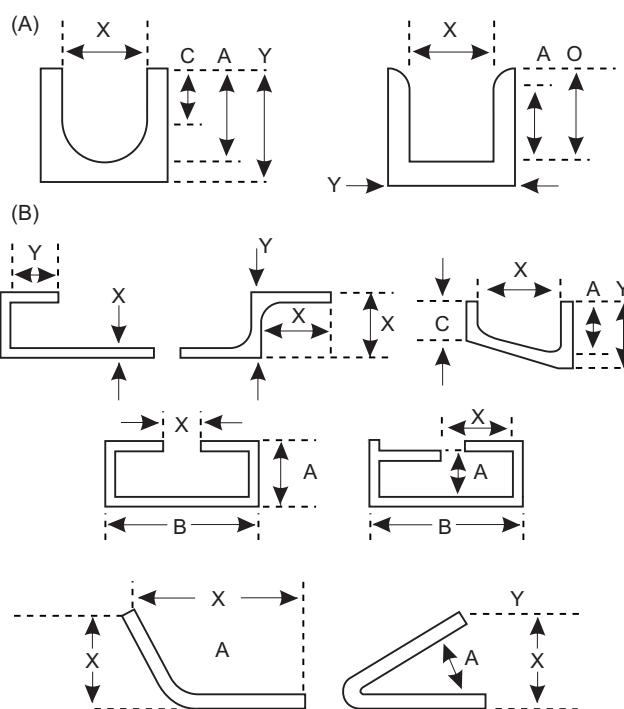
- **(H)** As seguintes tolerâncias são aplicadas no caso de perfis tubulares:
 - » Para a largura (L), a tolerância é a indicado na coluna 4 para a altura (H);
 - » Para a altura (H), a tolerância é a indicada na largura (L);
 - » Em nenhum caso pode a tolerância para a largura ou altura ser menor que a tolerância para os cantos (coluna 2, dimensões do metal).
 - » Exemplo de um perfil tubular tendo as dimensões externas retangulares de (25 x 75 mm):

» A tolerância na largura é 0,46 mm e a tolerância nos cantos (coluna 2, dimensões do metal) é 0,60 mm para a largura e 0,25 mm para a altura. Notar que a tolerância de 0,46 mm na coluna 4 deve ser ajustada a 0,60 mm para não ficar menor que a tolerância na coluna 2.

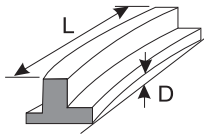
- **(I)** Quando as dimensões especificadas forem externas e internas. Ao invés da própria espessura da parede, o desvio permissível (excentricidade) indicado na coluna 3 se aplica à espessura média da parede.
- **(J)** No caso de perfis tubulares normais, aplica-se a tolerância-padrão para a espessura-padrão, para espessura da parede dos tubos redondos extrudados.

EXEMPLOS

- **(A)** Dimensões de vazios internos (perfis tubulares): todas as dimensões indicadas por "Y" são classificadas como "dimensões do metal" obedecendo às tolerâncias indicadas na coluna 2. Dimensões indicadas por "X" são classificadas como "dimensões incluindo vazios internos", sendo as tolerâncias aplicáveis determinadas pela coluna 4, a não ser que 75% ou mais da dimensão seja metal, caso este em que se aplica a coluna 2.
- **(B)** Dimensões dos vazios não totalmente circunscritos por metal. As tolerâncias aplicáveis à dimensão "X" podem ser enquadradas num dos três casos a seguir:
 - » Localizar a dimensão (X) na coluna 1;
 - » Determinar que coluna, de 4 a 9, é aplicável, dependendo da distância (A);
 - » Localizar a tolerância correta entre as colunas 4 e 9, na mesma linha que a dimensão (X);
 - » As dimensões (Y) correspondem às do metal e as tolerâncias são determinadas pela coluna 2;
 - » As distâncias (C) são mostradas somente para indicar dimensões incorretas, que não devem ser utilizadas para determinar que coluna, de 4 a 9, deve de aplicar;
 - » Localizar a distância (B) na coluna 1;
 - » Determinar que coluna, de 4 a 9, é aplicável dependendo da distância (A);
 - » Localizar a tolerância correta entre as colunas 4 e 9, na mesma linha do valor escolhida na coluna 1;
 - » As tolerâncias aplicáveis às dimensões (X) não são determinadas pela tabela e sim pelas tolerâncias-padrão aplicáveis aos ângulos (A).

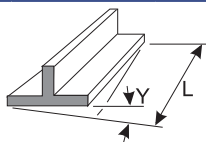


RETILINEARIDADE



Diâmetro do menor círculo circunscrito (mm) (1)	Espessura mínima (mm)	Desvio (D) permitido por metro de comprimento (mm) (2)
Até 38,09	Até 2,4	4,0
Até 38,09	Acima de 2,4	1,0
Acima de 38,10	Qualquer	1,0

TORÇÃO



Diâmetro do menor círculo circunscrito (mm) (1)	Desvio permitido (graus)		
	Por metro de comprimento	No comprimento total	Torção máxima
Até 38,09	3,3	3,3 x L (metros)	7%
De 38,09 à 76,19	1,6	1,6 x L (metros)	5%
Acima de 76,20	0,8	0,8 x L (metros)	3%

COMPRIENTO

Diâmetro do menor círculo circunscrito (mm) (1)	Desvio permitido em relação ao comprimento nominal (somente a mais) (mm)		
	Comprimento nominal		
	Até 3.660	3.661 a 9.150	9.151 a 15.250
Até 76,19	3,2	6,4	9,5
76,20 a 203,19	4,8	7,9	11,1
Acima de 203,20	6,4	9,5	12,7

ANGULARIDADE

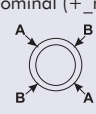
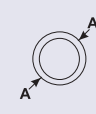
Espessura mínima da aba (mm) (3)	Desvio permitido em relação ao ângulo nominal (graus) (4)
Até 4,75	+ 2,0
de 4,76 a 19,04	+ 1,5
acima de 19,05	+ 1,0

Corte Final - Desvio permitido do quadro, aproximadamente de 1/8".

- Para vergalhões diâmetro nominal, para barras argura nominal;
- Para se obter o desvio permitido em barras de mais de 1 metro de comprimento multiplique-se o valor do comprimento em metros pelo valor do desvio por metro;
- Quando houver duas abas adjacentes considera-se a de menor espessura;
- Quando o espaço limitado pelo ângulo é todo metal, considera-se a menor espessura de metal no vértice do ângulo.

- a. Não é aplicado na têmpera 0, tubos em rolos cuja espessura de parede for inferior a 0,5 mm ou 2,5% do diâmetro externo ou diâmetro da circunferência equivalente (diâmetro do círculo cuja circunferência mede o perímetro do tubo);
- b. Exemplo: em um tubo retangular extrudado de 76,20x38,10mm, a tolerância na largura (76,20) é de 0,63 mm e na altura (38,10) é de 0,89 mm.

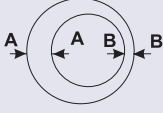
TOLERÂNCIAS DIMENSIONAIS DE DIÂMETRO EM TUBOS REDONDOS (ANSI - H35.2 - ABNT - NBR8116)

Diâmetro Nominal (mm)	Desvio permitido do diâmetro médio $\frac{AA + BB}{2}$ em relação diâmetro nominal (+_mm)	Desvio permitido do diâmetro em qualquer ponto em relação ao diâmetro nominal (+_mm)(1)		
			Ligas não tratáveis termicamente	Ligas tratáveis termicamente
Tubos extrudados				
6,35 a 25,39	0,25		0,51	
25,40 a 50,79	0,30		0,64	
50,80 a 101,59	0,38		0,76	
101,60 a 152,39	0,64		1,27	
152,40 a 203,19	0,89		1,90	
203,20 a 253,99	1,14		2,54	
Tubos trefilados				
Até 12,73	0,08	0,08	0,15	
12,74 a 25,40	0,10	0,10	0,20	
25,41 a 50,80	0,13	0,13	0,25	
50,81 a 76,20	0,15	0,15	0,30	
76,21 a 127,00	0,20	0,20	0,41	
127,01 a 152,40	0,25	0,25	0,51	
152,41 a 203,20	0,38	0,38	0,76	

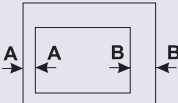
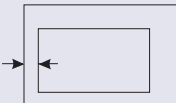
TOLERÂNCIAS DIMENSIONAIS DE ALTURA E LARGURA - TUBOS QUADRADOS, RETANG, SEXTAVADOS E OITAVADOS

Diâmetro Nominal (mm)	Desvio permitido da altura ou largura em relação à dimensão nominal (+_mm)			Tubos retangulares
	Nos cantos		Em lados opostos (a)	
	Tubos quadrados e retangulares	Tubos quadrados sextavados e oitavados		
Tubos extrudados				
12,70 a 19,05	0,30	0,51		A tolerância para a largura é o valor da tolerância para uma dimensão igual a altura e inversamente, mas em nenhum caso esta tolerância é menor do que nos cantos. (b)
19,06 a 25,40	0,36	0,51		
25,41 a 50,80	0,46	0,63		
50,81 a 101,60	0,63	0,89		
101,61 a 126,70	0,89	1,14		
126,71 a 152,40	1,14	1,40		
Tubos trefilados				
Até 12,70	0,08	0,15		A tolerância para a largura é o valor da tolerância para uma dimensão igual a altura e inversamente, mas em nenhum caso esta tolerância é menor do que nos cantos. (b)
12,71 a 25,40	0,10	0,20		
25,41 a 50,80	0,13	0,25		
50,81 a 76,20	0,15	0,30		
76,21 a 127,00	0,20	0,41		
127,01 a 152,40	0,25	0,51		
152,41 a 203,20	0,38	0,76		

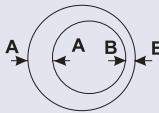
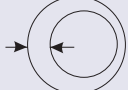
ESPESSURA DE PAREDE - TUBOS EXTRUDADOS TUBOS REDONDOS EXTRUDADOS

Espessura nominal da parede (mm)	Desvio permissível da espessura média $\frac{AA + BB}{2}$ em relação à espessura nominal (+_mm)				Desvio permissível da espessura em qualquer ponto em relação à espessura média (+_mm)
					
	Diâmetro Externo (mm)				
	Até 31,75	31,75 a 76,19	76,20 a 126,99	acima de 127,00	
Até 1,19	0,15	--	--	--	10% de espessura média da parede. Máximo: 1,52 Mínimo: 0,25
1,20 a 1,55	0,18	0,20	0,20	0,25	
1,56 a 1,95	0,20	0,20	0,23	0,30	
1,96 a 3,15	0,23	0,23	0,25	0,38	
3,16 a 6,34	0,23	0,23	0,33	0,51	
6,35 a 9,51	0,28	0,28	0,41	0,63	
9,52 a 12,69	--	0,38	0,53	0,89	
12,70 a 19,04	--	0,51	0,71	1,14	

TUBOS QUADRADOS, RETANGULARES, SEXTAVADOS E OITAVADOS - EXTRUDADOS

Espessura nominal da parede (mm)	Desvio permissível da espessura média AA+BB em relação à espessura normal (+_mm)		Desvio permissível da espessura em qualquer ponto em relação à espessura média (excentricidade)(+_mm)	
				
	DCC - Diâmetro do círculo circunscrito (mm)			
	menor que 127,0	maior que 127,0	menor que 127,0	maior que 127,0
Até 1,19	0,13	0,20	0,13	10% da espessura média da parede. Máximo: 1,52 Mínimo: 0,25
1,20 a 1,55	0,15	0,23	0,18	
1,56 a 1,95	0,18	0,25	0,25	
1,96 a 3,15	0,18	0,25	0,25	
3,16 a 6,34	0,20	0,38	0,36	
6,35 a 9,51	0,28	0,51	0,63	
9,52 a 12,69	0,36	0,76	0,76	
12,70 a 19,04	0,63	1,02	1,02	

ESPESSURA DE PAREDE TUBOS TREFILADOS

Espessura nominal da parede (mm)	Desvio permissível da espessura média AA+BB em relação à espessura normal (+_mm)		Desvio permissível da espessura em qualquer ponto em relação à nominal (+_mm)	
				
			Para tubos redondos em ligas não tratáveis termicamente	Para tubos redondos em ligas tratáveis termicamente e para outros tubos em qualquer liga (2)
0,25 a 0,89	0,05	0,05	10% da espessura nominal Mínimo 0,08	
0,90 a 1,24	0,08	0,08		
1,25 a 2,10	0,10	0,10		
2,11 a 3,05	0,13	0,15		
3,06 a 5,16	0,15	0,20		
5,17 a 7,62	0,20	0,30		
7,63 a 9,52	0,38	0,51		
9,53 a 12,70	0,51	0,76		

1. Para tubos em rolos deverão ser aplicados os valores para ligas tratáveis termicamente.
2. Para liga 50mm T8, a única tolerância de espessura de parede aplicável é o desvio permissível em qualquer ponto, e este é 15% da espessura especificada.

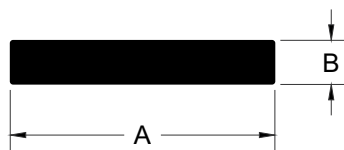
COMPRIMENTO - TUBOS TREFILADOS

Diâmetro Externo ou Largura nominal (mm)	Desvio permissível em relação ao comprimento nominal (somente a mais, mm)				
	Comprimento nominal (mm)			Roos	
	até 3.660	3.661 a 9.150	9.151 a 15.150	até 30 m	30 a 75 m
Até 6,34	6,4	9,5	12,7	5%	+_10%
6,35 a 31,74	3,2	6,4	9,5	5%	+_10%
31,75 a 76,19	3,2	6,4	9,5	--	--
76,20 a 203,20	4,8	7,9	11,1	--	--

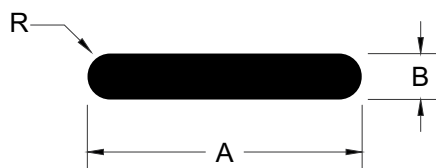
RETILINEARIDADE - TUBOS TREFILADOS

Diâmetro externo ou largura nominal (mm)	Desvio permissível por metro de comprimento (1) (2) (mm)
Abaixo de 9,52	38,75
9,53 a 152,39	0,78
152,40 e acima	1,55

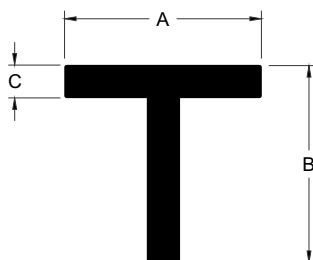
1. Não aplicável em têmperas 0.
2. Não aplicável para comprimentos abaixo de 3 metros.



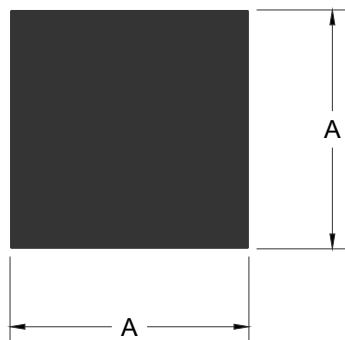
CÓDIGO	PESO	MILÍMETROS		POLEGADAS	
		A	B	A	B
BC-0002	0,108	12,70	3,17	1/2	1/8
BC-0008	0,136	15,87	3,18	5/8	1/8
BC-0009	0,204	15,87	4,76	5/8	3/16
BC-0015	0,163	19,05	3,18	3/4	1/8
BC-0016	0,245	19,05	4,76	3/4	3/16
BC-0018	0,491	19,05	9,52	3/4	3/8
BC-0025	0,218	25,40	3,18	1	1/8
BC-0027	0,436	25,40	6,35	1	1/4
BC-0037	0,409	31,75	4,76	1 1/4	3/16
BC-0050	0,328	38,10	3,18	1 1/2	1/8
BC-0063	1,310	50,80	9,52	2	3/8
BC-0158	2,177	50,80	15,88	2	5/8
BC-5006	3,252	60,00	20,00	-	-
BC-0068	0,819	63,50	4,76	2 1/2	3/16
BC-5003	3,904	131,00	11,00	-	-
BC-5005	5,284	150,00	13,00	-	-



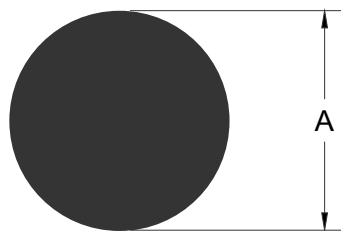
CÓDIGO	PESO	MILÍMETROS		POLEGADAS	
		A	B	A	B
BC-5009	0,304	20,00	6,00	-	-
BC-0502	0,324	25,00	5,00	-	-
BC-5010	0,385	25,00	6,00	-	-
BC-5002	0,172	27,00	2,40	-	-
BC-5011	0,596	38,00	6,00	-	-
BC-0505	0,631	38,10	6,35	1 1/2	1/4
BC-5012	0,629	40,00	6,00	-	-
BC-0634	0,792	50,00	6,00	-	-
BC-5013	1,043	62,00	6,35	-	1/4
BC-0644	1,035	65,00	6,00	-	-
BC-0643	1,117	70,00	6,00	-	-
BC-5008	0,580	70,50	3,05	-	-
BC-5014	1,285	76,00	6,35	-	1/4
BC-5015	1,247	78,00	6,00	-	-
BC-0642	1,279	80,00	6,00	-	-
BC-5016	1,442	90,00	6,00	-	-
BC-5017	1,562	92,00	6,35	-	1/4
BC-0641	1,605	100,00	6,00	-	-
BC-0916	2,571	101,60	9,53	4	3/8
BC-5018	1,767	110,00	6,00	-	-
BC-5019	2,024	119,00	6,35	-	1/4
BC-5020	0,970	120,00	3,00	-	-
BC-5021	1,930	120,00	6,00	-	-
BC-5022	3,193	120,00	10,00	-	-
BC-5023	2,011	125,00	6,00	-	-
BC-5024	2,672	125,00	8,00	-	-
BC-0624	2,145	127,00	6,30	5	1/4
BC-0640	2,092	130,00	6,00	-	-
BC-5025	2,418	150,00	6,00	-	-
BC-5026	2,572	152,00	6,30	-	1/4
BC-5027	2,509	154,00	6,35	-	1/4
BC-5007	3,394	210,00	6,00	-	-



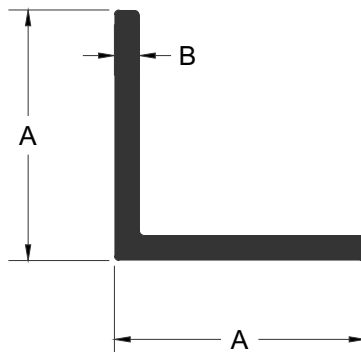
CÓDIGO	PESO	MILÍMETROS			POLEGADAS		
		A	B	C	A	B	C
PT-0008	0,161	25,40	25,40	1,20	1	1	-
PT-2001	0,646	38,10	60,00	2,50	1 1/2	-	-
PT-2003	1,002	100	70	2,5	-	-	-



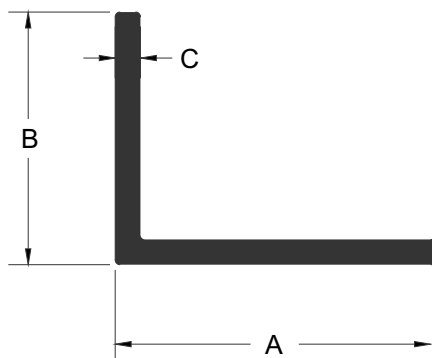
CÓDIGO	PESO	MILÍMETROS	POLEGADAS
		A	A
VQ-0001	0,109	6,35	1/4
VQ-0003	0,245	9,52	3/8
VQ-0009	1,748	25,4	1
VQ-0014	5,354	44,45	1 3/4



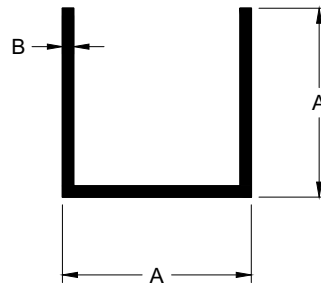
CÓDIGO	PESO	MILÍMETROS	POLEGADAS
		A	A
VR-0002	0,085	6,35	1/4
VR-0003	0,108	7,14	9/32
VR-0004	0,134	7,94	5/16
VR-0063	0,536	15,87	5/8
VR-0018	1,050	22,22	7/8
VR-0020	1,373	25,40	1
VR-0057	4,387	45,50	-
VR-0029	5,493	50,80	2
VR-0091	6,437	55,00	-



CÓDIGO	PESO	MILÍMETROS		POLEGADAS	
		A	B	A	B
CT-2001	0,084	12,70	1,30	1/2	-
CT-0005	0,129	15,88	1,59	5/8	1/16
CT-1901	0,100	19,05	1,00	3/4	-
CT-0007	0,157	19,05	1,59	3/4	1/16
CT-2013	0,145	25,00	1,10	-	-
CT-0016	0,211	25,40	1,59	1	1/16
CT-0019	0,410	25,40	3,18	1	1/8
CT-0022	0,519	31,75	3,18	1 1/4	1/8
CT-0047	0,317	38,10	1,57	1 1/2	1/16
CT-0026	0,627	38,10	3,17	1 1/2	1/8
CT-0032	0,847	50,80	3,18	2	1/8
CT-0033	1,250	50,80	4,76	2	3/16



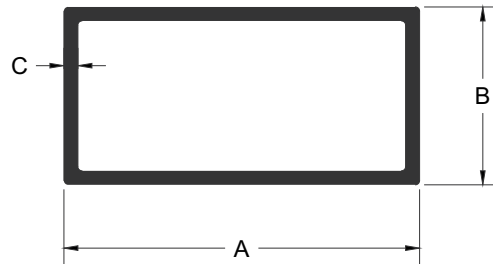
CÓDIGO	PESO	MILÍMETROS			POLEGADAS		
		A	B	C	A	B	C
CT-2002	0,122	40,00	6,00	1,00	-	-	-
CT-0218	0,436	50,80	31,75	2,00	2	1 1/4	-
CT-2009	2,360	76,20	25,00	9,50	3	1	-
CT-2010	3,984	99,00	34,00	10,00	-	-	-
CT-2011	3,188	100,00	34,00	9,50	-	-	-
CT-2008	1,932	190,00	50,00	3,00	-	-	-



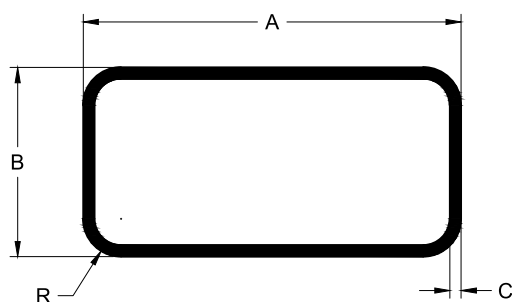
CÓDIGO	PESO	MILÍMETROS		POLEGADAS	
		A	B	A	B
PU-0038	0,084	9,50	1,20	-	-
PU-0001	0,109	9,53	1,59	3/8	1/16
PU-0002	0,150	12,70	1,59	1/2	1/16
PU-0004	0,191	15,87	1,59	5/8	1/16



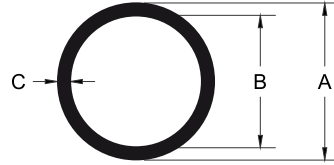
CÓDIGO	PESO	MILÍMETROS			POLEGADAS		
		A	B	C	A	B	C
PU-0501	0,130	10,70	20,00	1,00	-	-	-
PU-0041	0,172	11,00	22,00	1,34	-	-	-
PU-0502	0,139	14,00	20,00	1,00	-	-	-
PU-0042	0,166	14,00	22,00	1,20	-	-	-
PU-0062	0,195	15,00	25,00	1,15	-	-	-
PU-0329	0,220	15,20	25,40	1,30	-	1	-
PU-0503	0,241	17,25	15,00	2,00	-	-	-
PU-0504	0,313	22,00	20,00	2,00	-	-	-
PU-0505	0,349	26,00	20,00	2,00	-	-	-
PU-0639	0,390	29,00	35,00	1,50	-	-	-
PU-0506	0,294	33,00	30,00	1,20	-	-	-
PU-0507	0,384	33,00	40,00	1,50	-	-	-
PU-0508	0,287	38,00	26,50	1,20	-	-	-
PU-0065	0,325	75,00	25,00	1,00	-	-	-



CÓDIGO	PESO	MILÍMETROS			POLEGADAS		
		A	B	C	A	B	C
TG-0074	0,195	25,40	12,70	1,00	1	1/2	-
TG-2003	0,392	50,40	12,40	1,20	-	-	-
TG-2004	0,397	50,80	12,70	1,20	2	1/2	-
TG-0073	0,402	50,80	25,40	1,00	2	1	-
TG-0071	0,479	50,80	25,40	1,20	2	1	-
TG-0005	0,595	50,80	25,40	1,50	2	1	-
TG-0007	0,783	50,80	25,40	2,00	2	1	-
TG-2008	0,734	50,80	38,10	1,58	2	1	1/16
TG-2006	0,602	70,00	25,00	1,20	-	-	-
TG-0072	0,904	76,20	38,10	1,50	3	1 1/2	-
TG-2005	1,236	95,00	50,80	1,60	-	2	1/16
TG-4216	1,294	101,60	50,80	1,60	4	2	1/16
TG-7403	1,608	101,60	50,80	2,00	4	2	-
TG-0085	2,419	101,60	50,80	3,05	4	2	-
TG-2009	1,885	127,00	50,80	2,00	5	2	-
TG-0082	3,206	152,40	50,80	3,00	6	2	-
TG-2007	5,105	180,00	63,50	4,00	-	2 1/2	-

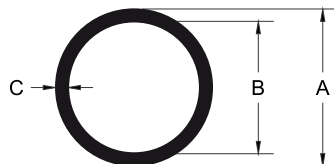


CÓDIGO	PESO	MILÍMETROS				POLEGADAS			
		A	B	C	R	A	B	C	R
TG-0505	0,265	30,00	22,50	1,10	5,00	-	-	-	-
TG-0510	0,292	40,00	22,50	0,95	5,00	-	-	-	-
TG-0502	0,307	40,00	22,50	1,00	5,00	-	-	-	-
TG-0506	0,343	40,00	22,50	1,10	5,00	-	-	-	-

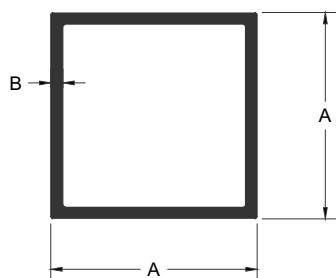


CÓDIGO	PESO	MILÍMETROS			POLEGADAS	
		A	B	C	A	C
TR-2187	0,086	8,00	4,84	1,58	-	1/16
TR-3208	0,068	8,10	5,80	1,15	-	-
TR-2186	0,072	9,53	7,53	1,00	3/8	-
TR-0002	0,107	9,53	6,35	1,59	3/8	1/16
TR-1015	0,099	12,70	10,70	1,00	1/2	-
TR-0005	0,151	12,70	9,52	1,59	1/2	1/16
TR-1049	0,159	15,20	12,50	1,35	-	-
TR-0011	0,126	15,88	13,88	1,00	5/8	-
TR-0014	0,193	15,88	12,70	1,59	5/8	1/16
TR-0250	0,343	15,88	9,52	3,18	5/8	1/8
TR-1062	0,204	17,50	14,50	1,50	-	-
TR-0018	0,153	19,00	17,00	1,00	-	-
TR-2176	0,725	19,00	4,50	7,25	-	-
TR-0019	0,182	19,05	16,65	1,20	3/4	-
TR-0020	0,235	19,05	15,87	1,59	3/4	1/16
TR-0249	0,340	19,05	14,25	2,40	3/4	-
TR-2184	0,162	20,00	18,00	1,00	-	-
TR-2196	0,629	20,00	15,10	2,45	-	-
TR-0032	0,182	22,22	20,22	1,00	7/8	-
TR-0952	0,220	22,22	19,74	1,24	7/8	-
TR-0035	0,277	22,22	19,06	1,58	7/8	1/16
TR-0036	0,341	22,22	18,26	1,98	7/8	5/64
TR-0034	0,515	22,22	15,86	3,18	7/8	1/8
TR-2197	0,914	24,00	12,10	5,95	-	-
TR-2200	0,973	24,00	10,90	6,55	-	-
TR-2198	0,991	24,00	10,50	6,75	-	-
TR-2175	0,243	25,00	22,60	1,20	-	-

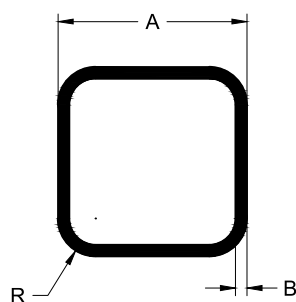
CÓDIGO	PESO	MILÍMETROS			POLEGADAS	
		A	B	C	A	C
TR-2199	0,391	25,00	21,00	2,00	-	-
TR-1140	0,561	25,00	19,00	3,00	-	-
TR-2189	0,953	25,00	13,30	5,85	-	-
TR-0039	0,207	25,40	23,40	1,00	1	-
TR-2185	0,246	25,40	23,00	1,20	1	-
TR-0040	0,322	25,40	22,22	1,59	1	1/16
TR-0041	0,397	25,40	21,40	2,00	1	-
TR-0043	0,599	25,40	19,06	3,17	1	1/8
TR-2190	0,328	26,00	22,84	1,58	-	1/16
TR-2170	0,401	26,70	22,90	1,90	-	-
TR-2191	1,103	28,00	16,30	5,85	-	-
TR-0047	0,363	28,57	25,41	1,58	1 1/8	1/16
TR-2192	1,210	29,00	16,50	6,25	-	-
TR-0866	0,261	31,75	29,75	1,00	1 1/4	-
TR-0202	0,388	31,75	28,75	1,50	1 1/4	-
TR-0301	0,411	31,80	28,60	1,60	-	-
TR-1104	0,601	31,80	27,00	2,40	-	-
TR-2188	0,776	33,40	27,40	3,00	-	-
TR-2193	1,849	32,00	12,26	9,87	-	-
TR-0342	0,467	38,10	35,10	1,50	1 1/2	-
TR-0072	0,726	38,10	33,30	2,40	1 1/2	-
TR-0073	0,945	38,10	31,74	3,18	1 1/2	1/8
TR-2171	1,287	38,10	29,10	4,50	1 1/2	-
TR-0844	1,444	42,20	33,20	4,50	-	-
TR-2172	0,576	44,45	41,29	1,58	1 3/4	1/16
TR-1280	1,157	48,30	42,30	3,00	-	-
TR-0196	0,423	50,80	48,80	1,00	2	-
TR-0098	0,670	50,80	47,60	1,60	2	-
TR-0099	0,830	50,80	46,80	2,00	2	-
TR-0100	1,282	50,80	44,45	3,18	2	1/8
TR-0921	1,593	50,80	42,80	4,00	2	-
TR-2173	1,809	59,50	51,50	4,00	-	-
TR-2194	1,455	60,00	54,00	3,00	-	-
TR-0310	1,540	63,50	57,50	3,00	2 1/2	-
TR-0131	1,228	74,00	70,00	2,00	-	-
TR-0311	1,047	76,20	72,90	1,65	3	-
TR-2177	2,163	83,34	77,00	3,17	-	1/8
TR-2195	1,525	86,80	82,80	2,00	-	1
TR-2169	2,193	88,90	82,90	3,00	3 1/2	1
TR-0868	1,081	101,60	99,06	1,27	4	1
TR-0161	1,362	101,60	98,40	1,60	4	1
TR-0162	2,191	101,60	96,40	2,60	4	1
TR-1007	2,830	114,30	108,30	3,00	4 1/2	1
TR-1144	5,486	165,10	157,10	4,00	6 1/2	1



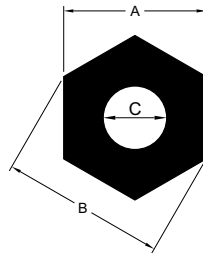
CÓDIGO	PESO	MILÍMETROS			POLEGADAS	
		A	B	C	A	C
TR-0868	1,081	101,60	99,06	1,27	4	-
TI-0008	1,672	152,40	149,80	1,30	6	-
TI-0311	3,256	203,20	199,40	1,90	8	-



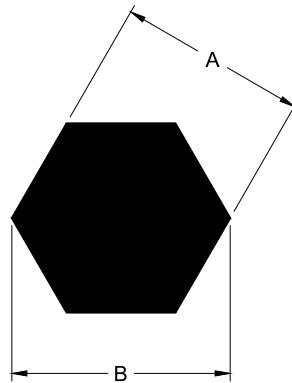
CÓDIGO	PESO	MILÍMETROS		POLEGADAS	
		A	B	A	B
TQ-0005	0,232	19,05	1,20	3/4	-
TQ-0055	0,285	19,05	1,50	3/4	-
TQ-2001	0,270	22,00	1,20	-	-
TQ-0023	0,264	25,40	1,00	1	-
TQ-0058	0,388	25,40	1,50	1	-
TQ-0014	0,595	38,10	1,50	1 1/2	-
TQ-2015	0,801	50,80	1,50	2	-
TQ-0017	1,047	50,80	1,98	2	-
TQ-2002	0,968	70,00	1,30	-	-
TQ-4018	1,947	101,60	1,80	4	-
TQ-0034	2,685	101,60	2,50	4	-



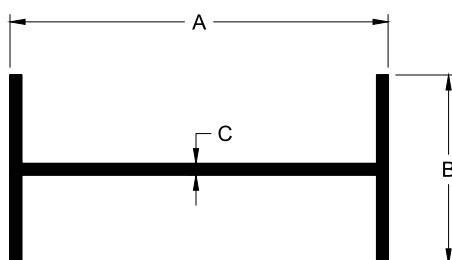
CÓDIGO	PESO	MILÍMETROS			POLEGADAS		
		A	B	R	A	B	R
TQ-2005	0,856	32,50	2,75	5,00	-	-	-
TQ-2006	1,602	50,00	3,20	3,00	-	-	-
TQ-0155	1,959	50,00	4,00	4,00	-	-	-



CÓDIGO	PESO	MILÍMETROS			POLEGADAS		
		A	B	R	A	B	R
TP-7116	0,323	12,70	14,66	5,10	1/2	-	-
TP-7117	0,282	12,70	14,66	6,70	1/2	-	-

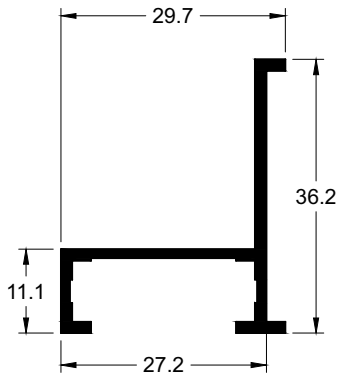


CÓDIGO	PESO	MILÍMETROS		POLEGADAS	
		A	B	A	B
VS-0007	0,852	19,05	22,00	3/4	-
VS-0011	1,517	25,4	29,24	1	-
VS-0014	2,364	31,75	36,65	1 1/4	-

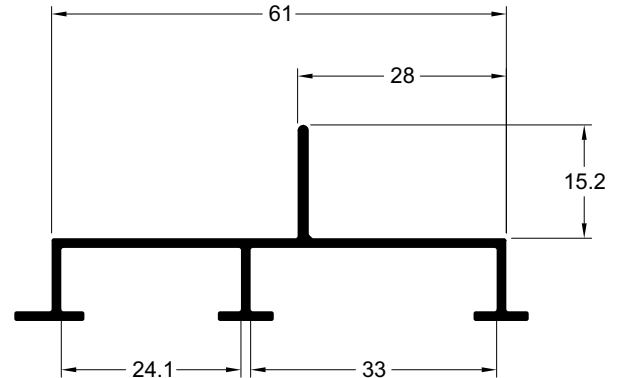


CÓDIGO	PESO	MILÍMETROS			POLEGADAS		
		A	B	C	A	B	C
TPI-205	2,887	80,00	60,00	5,00	-	-	-

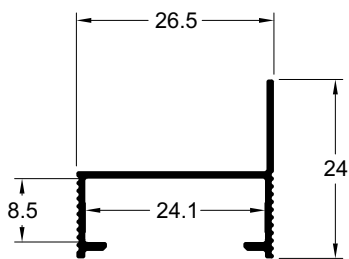
TCM-083
0.310 Kg/m



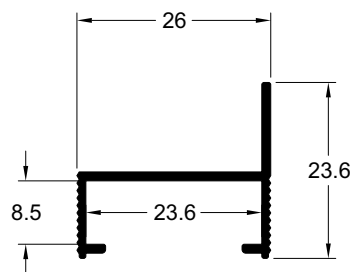
TCM-126
0.451 Kg/m



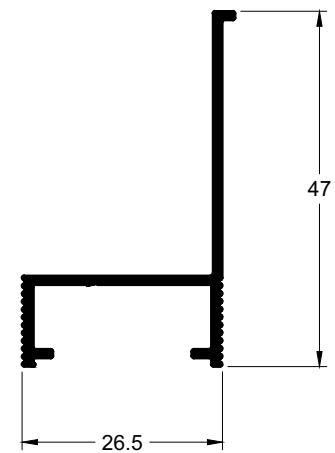
TCM-063
0.220 Kg/m



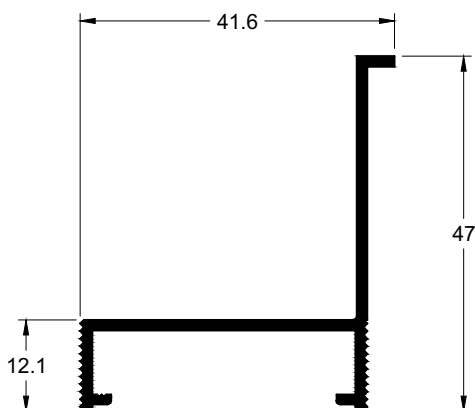
TCM-200
0.198 Kg/m



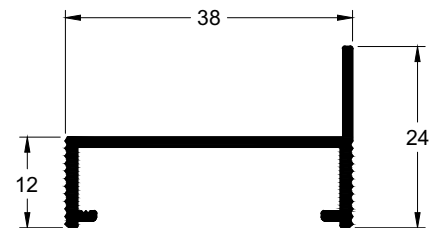
TCM-151
0.309 Kg/m



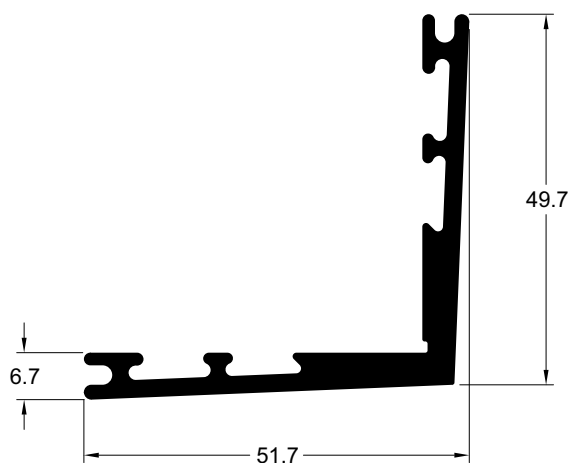
TCM-098
0.383 Kg/m



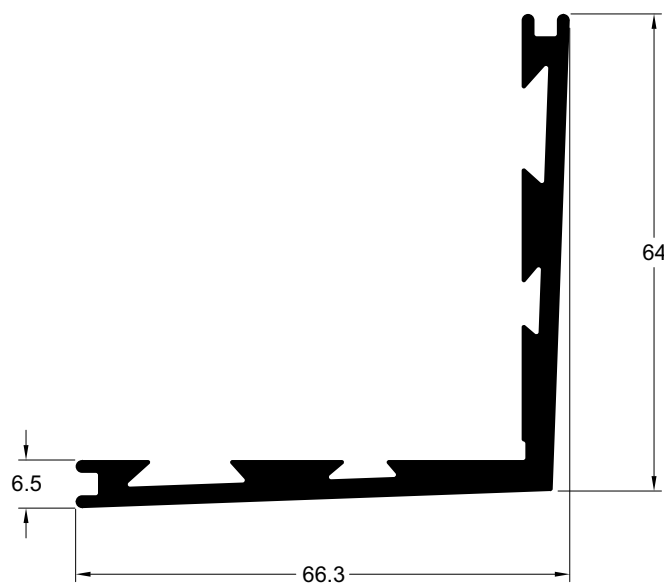
TCM-060
0.275 Kg/m



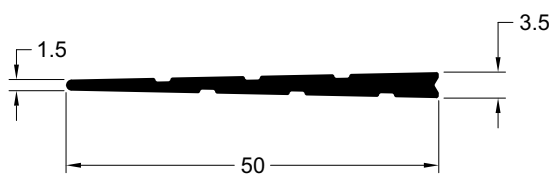
TCL-006
1.001 Kg/m



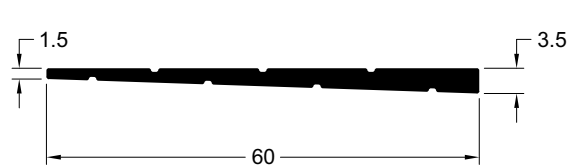
TCL-009
1.411 Kg/m



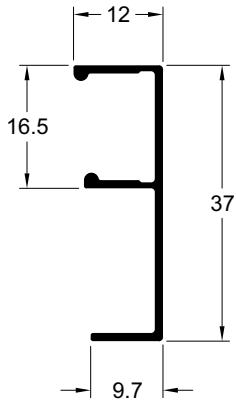
TCL-011
0.318 Kg/m



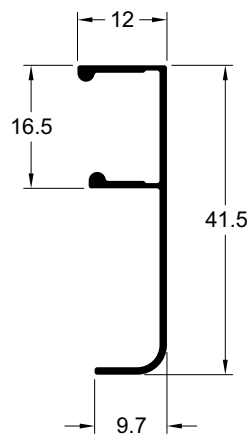
TCL-010
0.396 Kg/m



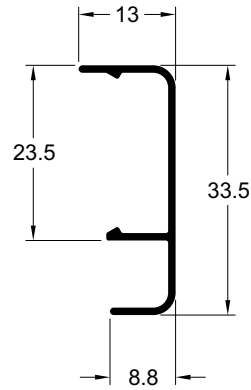
TMP-347
0.202 Kg/m



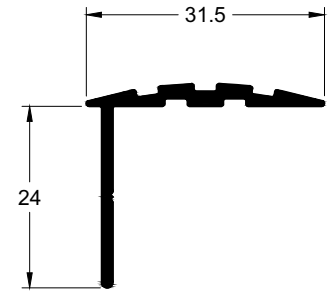
TMN-014
0.196 Kg/m



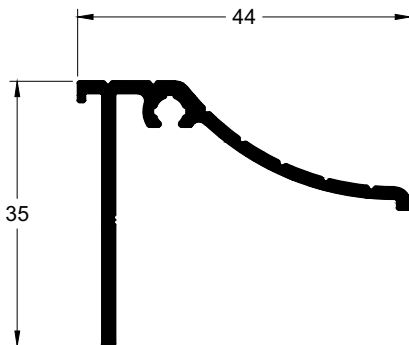
TCM-130
0.166 Kg/m



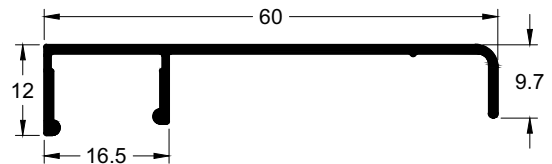
TCM-029A
0.242 Kg/m



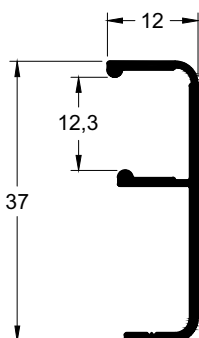
TCM-169
0.411 Kg/m



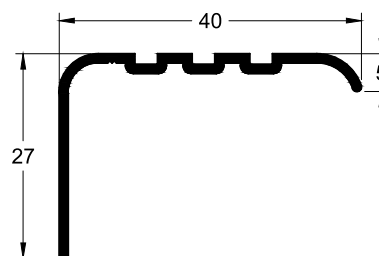
RM-0001
0.288 Kg/m



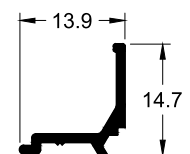
RM-0002
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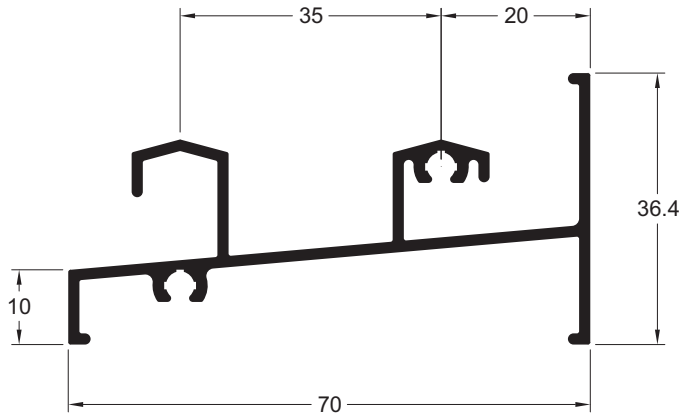
TME-013
0.236 Kg/m



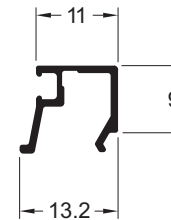
TME-114
0.090 Kg/m



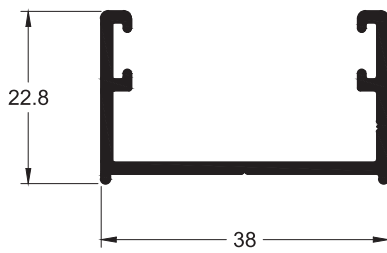
T25-516
0.793 Kg/m



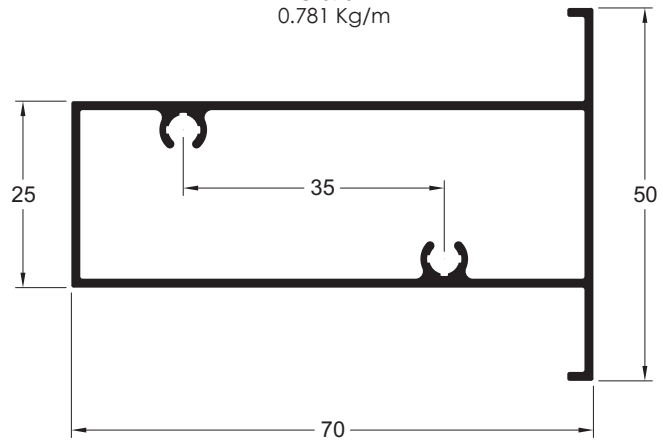
TBG-001
0.102 Kg/m



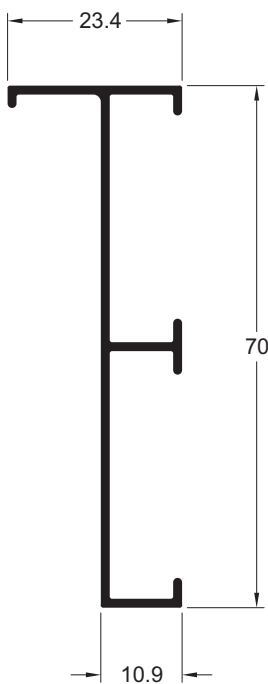
TME - 024
0.375 Kg/m



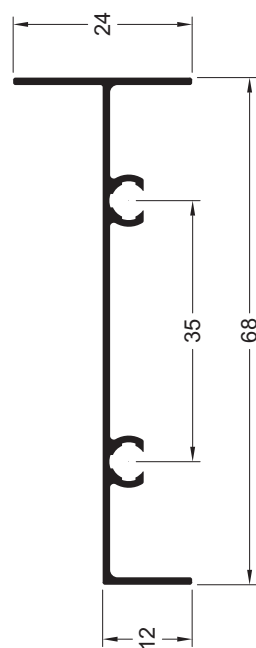
TFC-070
0.781 Kg/m



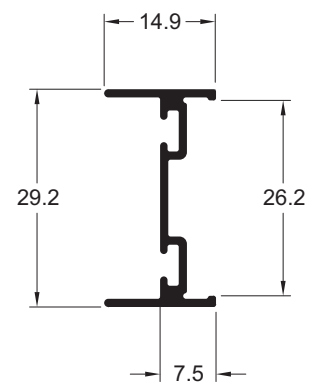
T25-514
0.406 Kg/m



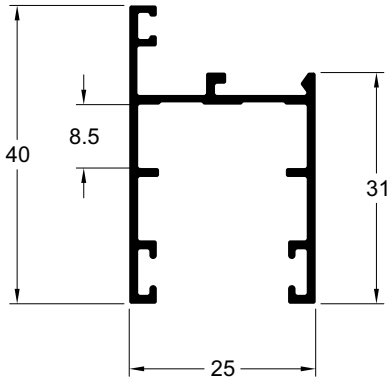
45-157B
0.340 Kg/m



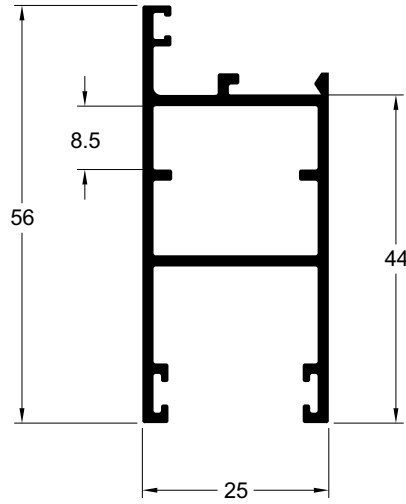
T25-021
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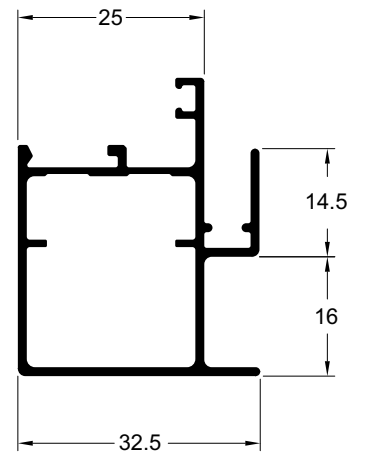
T25-011
0.398 Kg/m



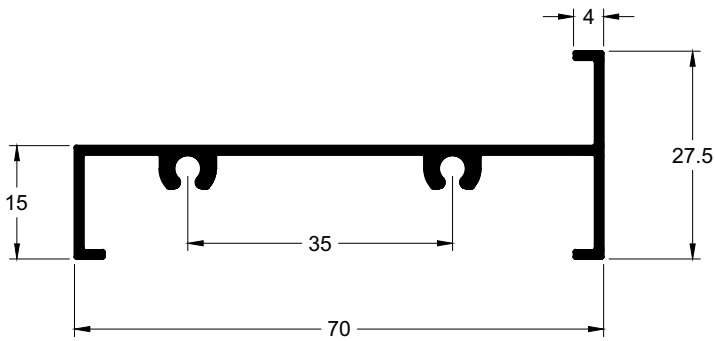
T25-502
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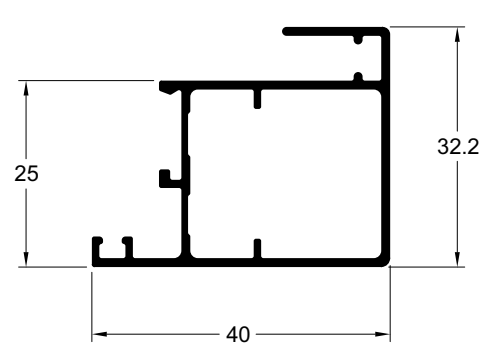
T25-015
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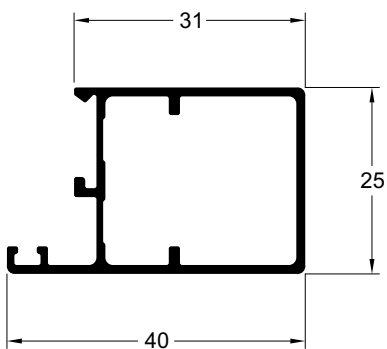
T25-517
0.493 Kg/m



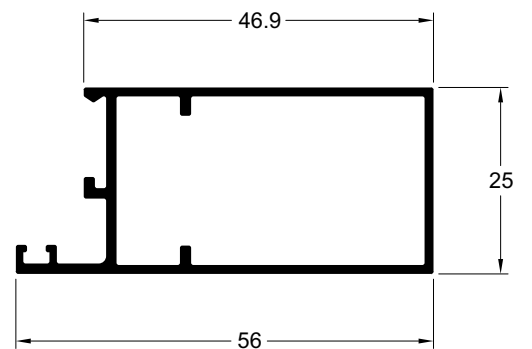
T25-014
0.493 Kg/m



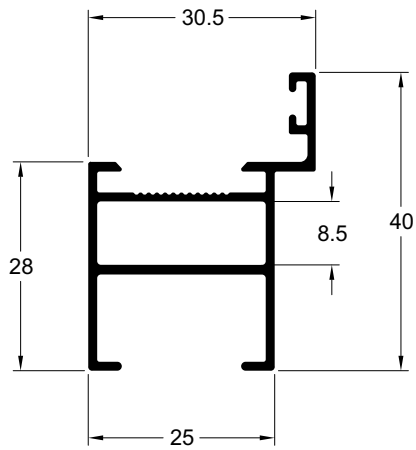
T25-016
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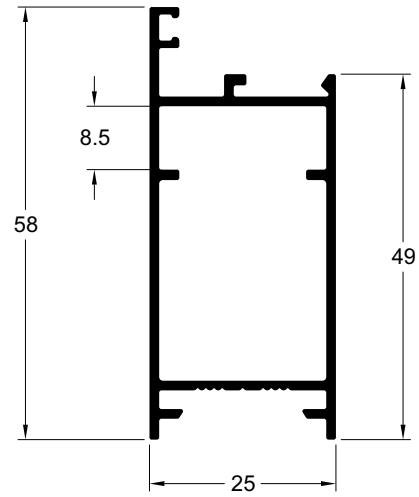
T25-504
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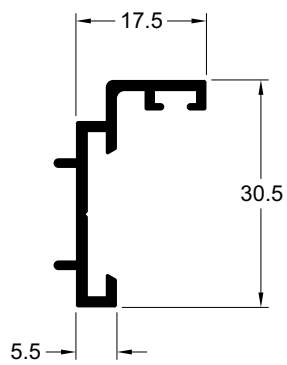
T25-540
0.453 Kg/m



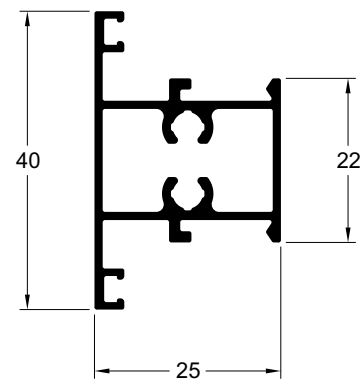
T25-542
0.609 Kg/m



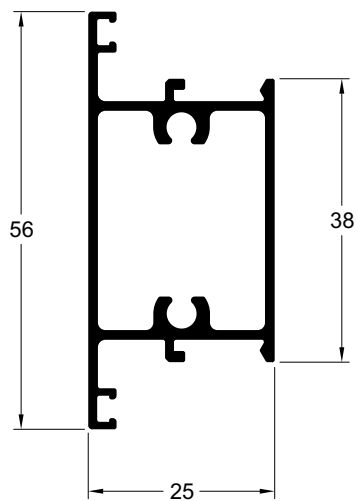
T25-548
0.278 Kg/m



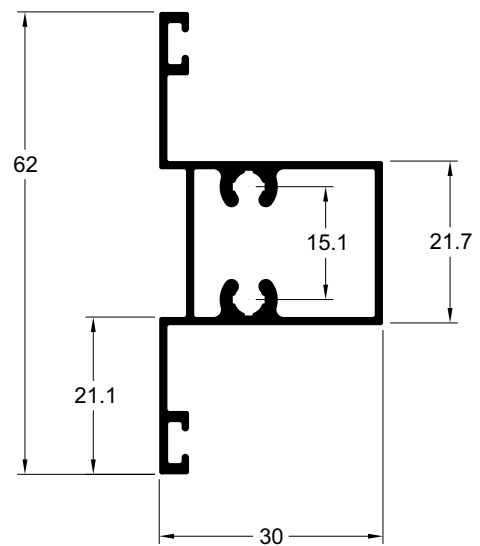
T25-026
0.494 Kg/m



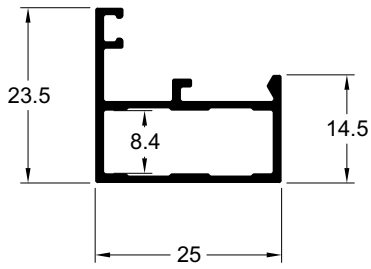
T25-508
0.665 Kg/m



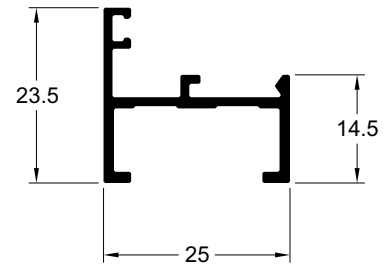
T25-669
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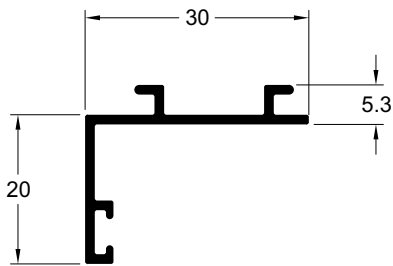
T25-001
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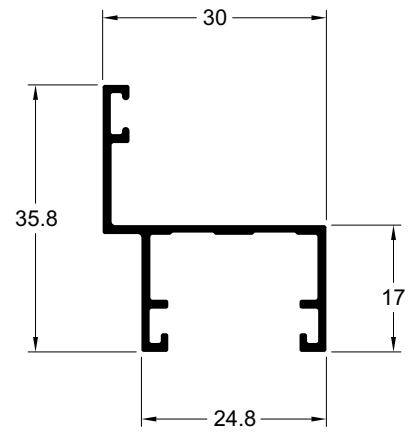
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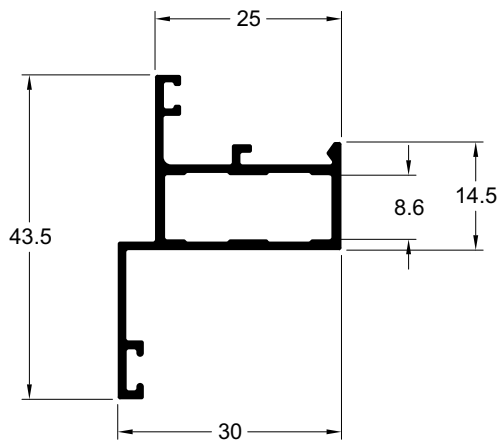
T25-020
0.241 Kg/m



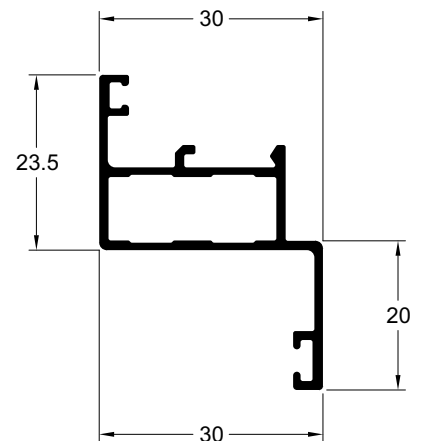
T25-002
0.313 Kg/m

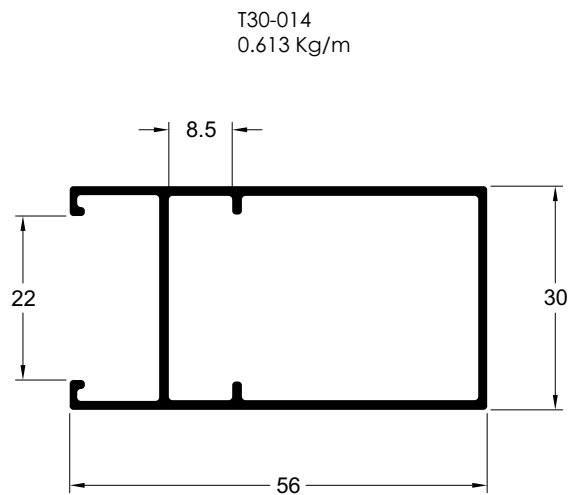
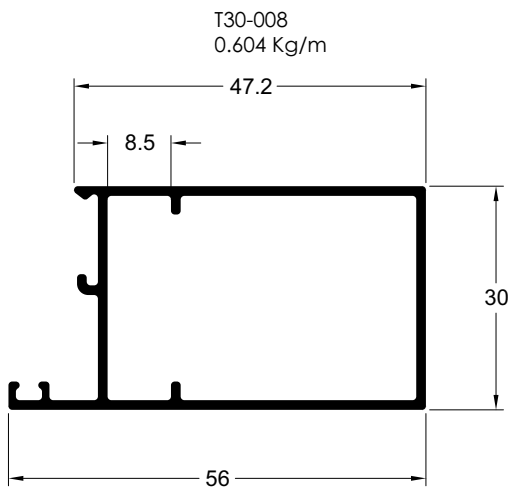
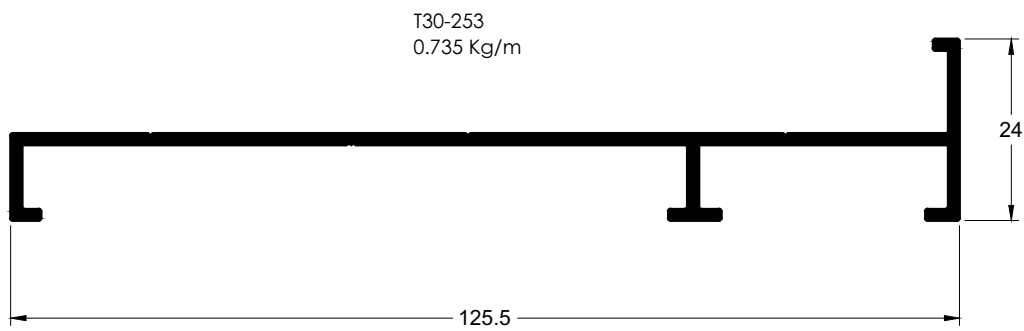
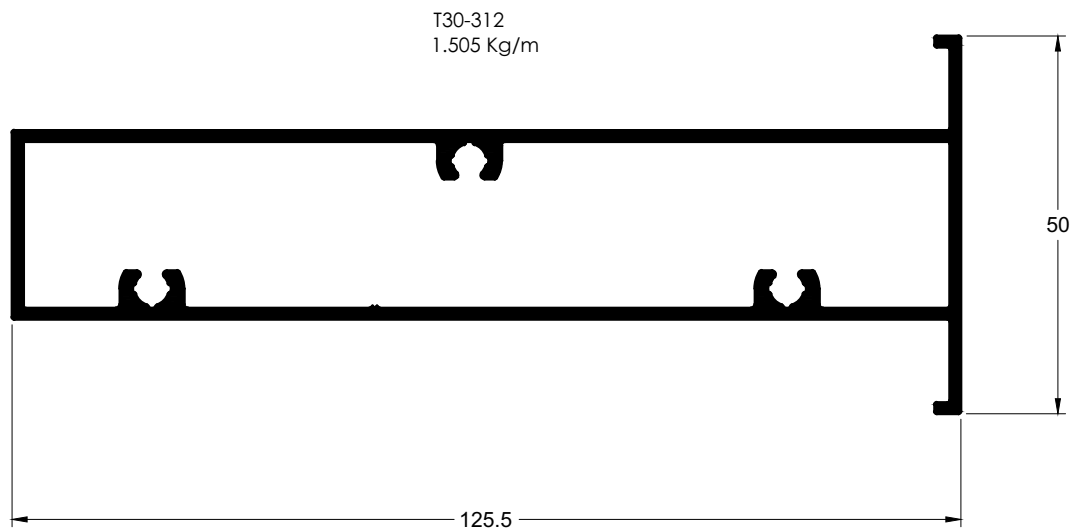
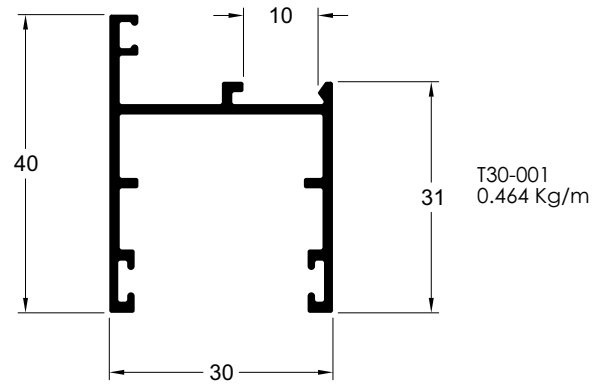
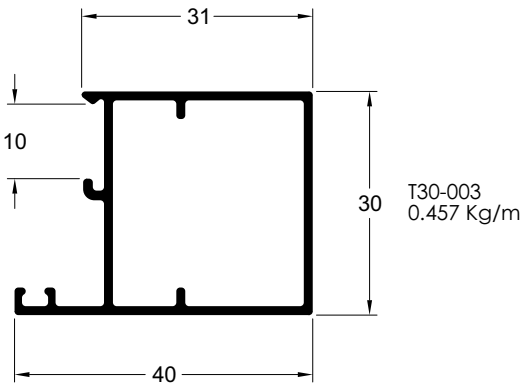


T25-005
0.419 Kg/m

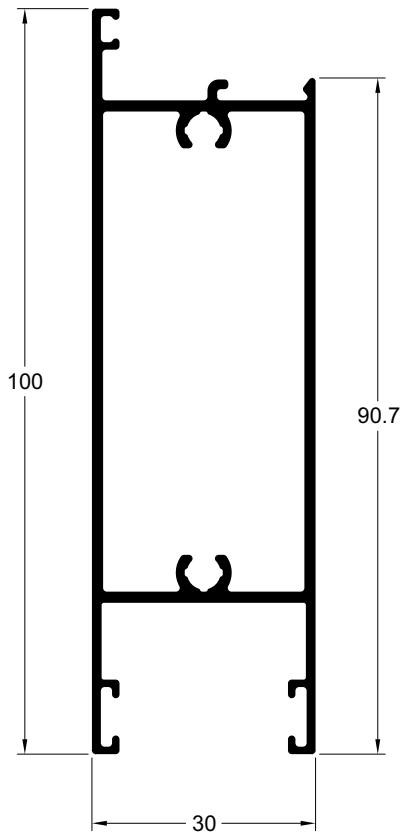


T25-018
0.405 Kg/m

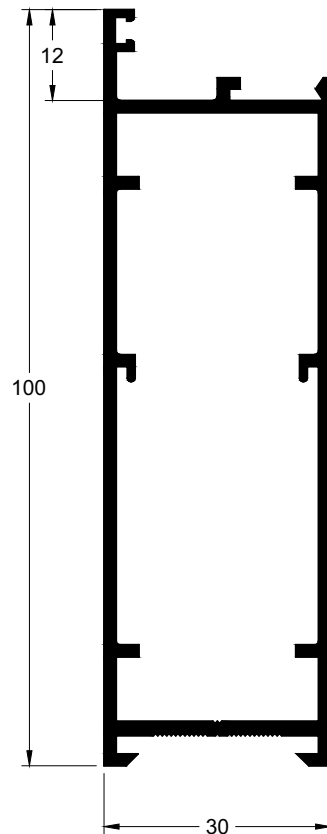




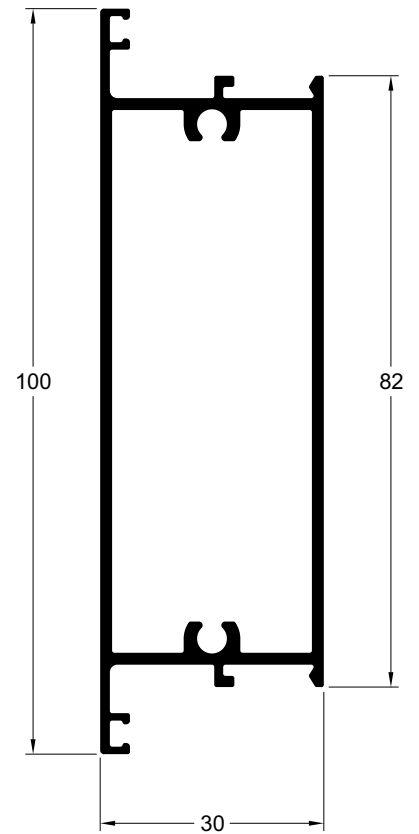
T30-028
1.122 Kg/m



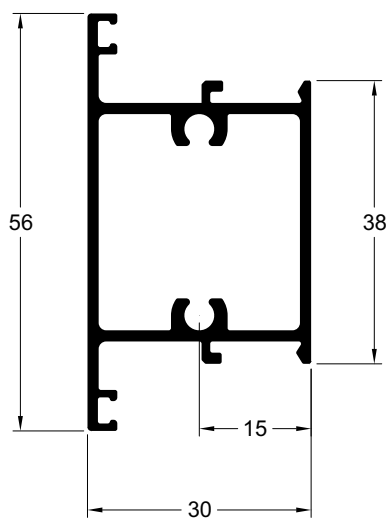
T30-082
1.211 Kg/m



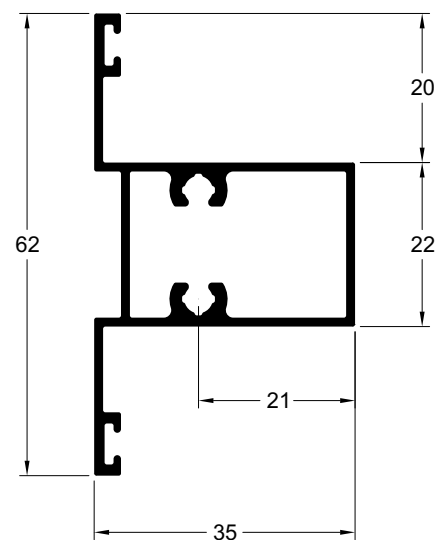
T30-030
1.161 Kg/m



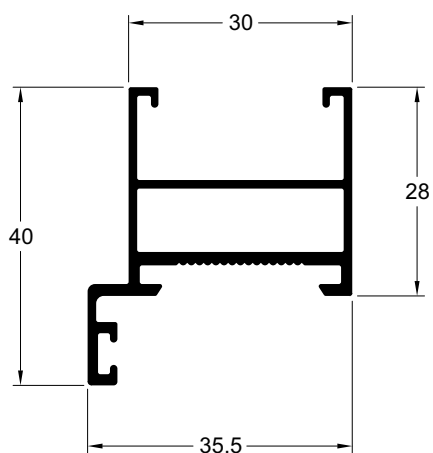
T30-025
0.763 Kg/m



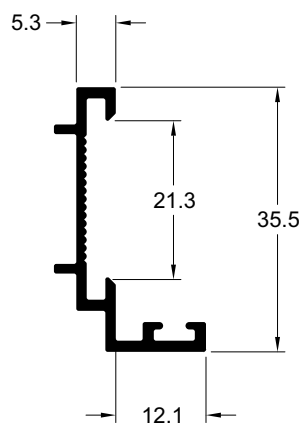
T30-235
0.661 Kg/m



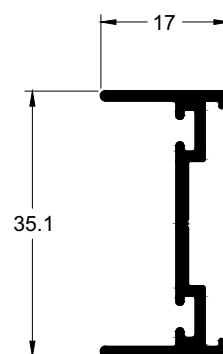
T30-023
0.541 Kg/m



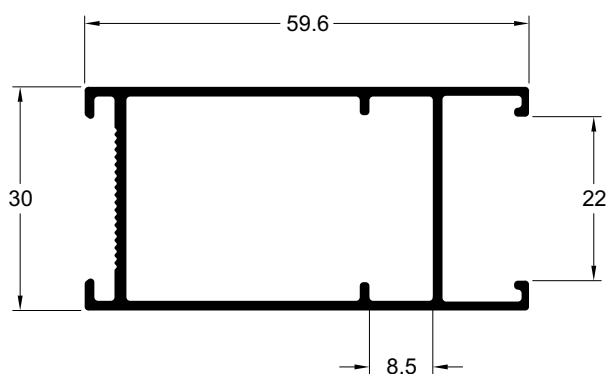
T30-034
0.277 Kg/m



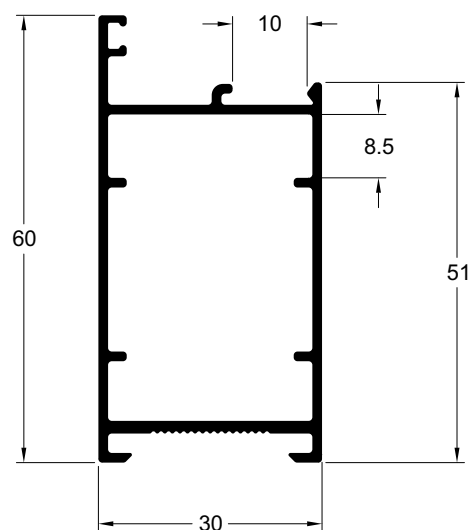
T30-019
0.300 Kg/m



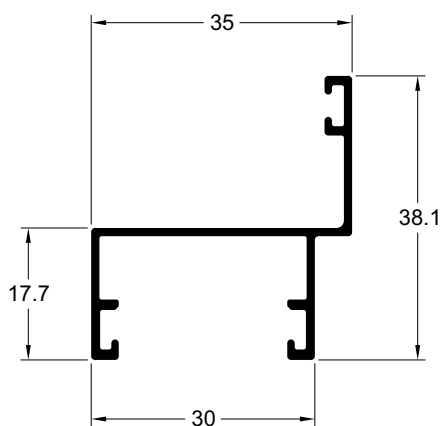
T30-077
0.680 Kg/m



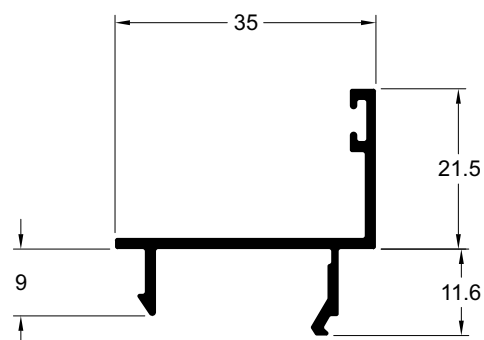
T30-026
0.694 Kg/m



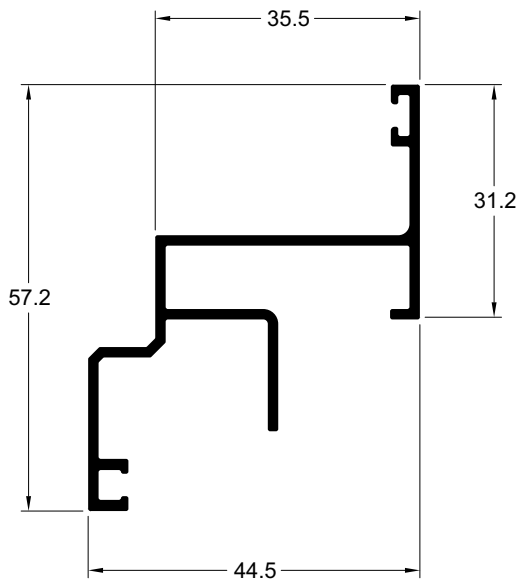
T30-054
0.336 Kg/m



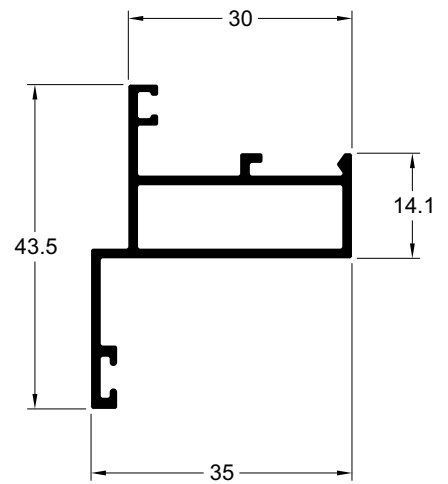
T30-056
0.332 Kg/m



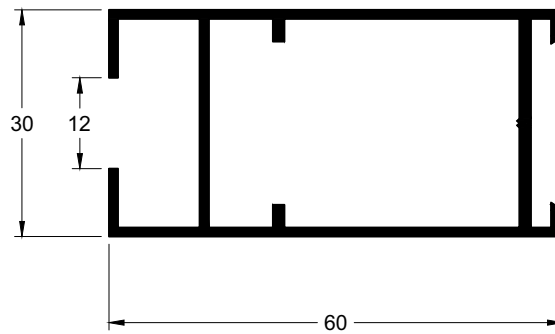
T30-048
0.595 Kg/m



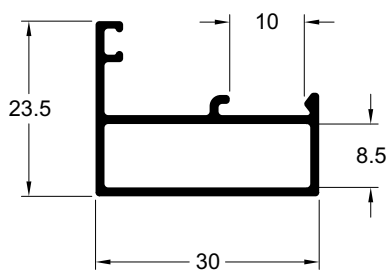
T30-049
0.473 Kg/m



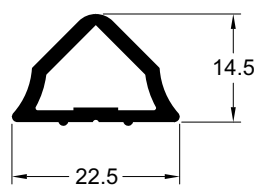
T30-077A
0.389 Kg/m



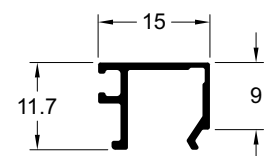
T30-051
0.332 Kg/m



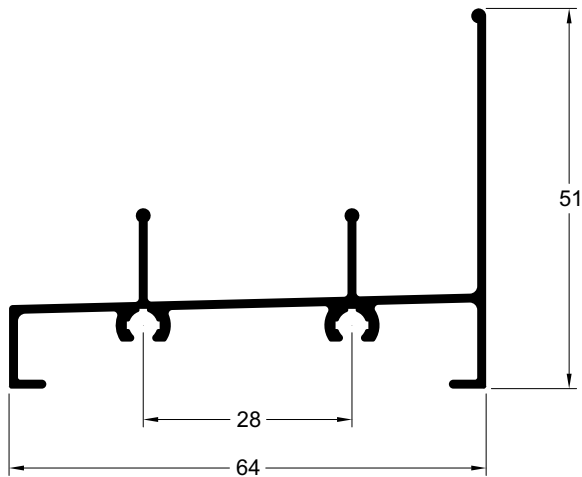
T30-044
0.275 Kg/m



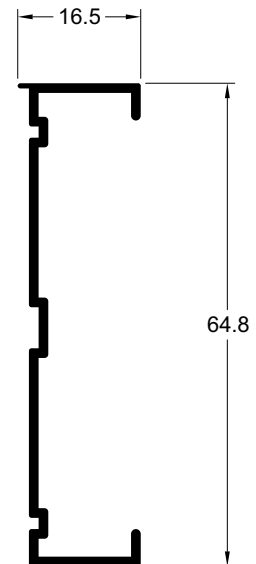
TBG-010
0.114 Kg/m



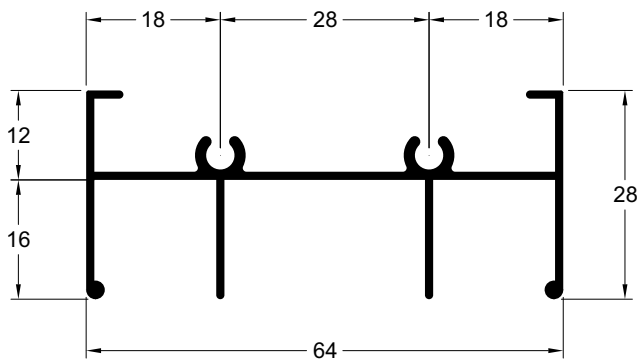
TMP-415
0.570 Kg/m



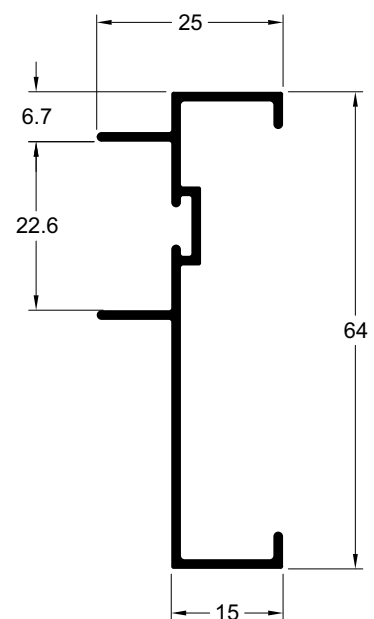
TMP-397
0.378 Kg/m



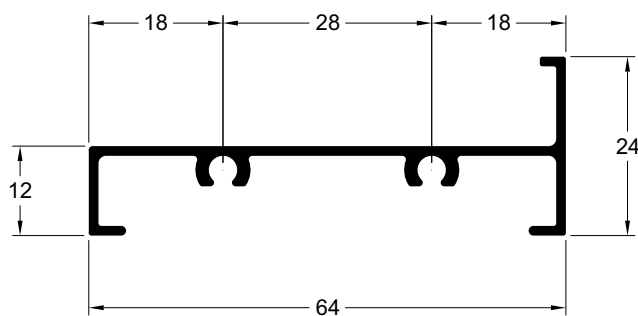
TMP-357
0.570 Kg/m



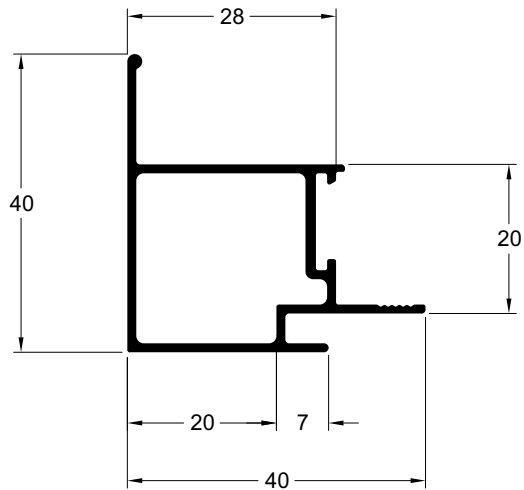
TMP-360
0.445 Kg/m



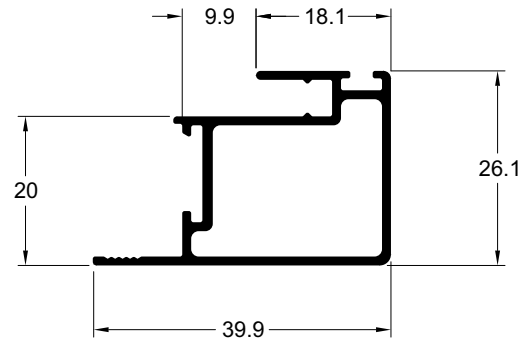
TMP-389
0.466 Kg/m



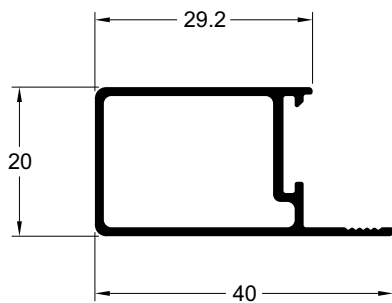
TMP-321
0.468 Kg/m



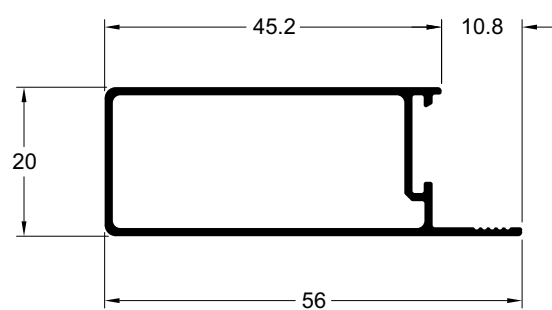
TMP-302
0.443 Kg/m



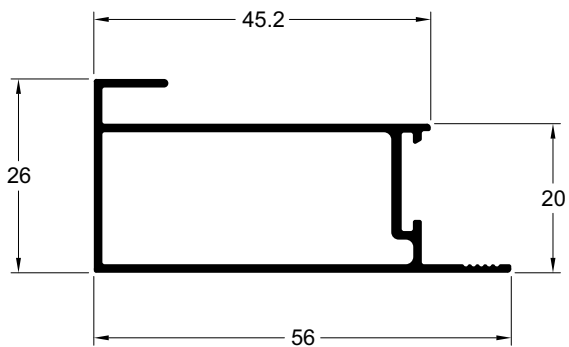
TMP-300
0.361 Kg/m



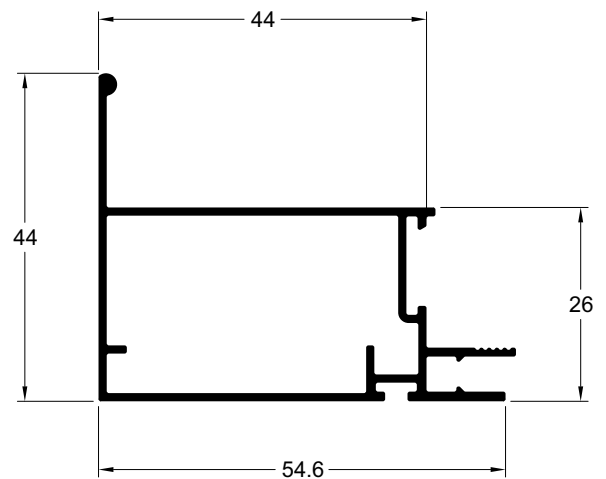
TMP-336
0.424 Kg/m



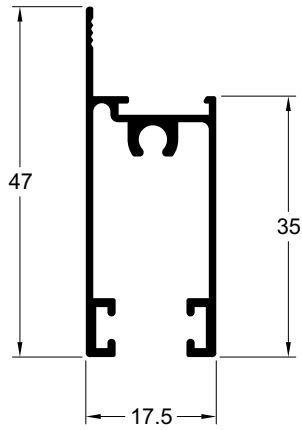
TMP-070
0.497 Kg/m



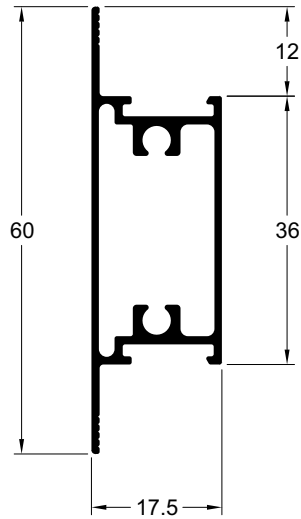
TMP-069
0.602 Kg/m



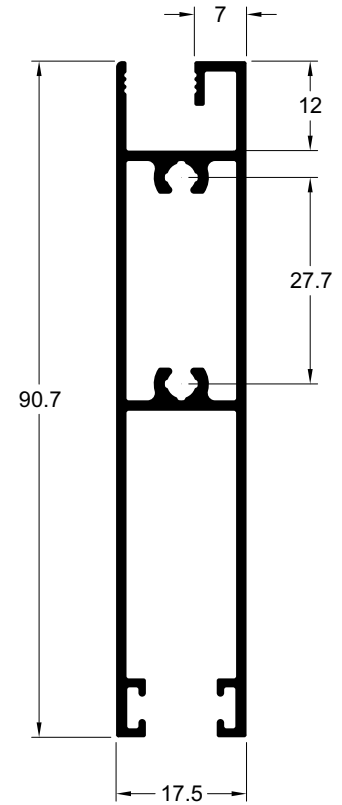
TMP-309
0.387 Kg/m



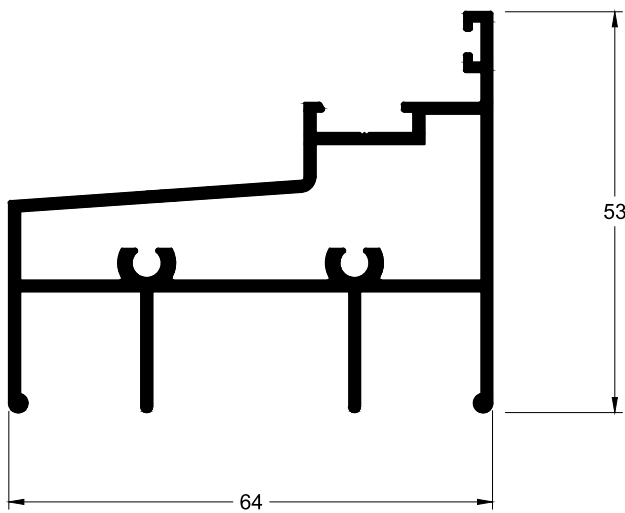
TMP-332
0.473 Kg/m



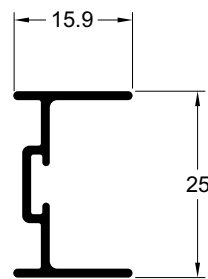
TMP-354
0.982 Kg/m



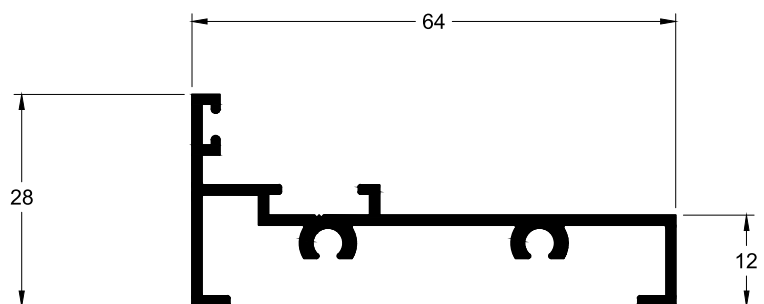
TMP-361
1.146 Kg/m



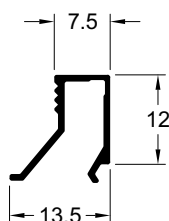
TMP-352
0.200 Kg/m



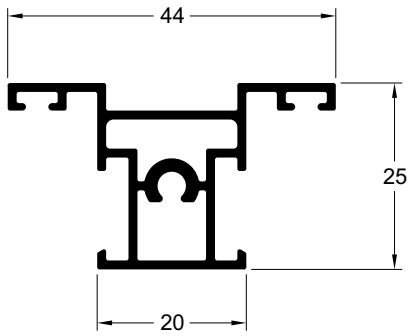
TMP-363
0.543 Kg/m



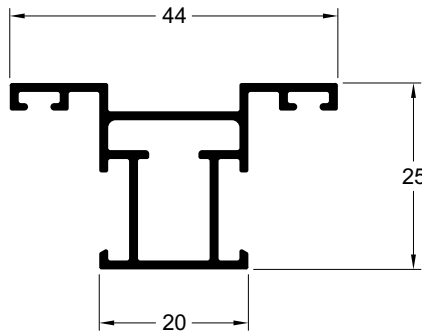
TBG-202
0.098 Kg/m



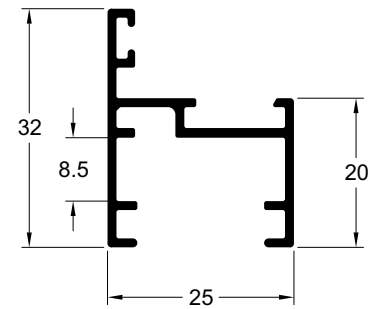
TMM-376
0.521 Kg/m



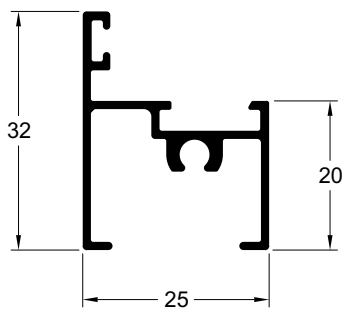
T25-308
0.459 Kg/m



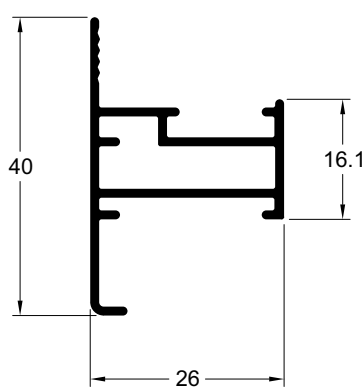
T25-311
0.336 Kg/m



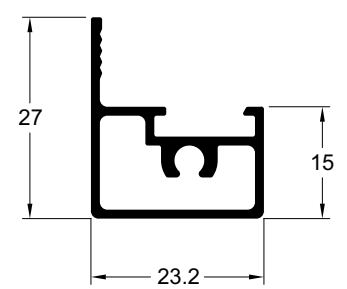
T25-312
0.337 Kg/m



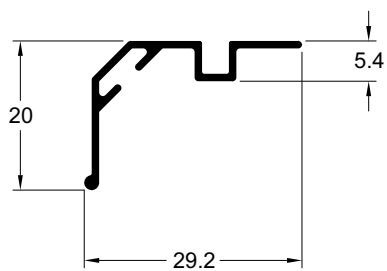
TMM-375
0.391 Kg/m



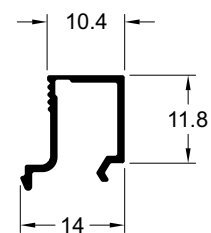
T25-301
0.349 Kg/m



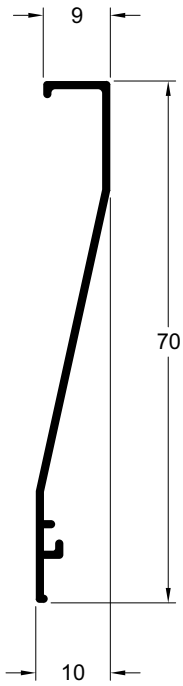
TME-056
0.171 Kg/m



TBG-035
0.117 Kg/m



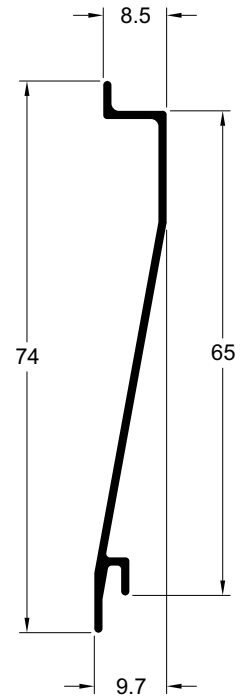
VZ-0004
0.255 Kg/m



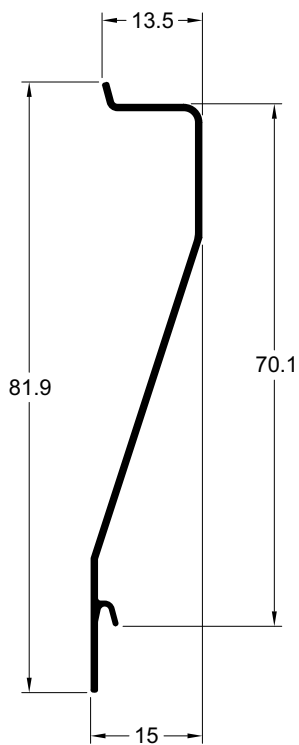
VZ-0201
0.260 Kg/m



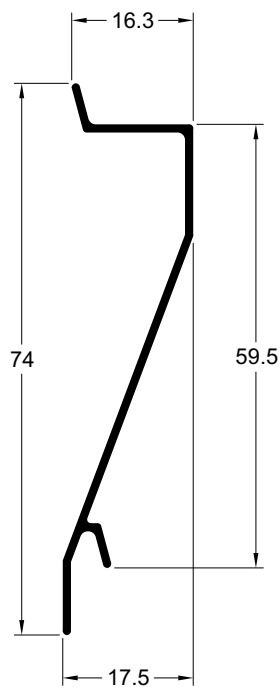
VZ-0024
0.271 Kg/m



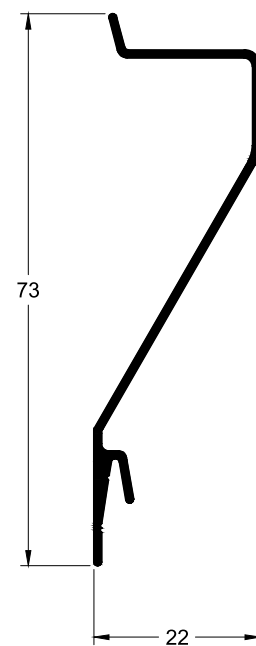
VZ-0025
0.267 Kg/m



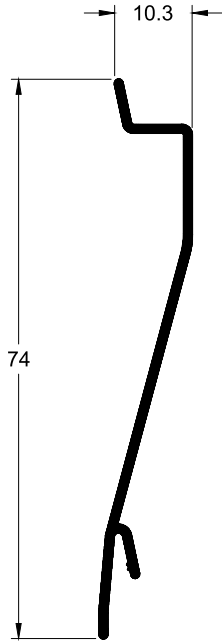
VZ-0023
0.293 Kg/m



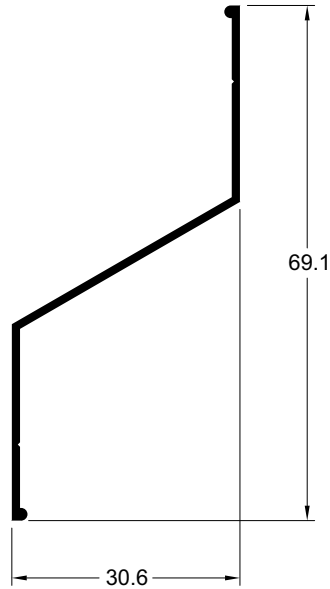
VZ-0006
0.298 Kg/m



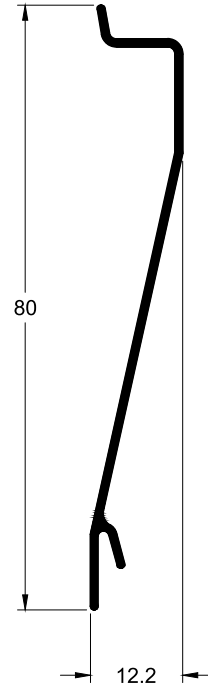
VZ-0051
0.268 Kg/m



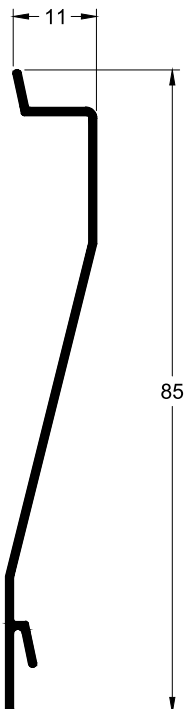
VZ-0063
0.263 Kg/m



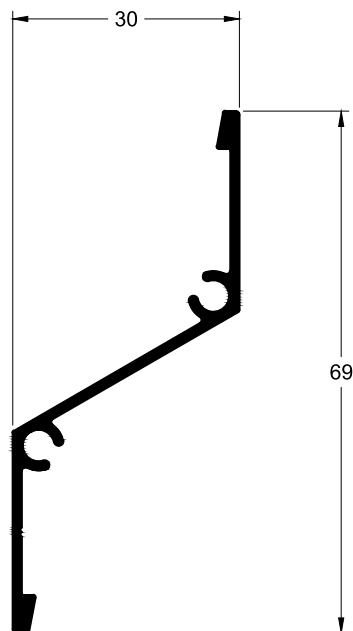
VZ-0020
0.261 Kg/m



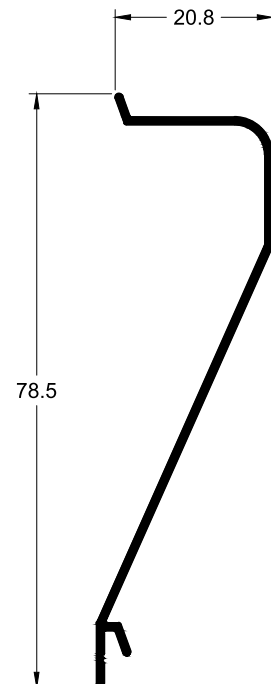
VZ-0027
0.276 Kg/m



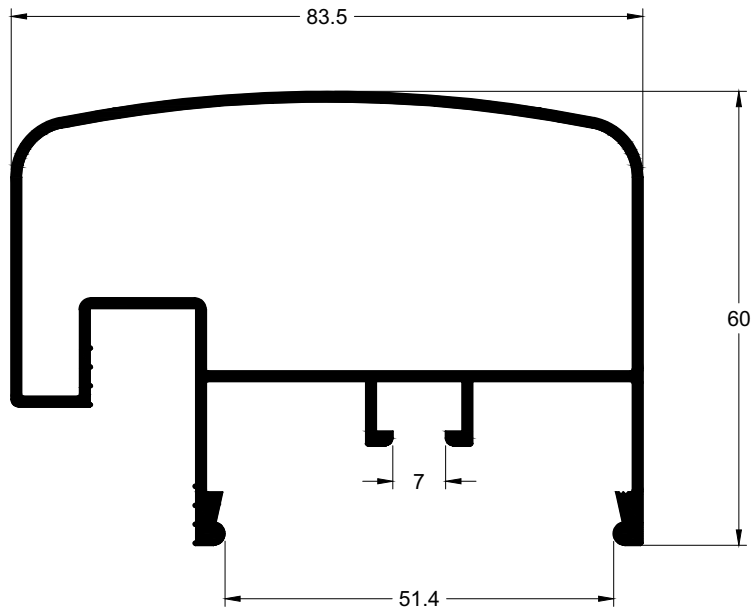
VZ-0060
0.372 Kg/m



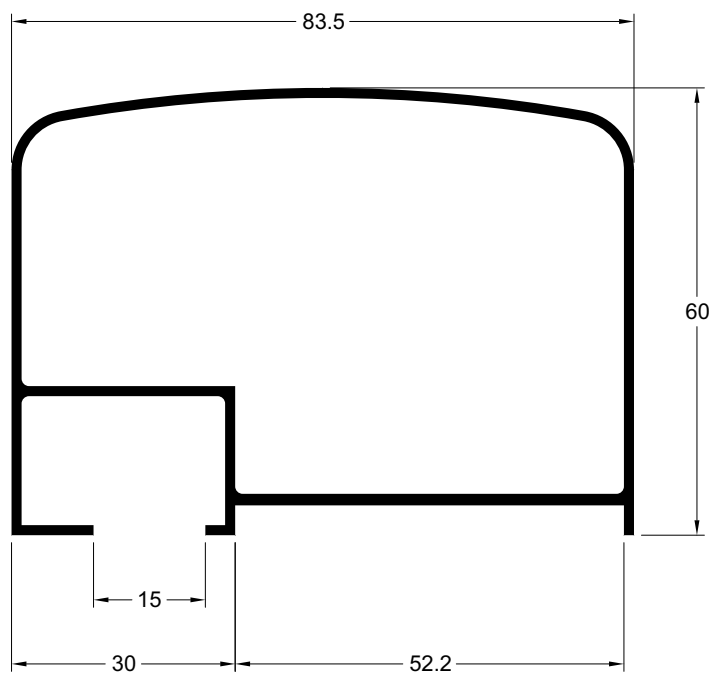
VZ-0990
0.286 Kg/m



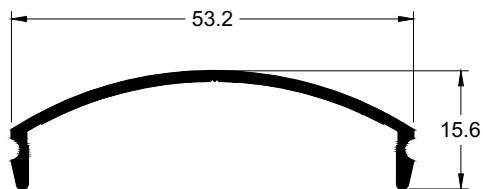
TCG-083
1.235 Kg/m



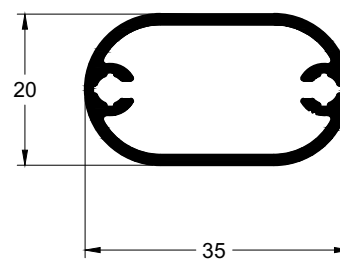
TCG-072
1.131 Kg/m



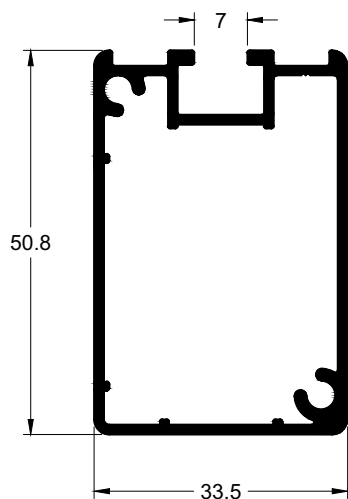
TCG-074
0.261 Kg/m



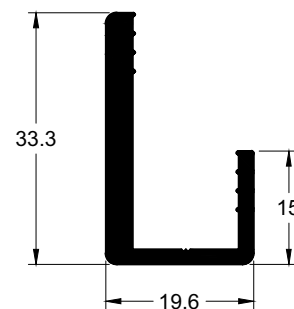
TCG-366
0.410 Kg/m



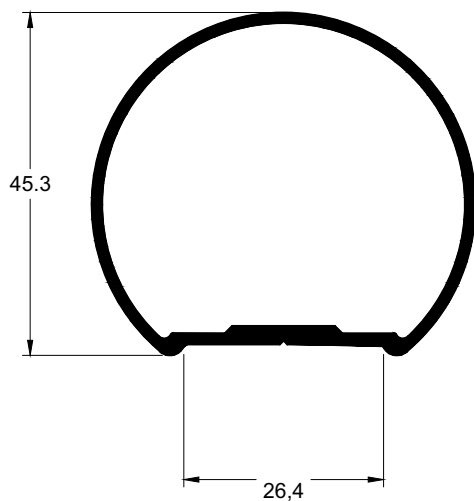
TCG-077
0.750 Kg/m



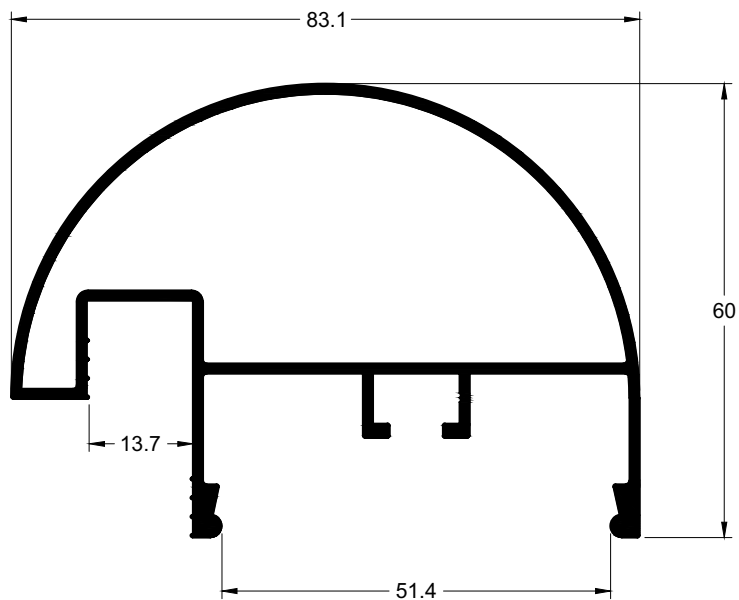
TCG-075
0.480 Kg/m



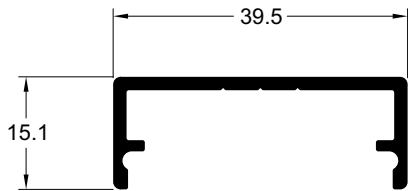
TCG-005
0.639 Kg/m



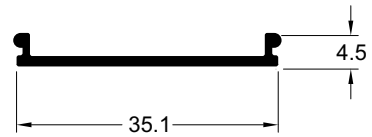
TCG-013
1.151 Kg/m



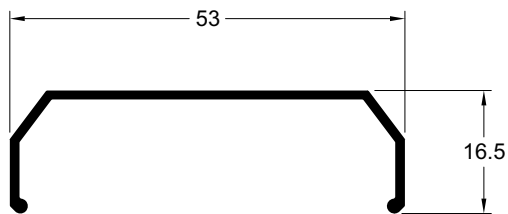
TCG-017
0.338 Kg/m



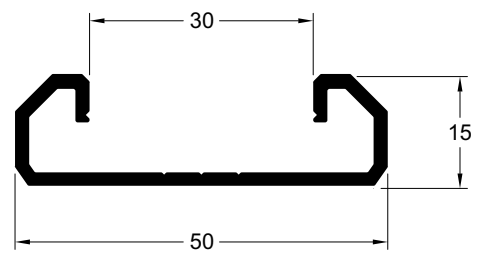
TCG-019
0.161 Kg/m



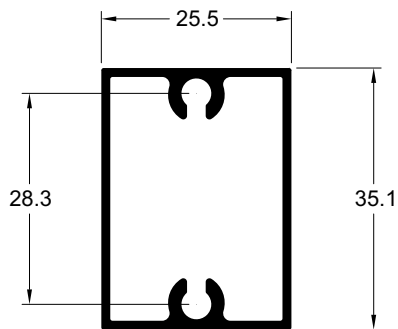
TCG-004
0.268 Kg/m



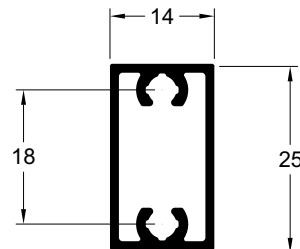
TCG-006
0.470 Kg/m



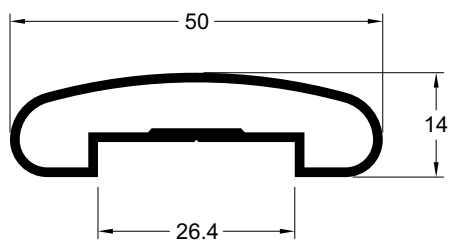
TCG-012
0.502 Kg/m



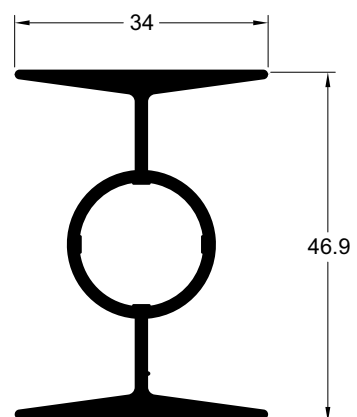
TCG-021
0.324 Kg/m



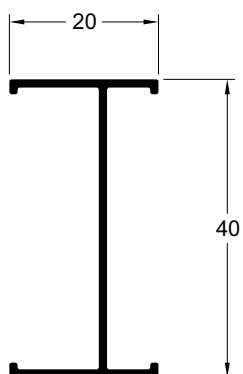
TCG-003
0.437 Kg/m



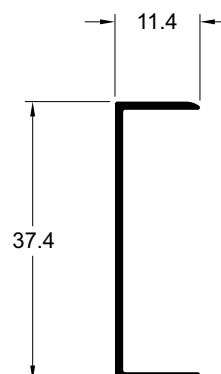
TD-0855
0.809 Kg/m



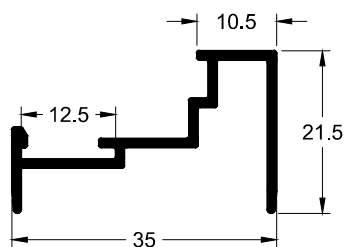
DV-0029
0.242 Kg/m



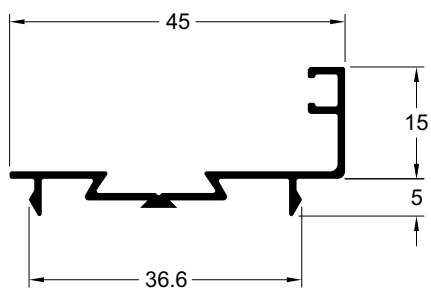
DV-0111
0.171 Kg/m



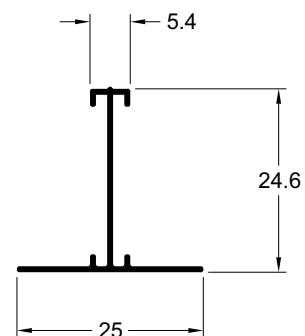
DV-0112
0.273 Kg/m



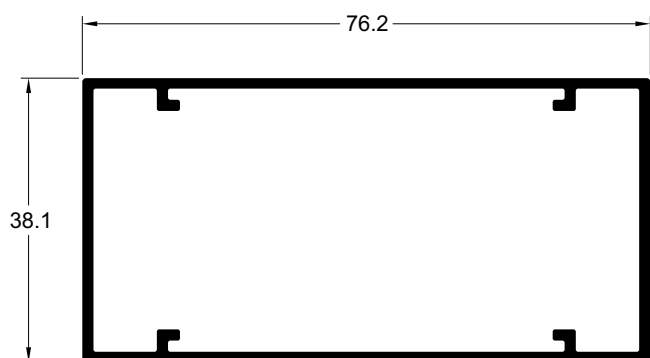
DV-0020
0.252 Kg/m



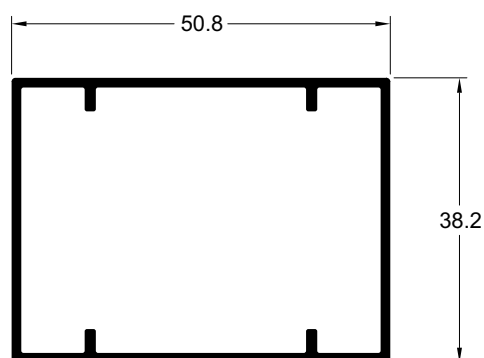
DS-0202
0.129 Kg/m



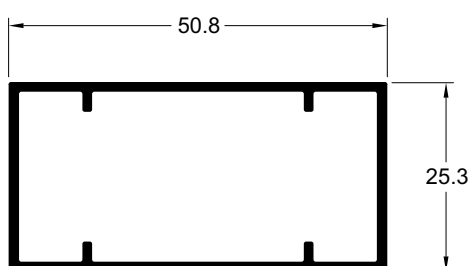
TPC-003
0.939 Kg/m



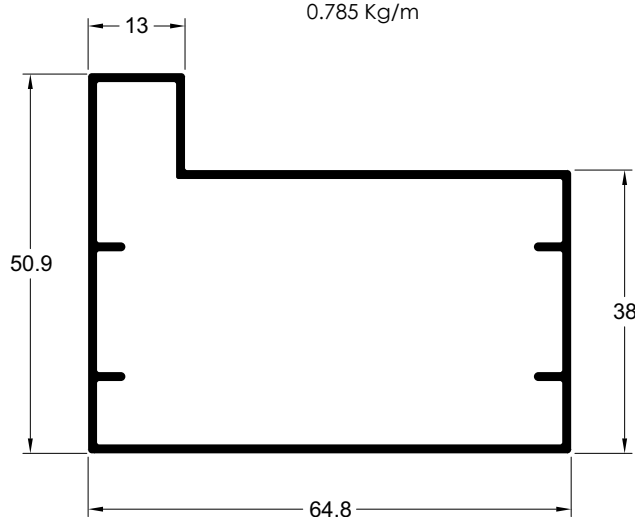
TPC-004
0.660 Kg/m



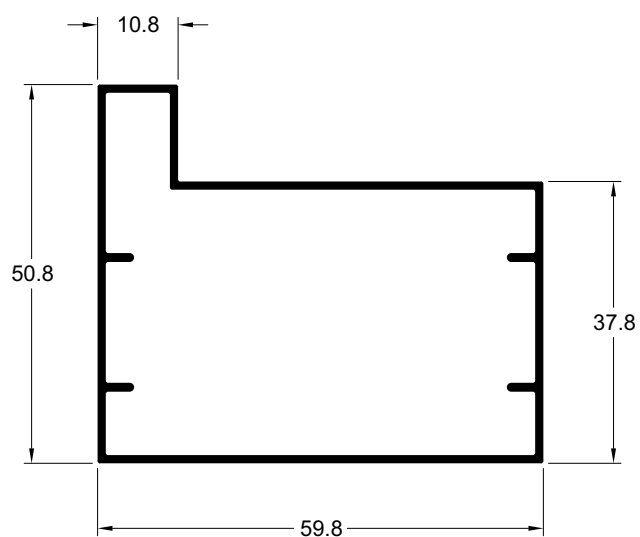
TPC-002
0.568 Kg/m



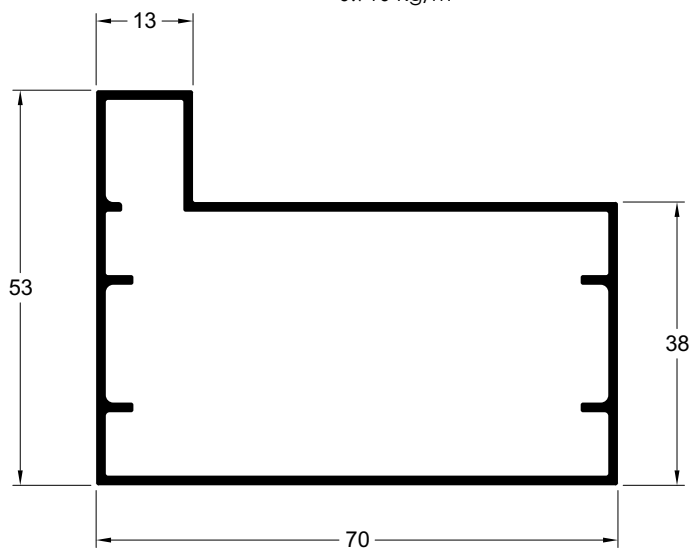
TPC-027
0.785 Kg/m



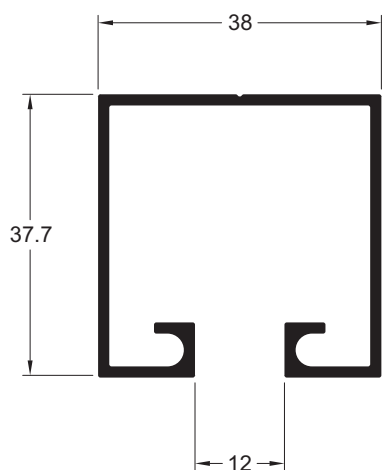
TPC-026
0.694 Kg/m



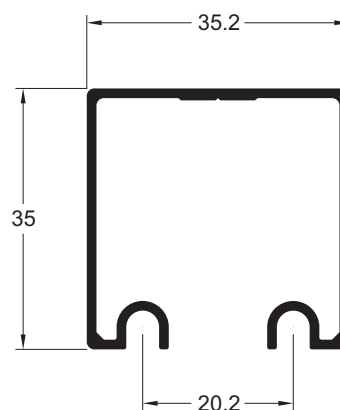
TPC-0010L
0.910 Kg/m



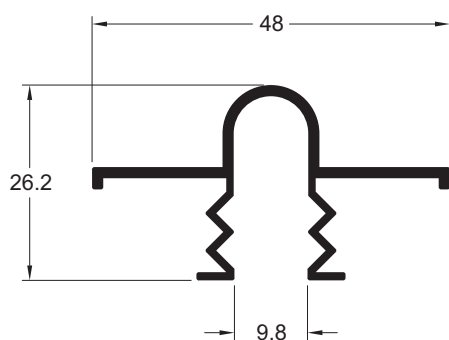
TDS-152
0.635 Kg/m



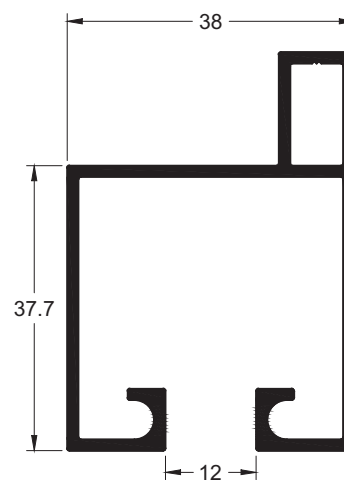
TDS-266
0.495 Kg/m



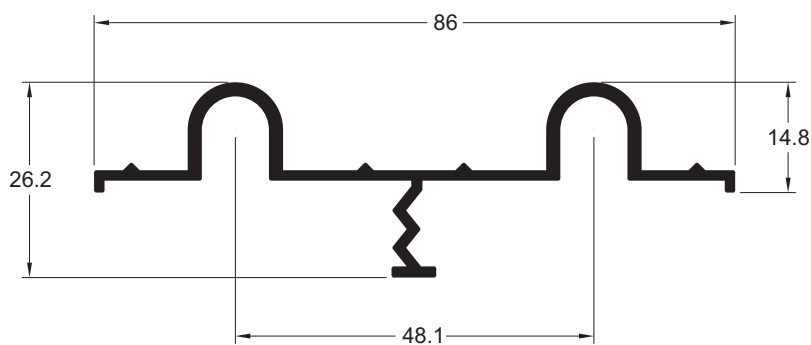
TPC-006
0.405 Kg/m



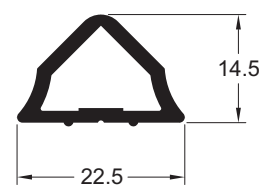
TDS-152A
0.791 Kg/m



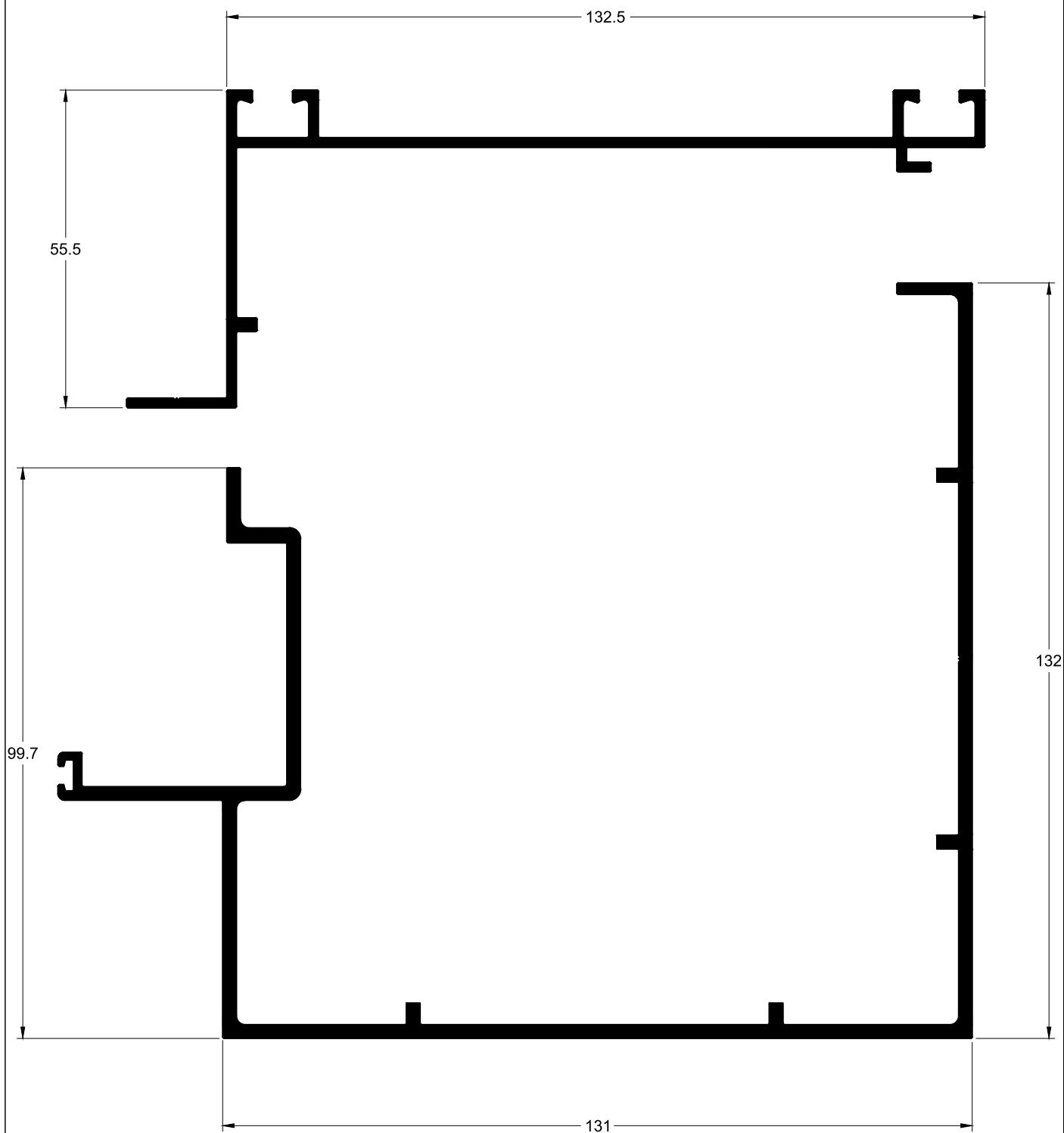
TPC-005
0.653 Kg/m



T30-044
0.275 Kg/m

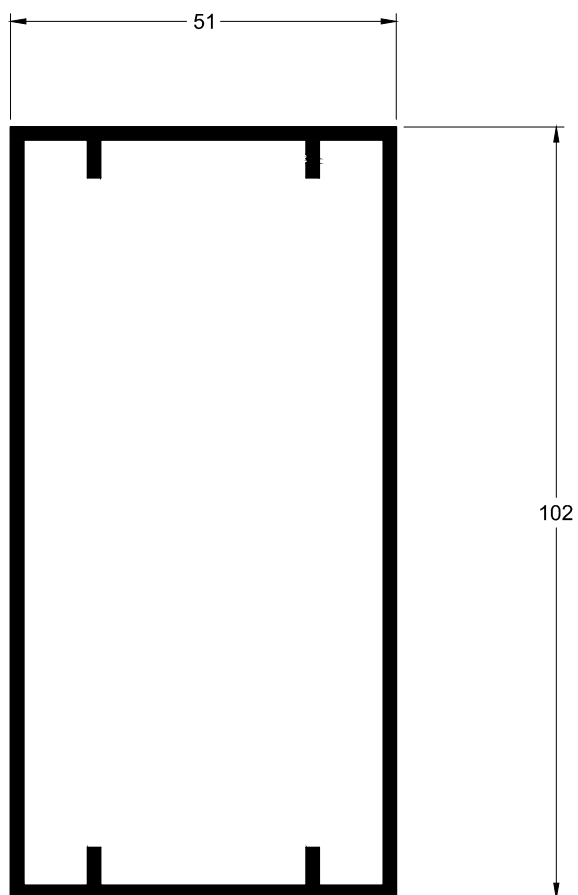


TPC-160
1.175 Kg/m

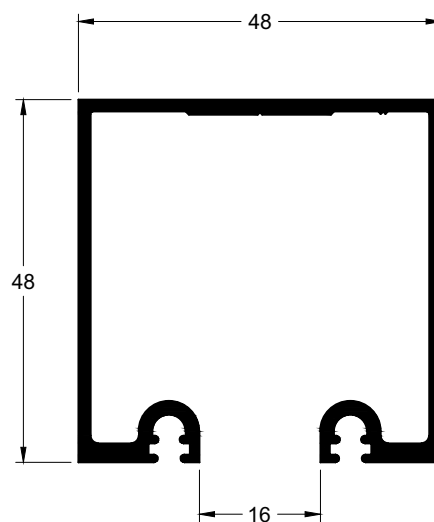


TPC-811
2.855 Kg/m

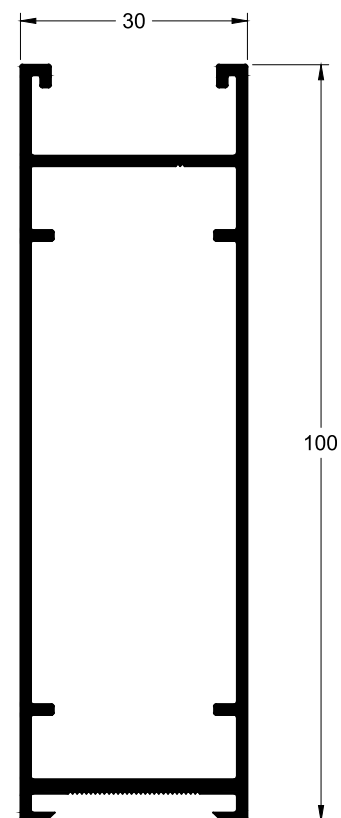
TP-0719
1.470 Kg/m



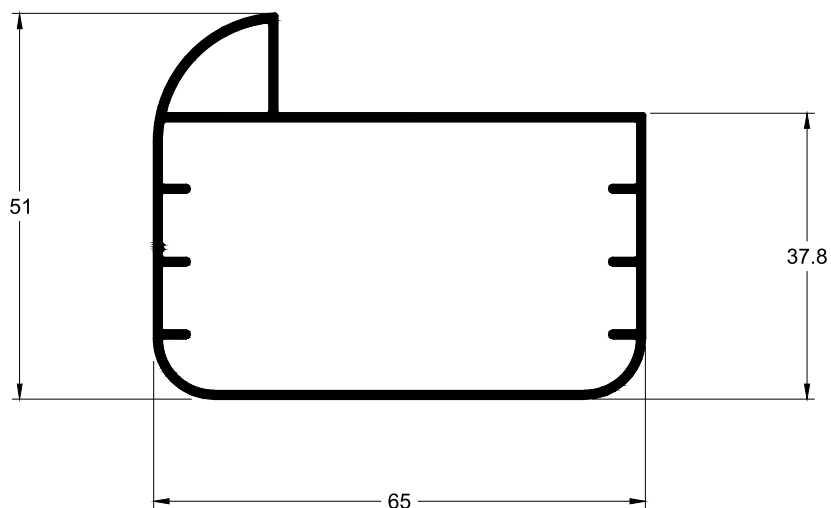
TDS-832
0.900 Kg/m



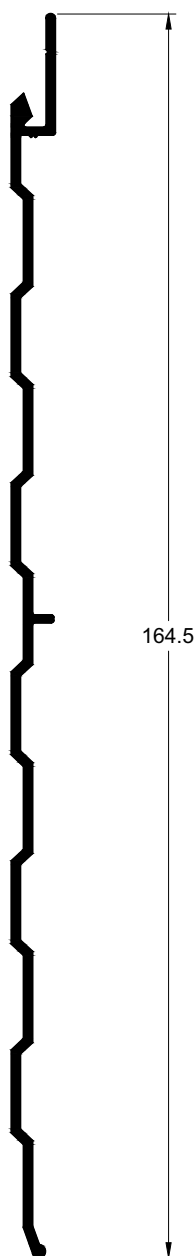
TPC - 190
1.087 Kg/m



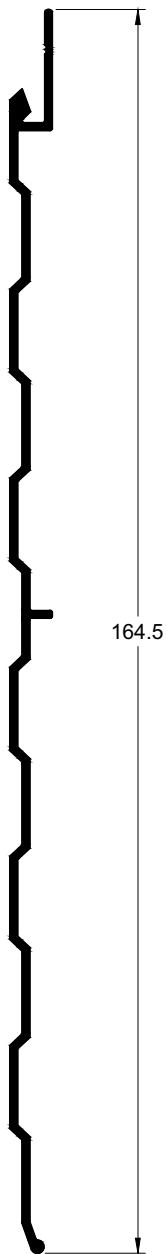
TPC - 030
0.745 Kg/m



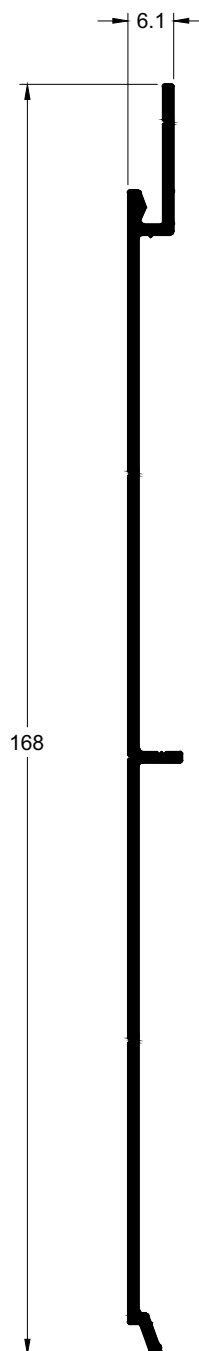
TLB-050L
0.603 Kg/m



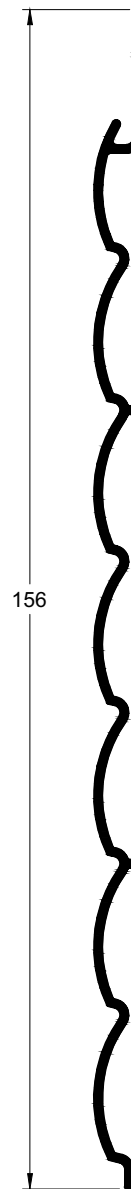
TLB-050E
0.511 Kg/m



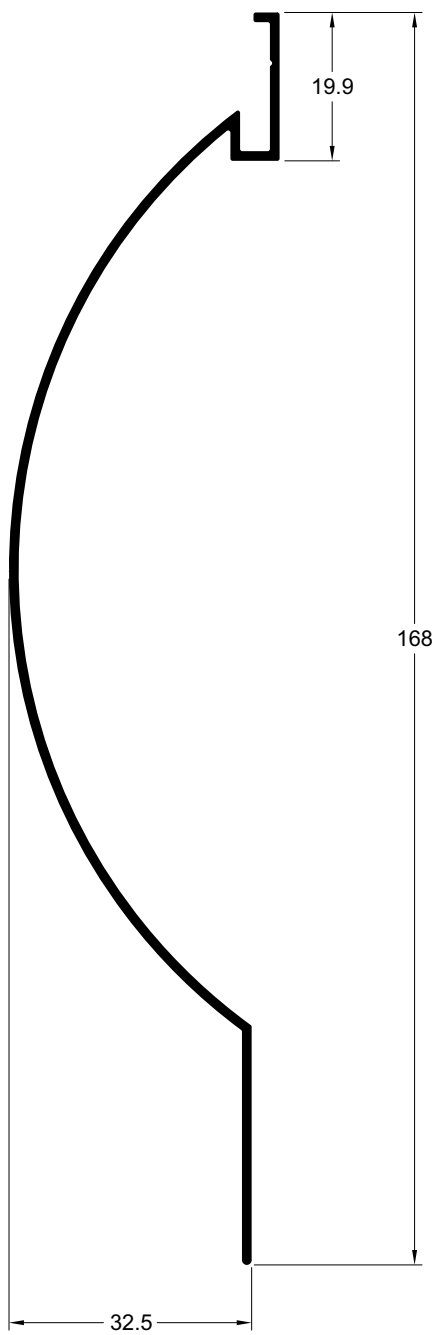
TLB-335
0.730 Kg/m



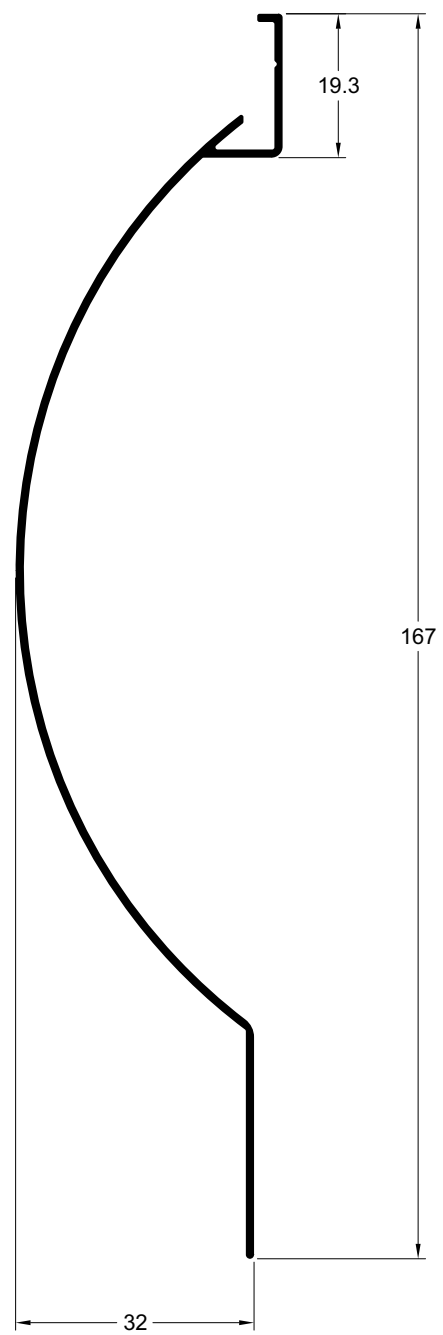
TLB-010
0.537 Kg/m



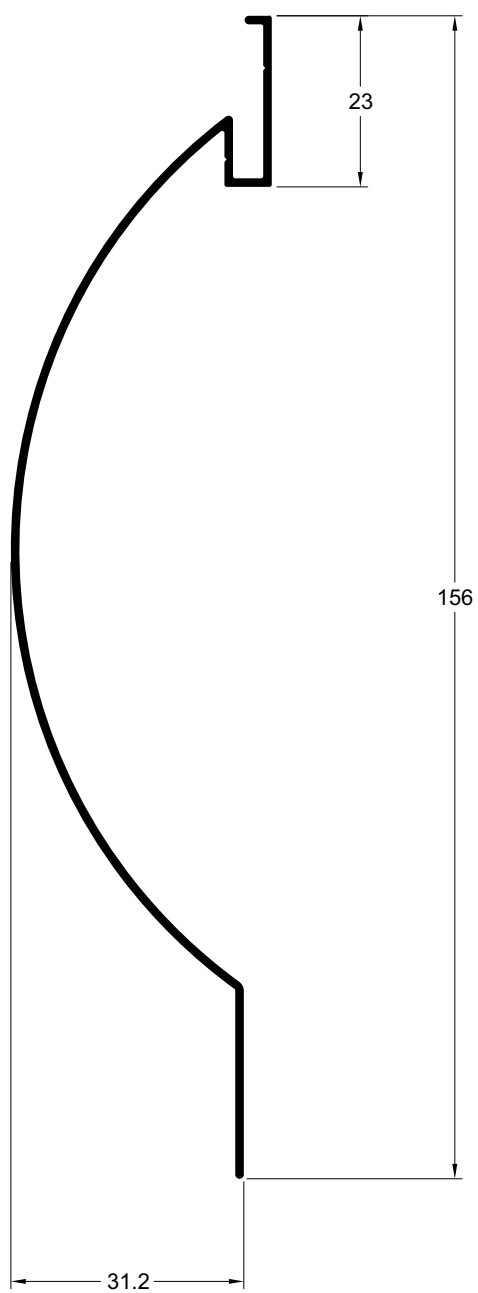
TLB-069
0.721 Kg/m



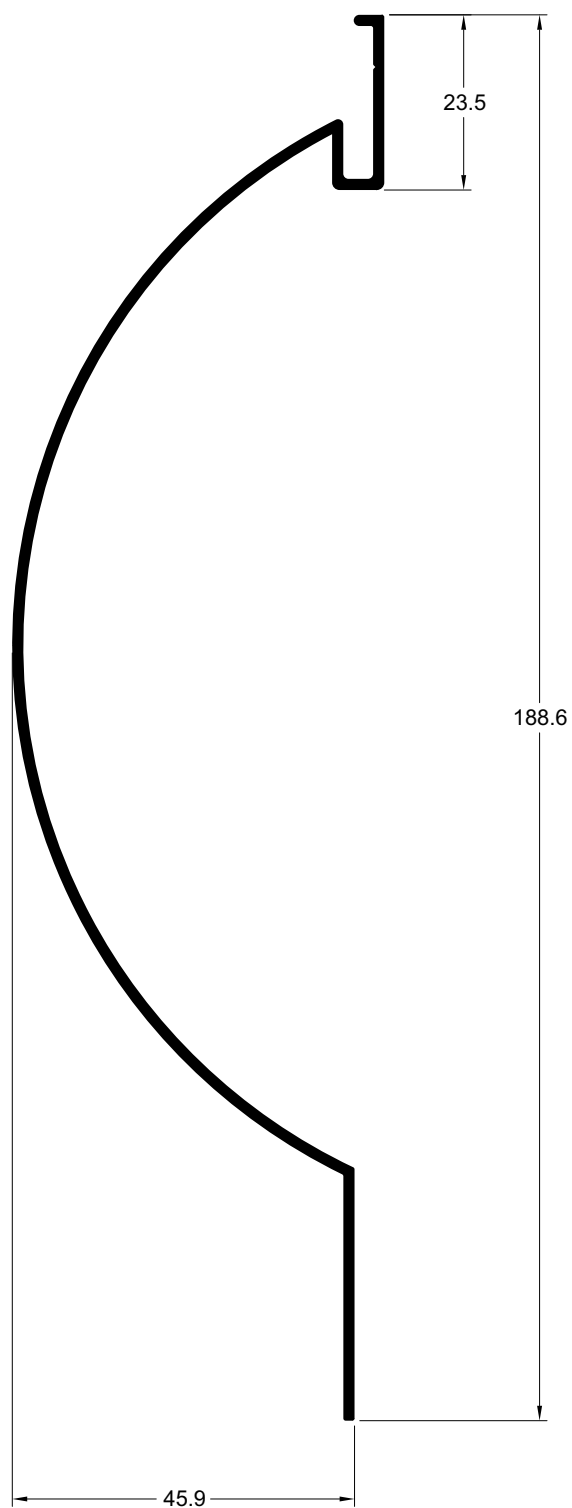
TLB-071
0.606 Kg/m



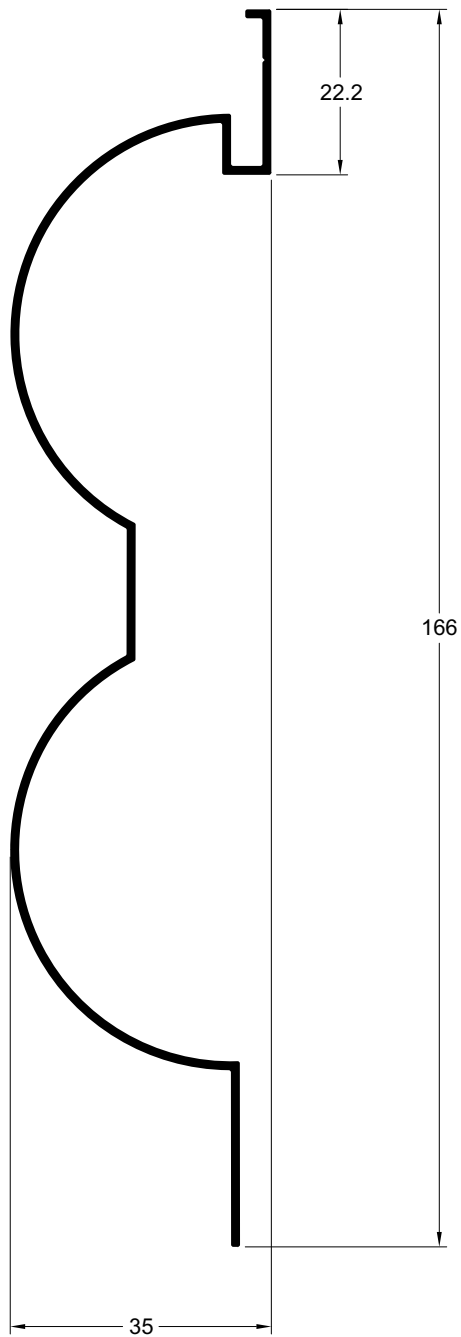
TLB-082
0.619 Kg/m



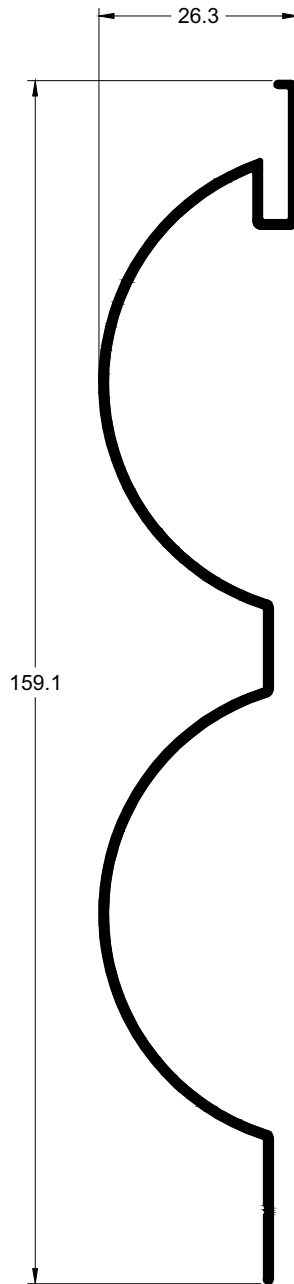
TLB-038
0.998 Kg/m



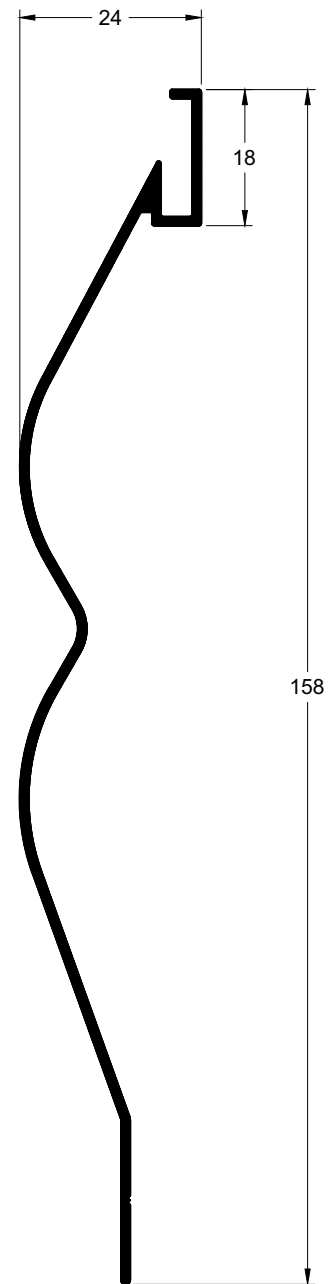
TLB-070
0.756 Kg/m



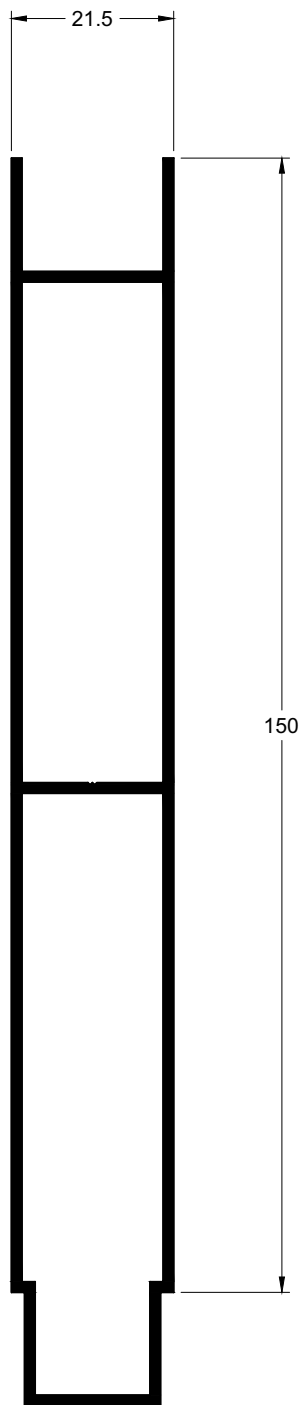
TLB-039
0.710 Kg/m



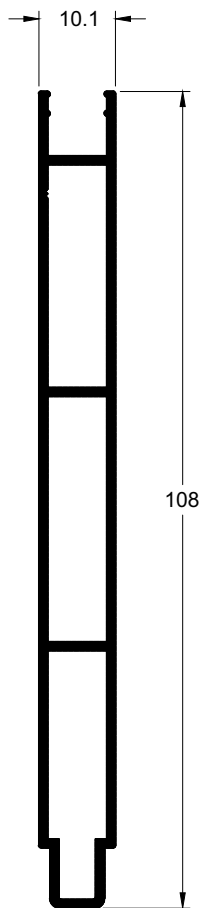
TLB-238
0.618 Kg/m



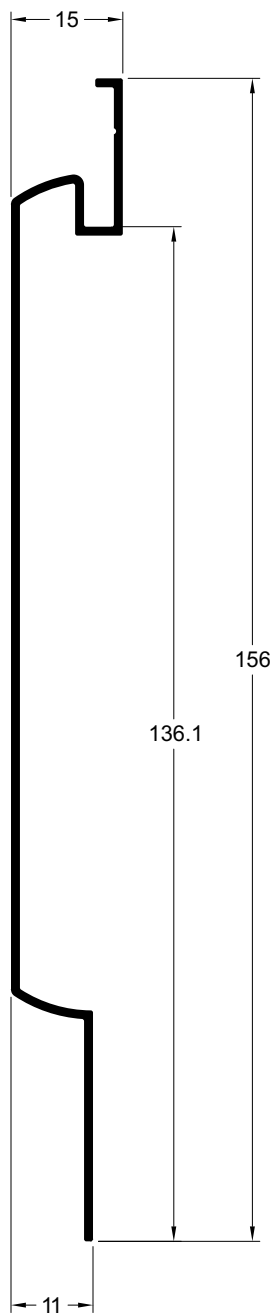
TLB-189
1.464 Kg/m



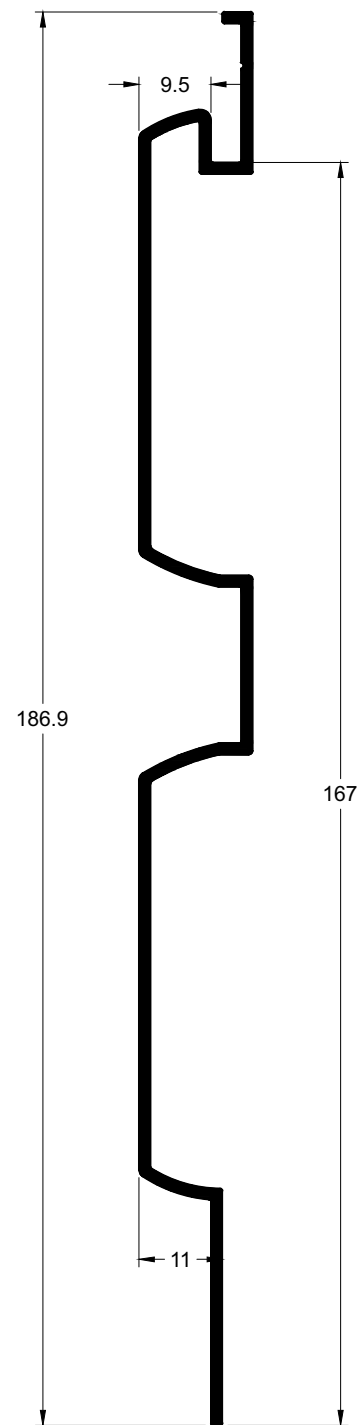
TLB-185
0.771 Kg/m



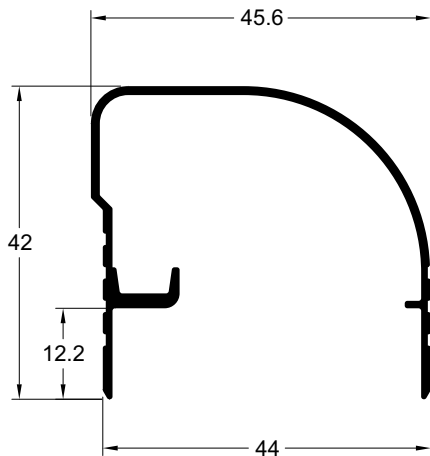
19-0065
0.619 Kg/m



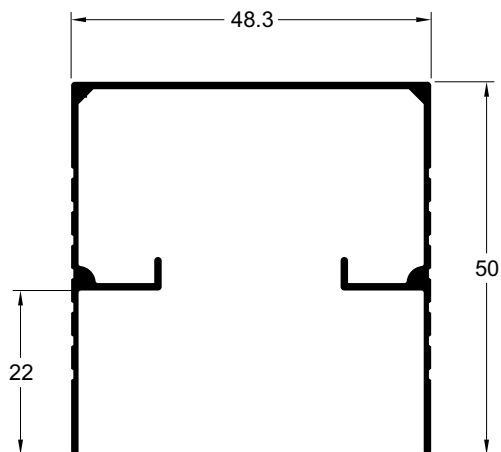
TLB-080
0.983 Kg/m



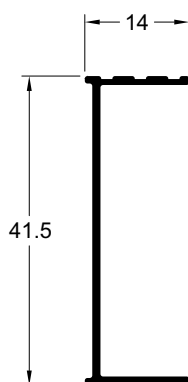
TBX-347
0.443 Kg/m



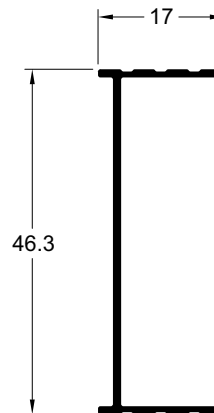
42-0312
0.483 Kg/m



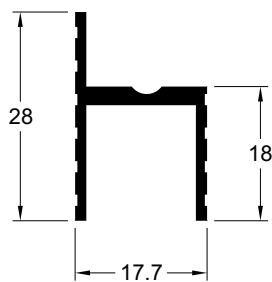
TBX-174-GD
0.195 Kg/m



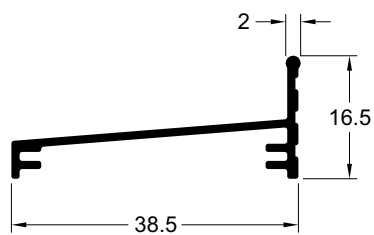
TBX-174
0.225 Kg/m



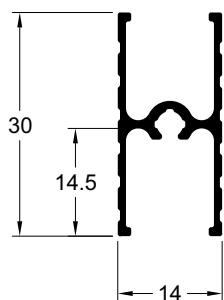
TBX-106
0.266 Kg/m



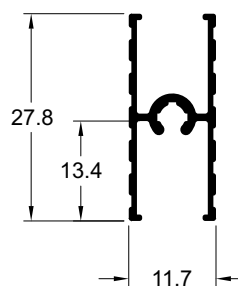
TBX-349
0.215 Kg/m



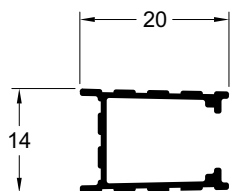
TBX-159
0.241 Kg/m



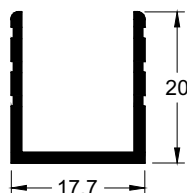
TBX-346
0.209 Kg/m



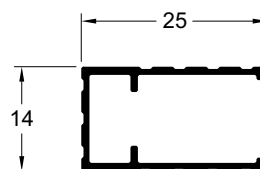
TBX-350
0.158 Kg/m



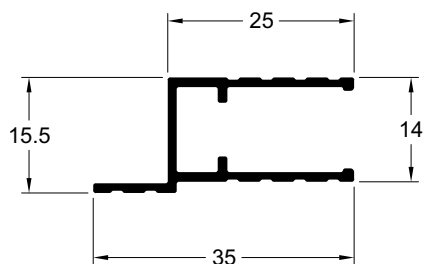
TBX-112
0.198 Kg/m



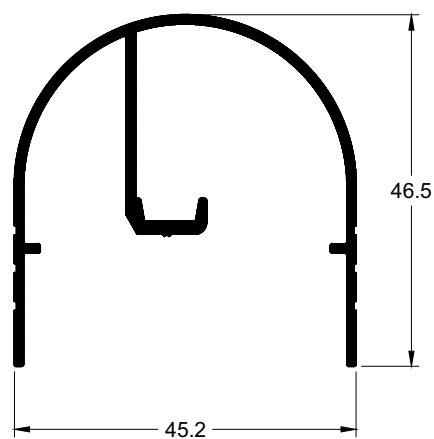
TBX-158
0.188 Kg/m



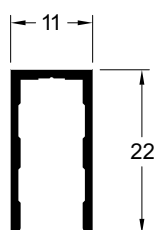
TBX-107
0.259 Kg/m



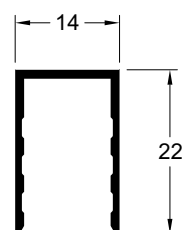
TBX-200
0.528 Kg/m



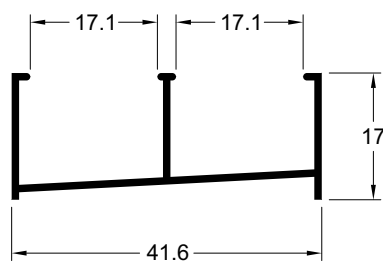
PU-0041
0.165 Kg/m



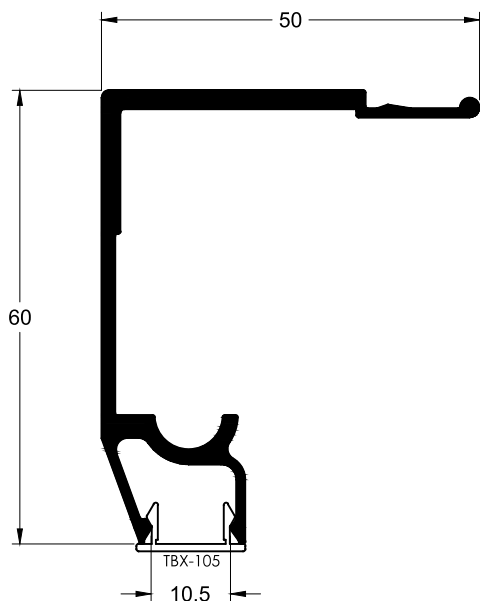
PU-0042
0.166 Kg/m



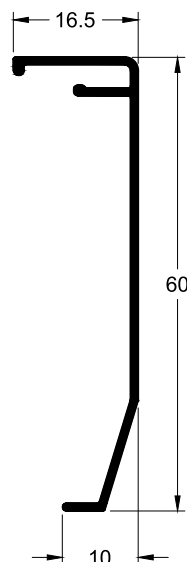
42-0314
0.248 Kg/m



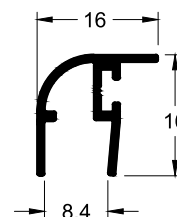
TBX-111
0.769 Kg/m



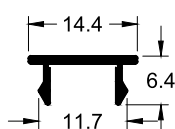
TBX-113
0.244 Kg/m



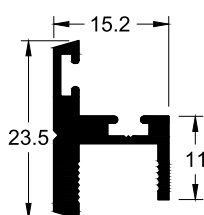
TBX-689
0.143 Kg/m



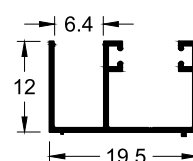
TBX-105
0.066 Kg/m



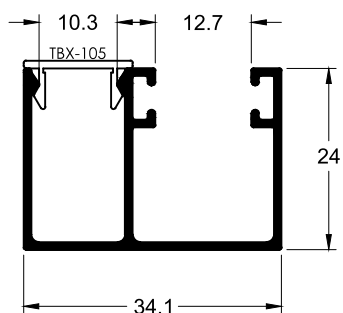
TBX-209
0.273 Kg/m



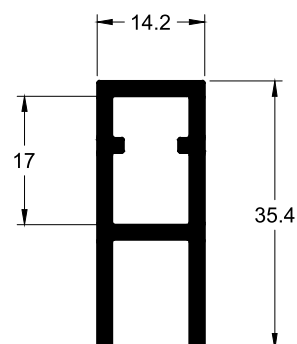
TBX-206
0.384 Kg/m



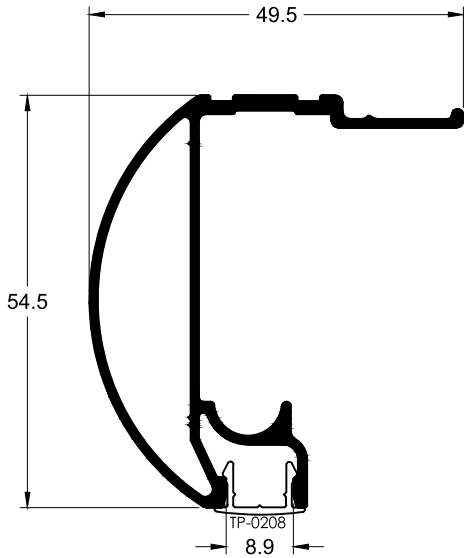
TBX-039
0.337 Kg/m



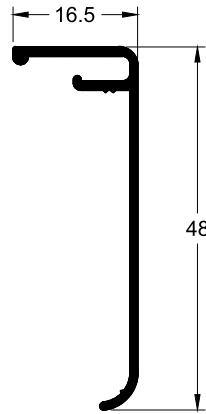
TBX-022
0.510 Kg/m



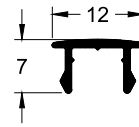
TP-0255
0.641 Kg/m



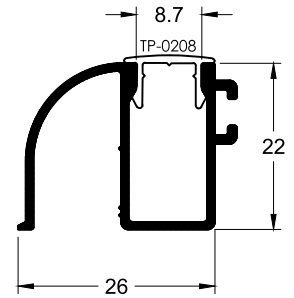
TP-0202
0.214 Kg/m



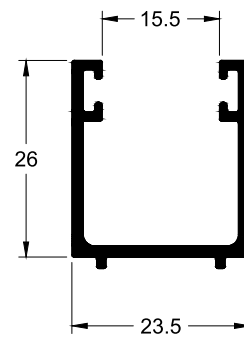
TP-0208
0.057 Kg/m



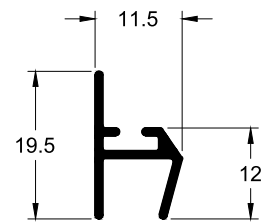
TP-0240
0.270 Kg/m



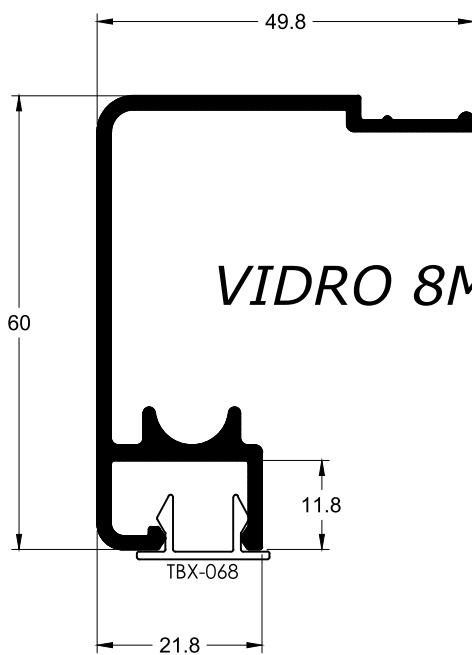
TBX-069
0.354 Kg/m



TBX-232
0.125 Kg/m



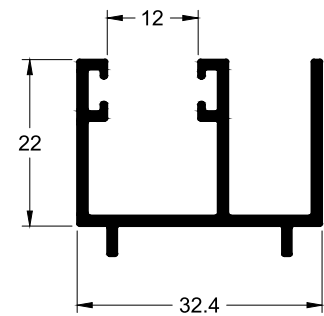
TBX-229
0.794 Kg/m



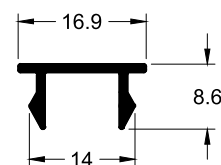
TBX-184
0.265 Kg/m



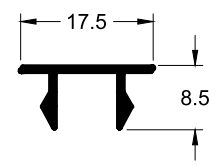
TBX-240
0.433 Kg/m



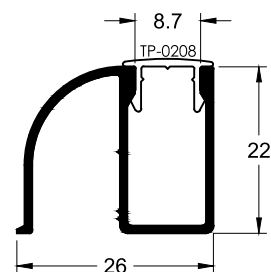
TBX-225
0.103 Kg/m



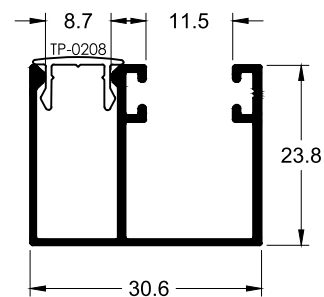
TBX-068
0.099 Kg/m



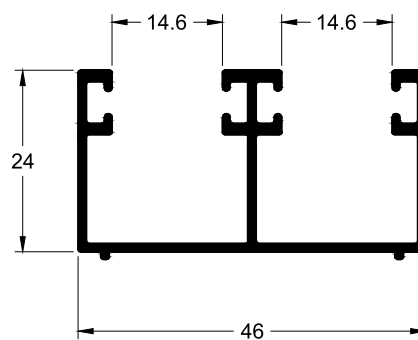
TAL-002
0.245 Kg/m



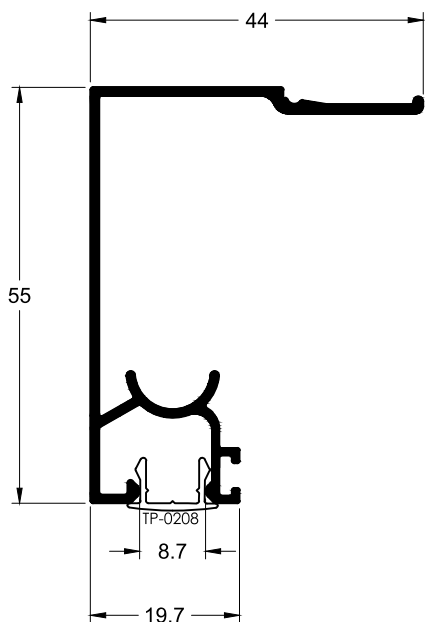
TAL-003
0.297 Kg/m



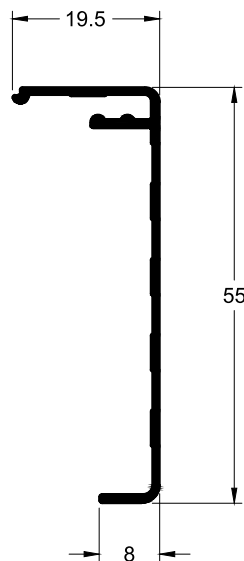
TAL-070
0.483 Kg/m



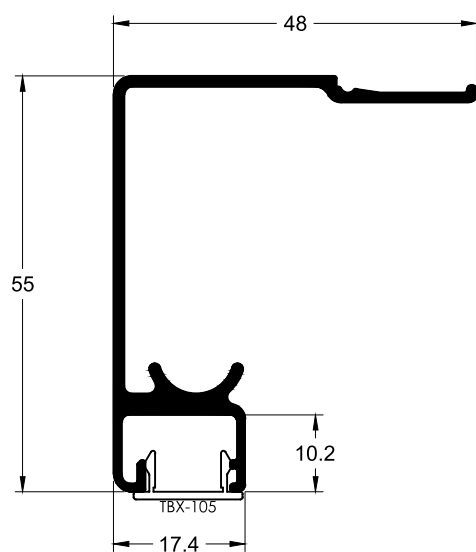
TAL-001
0.482 Kg/m



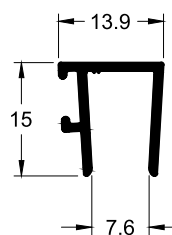
TAL-050
0.267 Kg/m



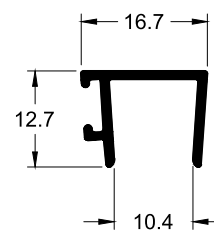
TAL-049
0.588 Kg/m

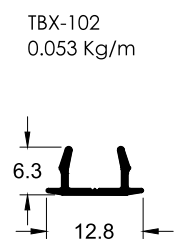
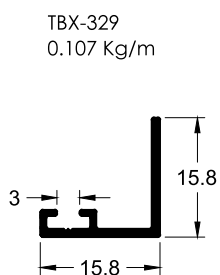
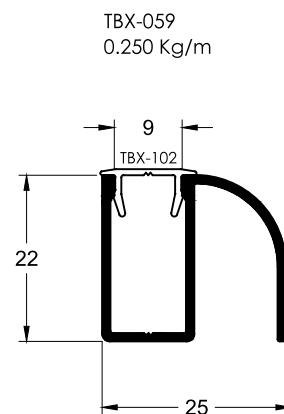
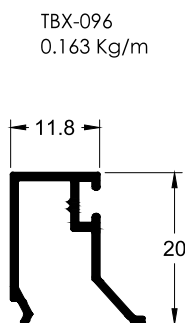
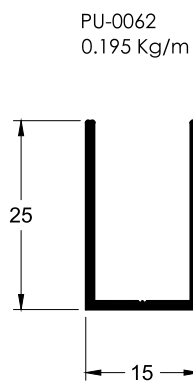
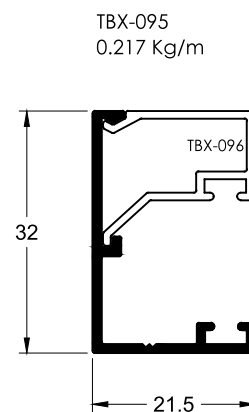
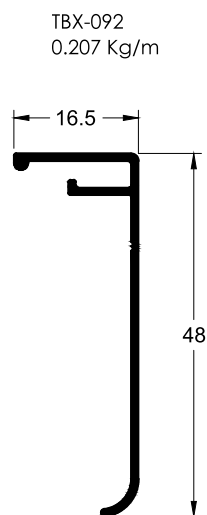
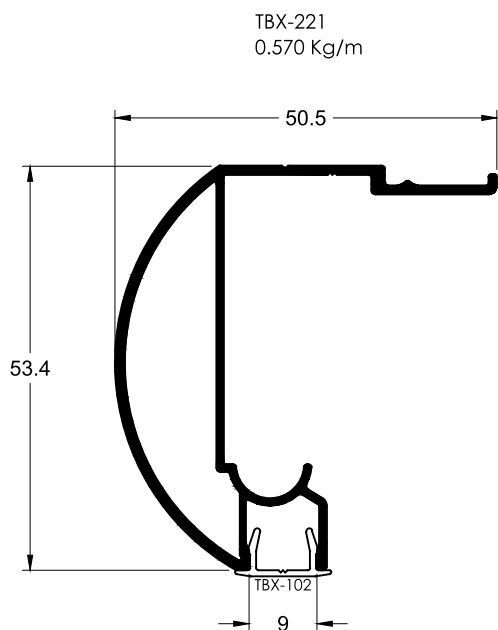


TAL-046
0.137 Kg/m

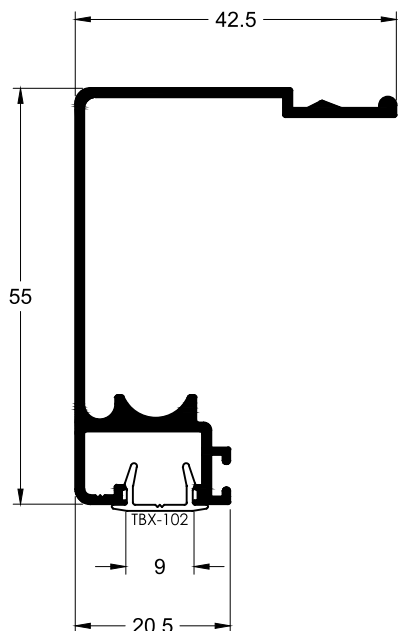


TAL-015
0.132 Kg/m

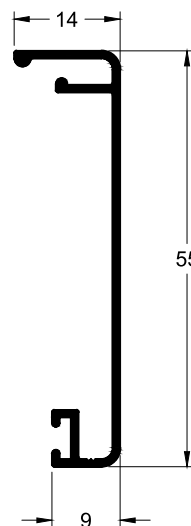




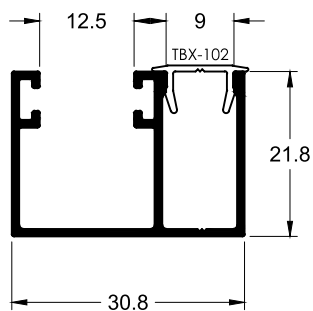
TBX-297
0.527 Kg/m



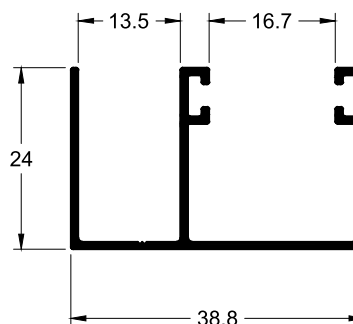
TBX-198
0.260 Kg/m



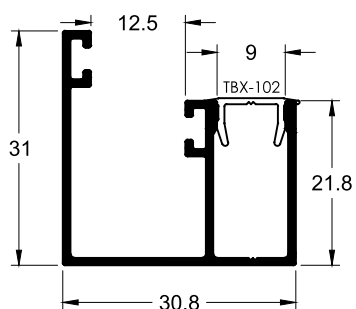
TBX-164
0.303 Kg/m



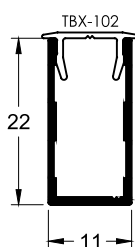
TBX-182
0.335 Kg/m



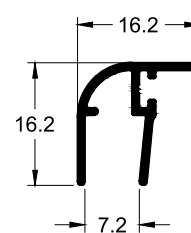
TBX-214
0.329 Kg/m



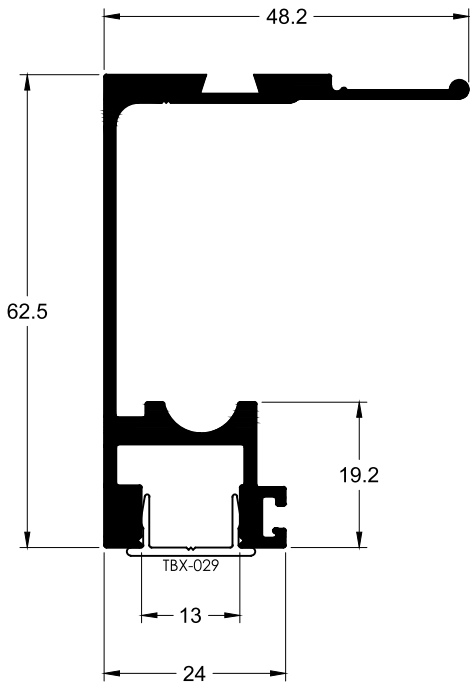
TBX-103
0.126 Kg/m



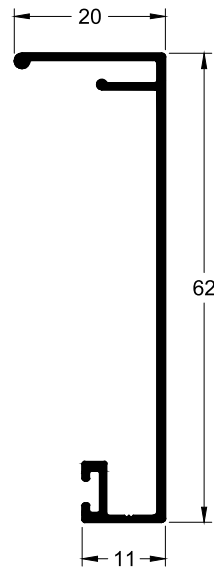
TBX-093
0.160 Kg/m



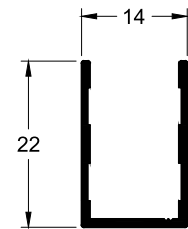
TBX-169
0.931 Kg/m



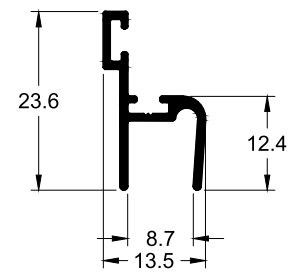
TBX-090
0.311 Kg/m



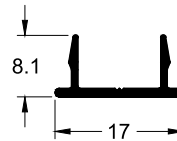
TBX-137
0.149 Kg/m



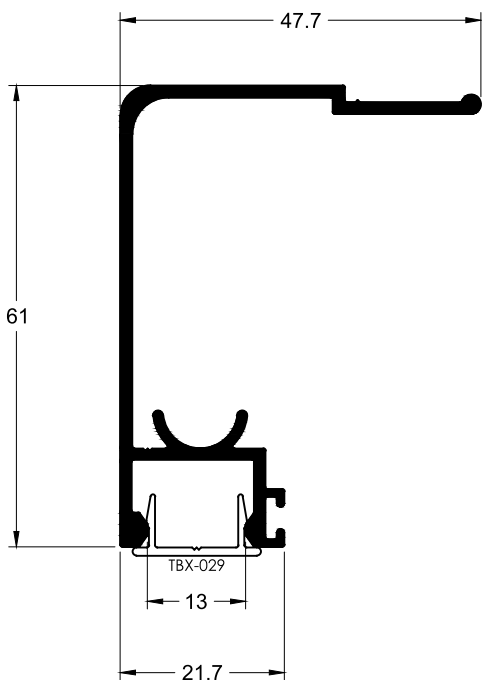
TBX-281
0.147 Kg/m



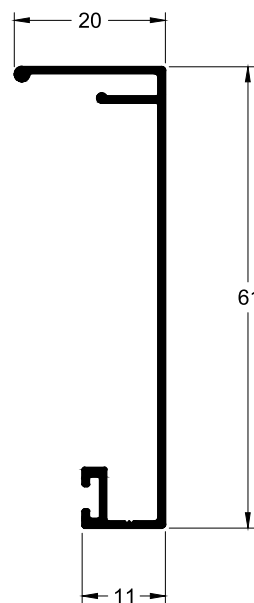
TBX-029
0.082 Kg/m



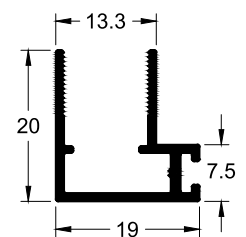
TBX-187
0.691 Kg/m



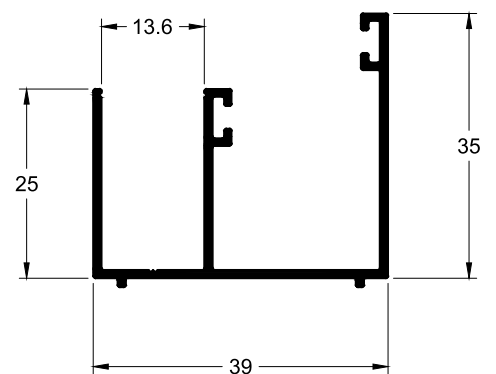
TBX-188
0.294 Kg/m



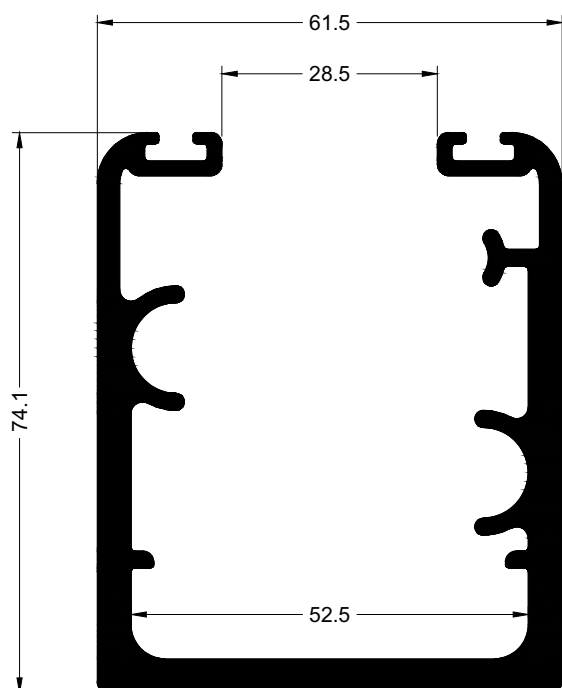
TBX-030
0.194 Kg/m



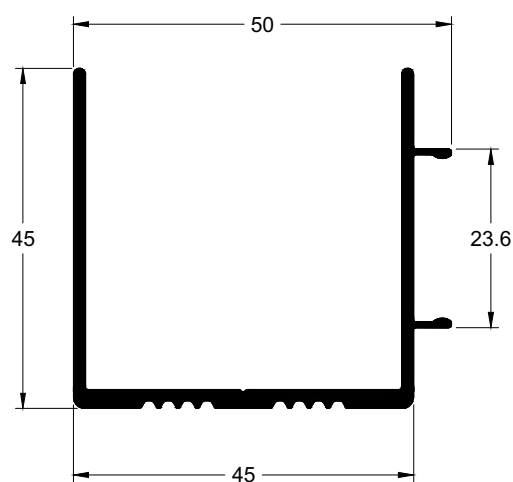
TBX-141
0.406 Kg/m



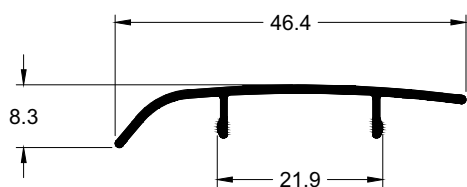
TFS-001
1.241 Kg/m



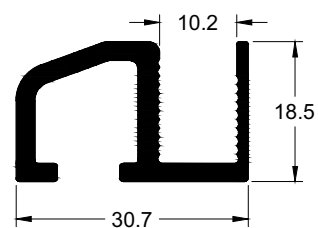
TFS-003
0.660 Kg/m



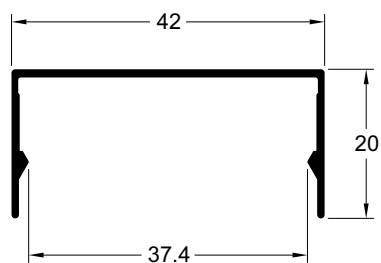
TFS-004
0.176 Kg/m



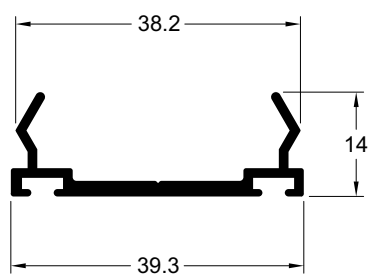
TFS-002
0.501 Kg/m



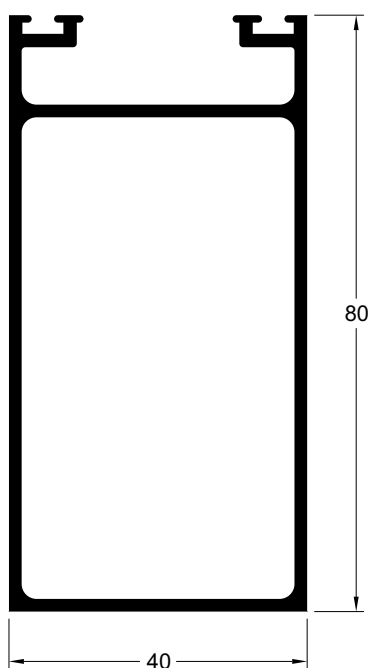
TFC-013
0.245 Kg/m

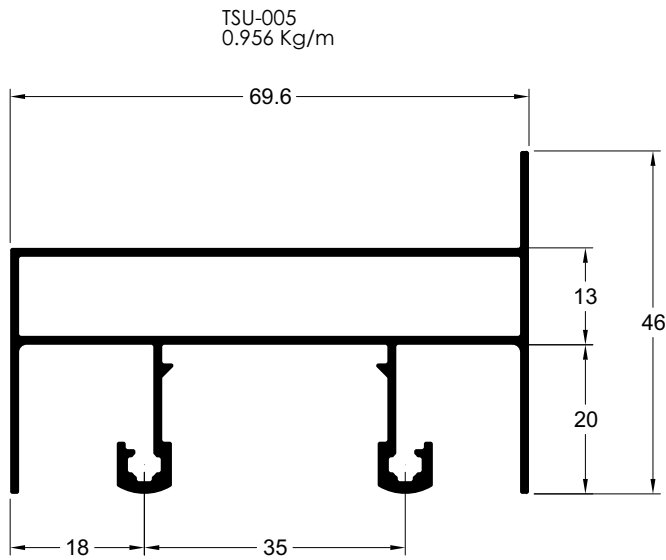
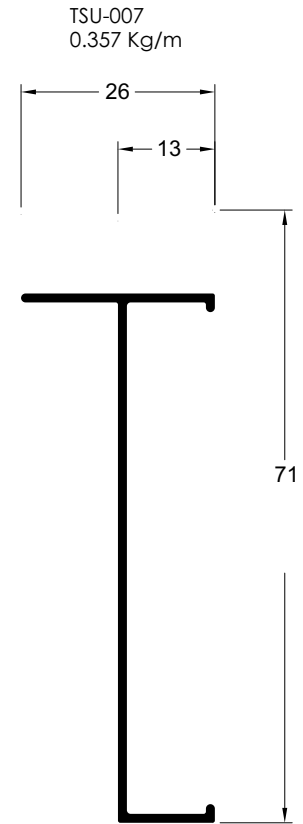
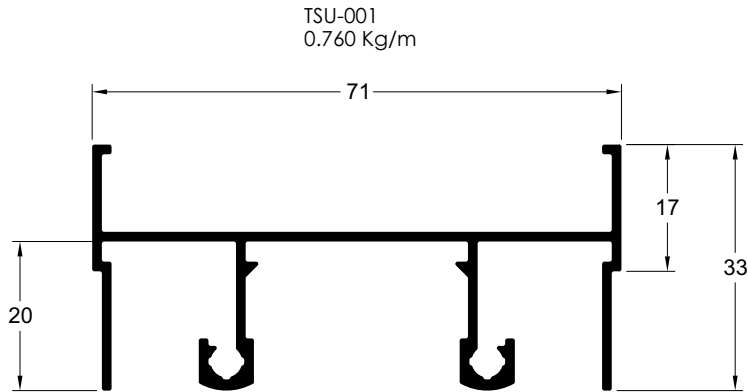


TFC-014
0.315 Kg/m

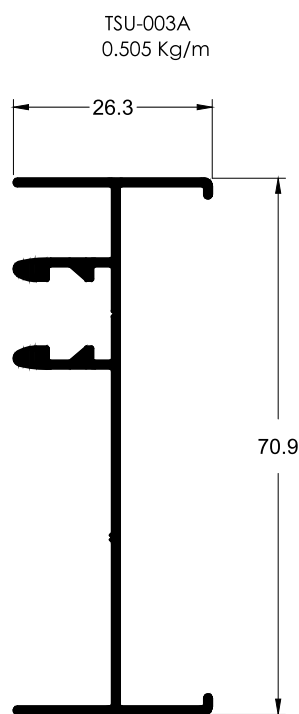
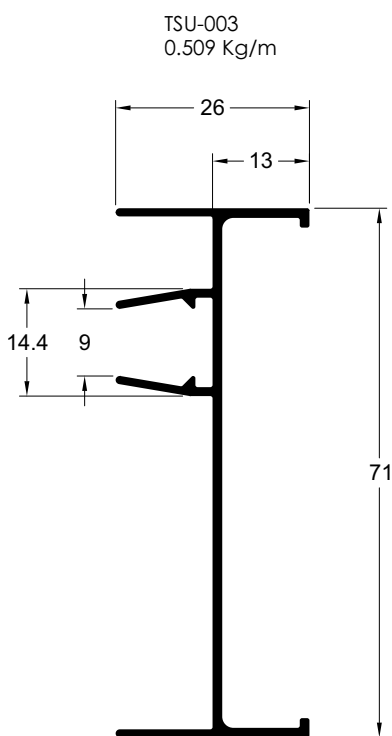
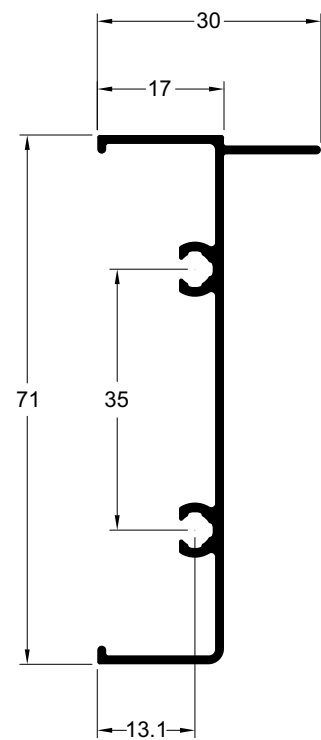


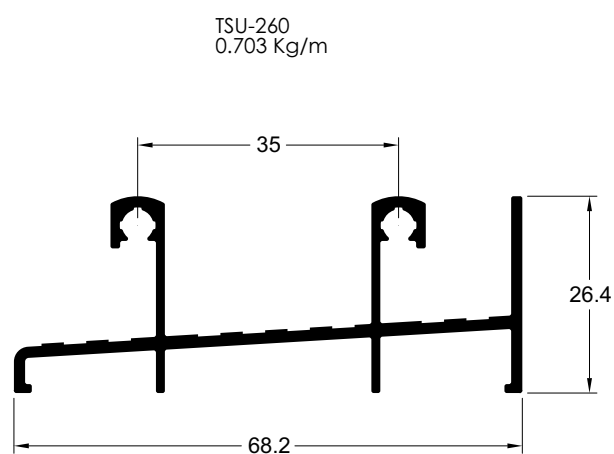
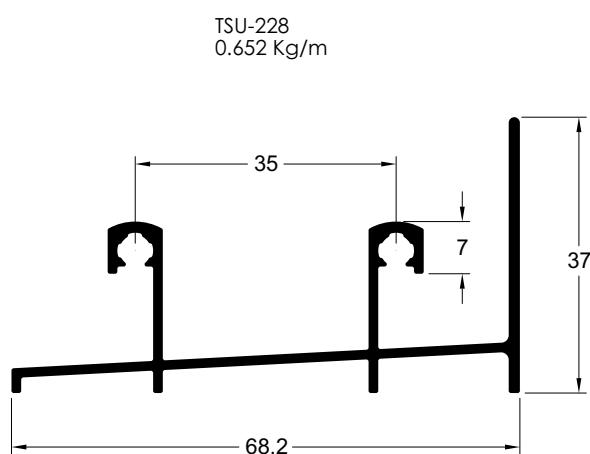
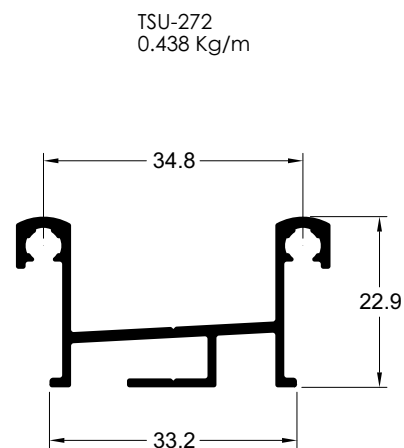
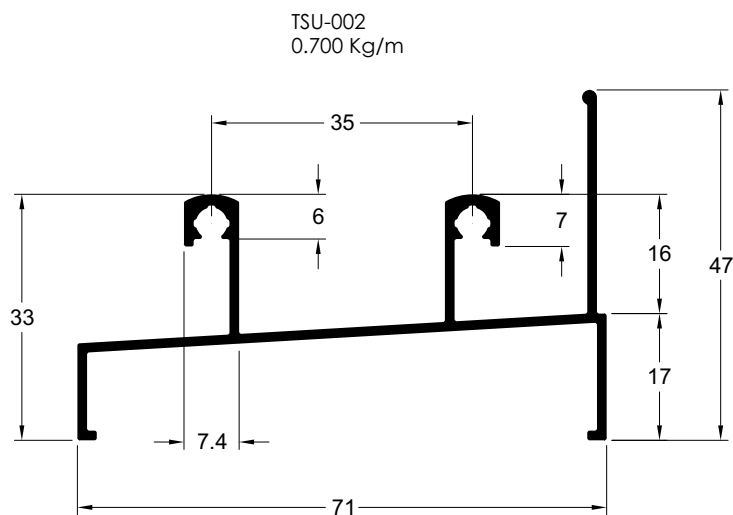
TFC-012
1.204 Kg/m

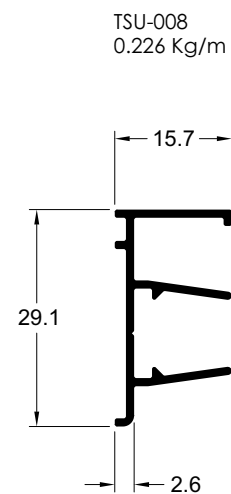
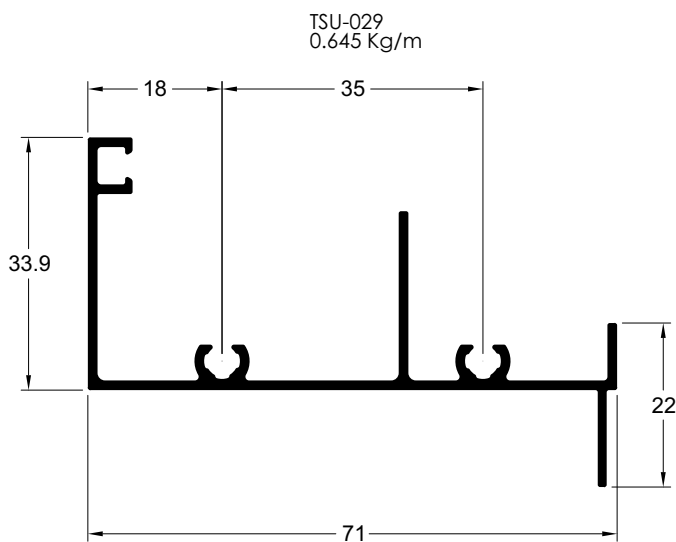
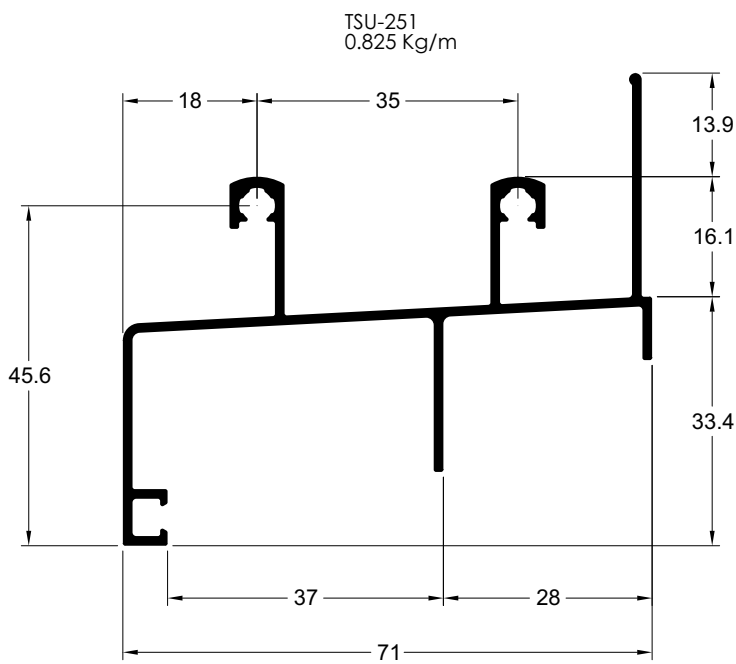
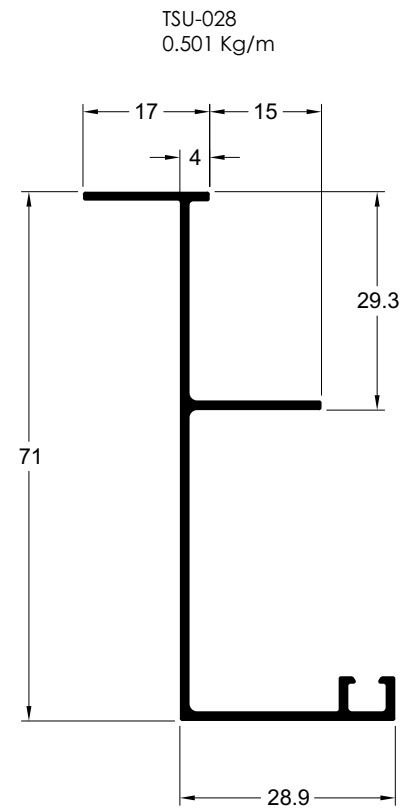
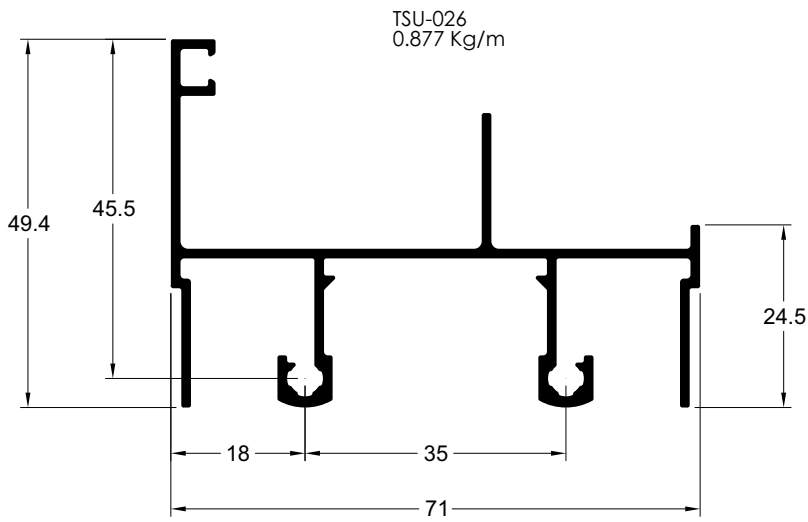




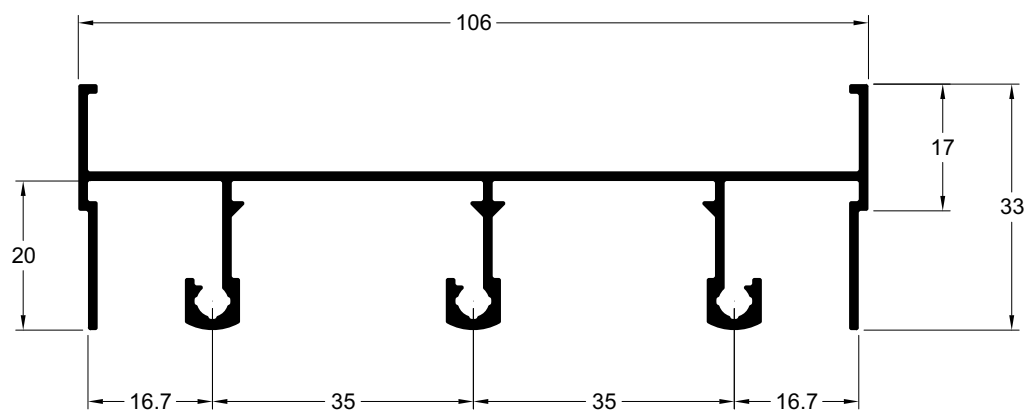
TSU-004
0.475 Kg/m



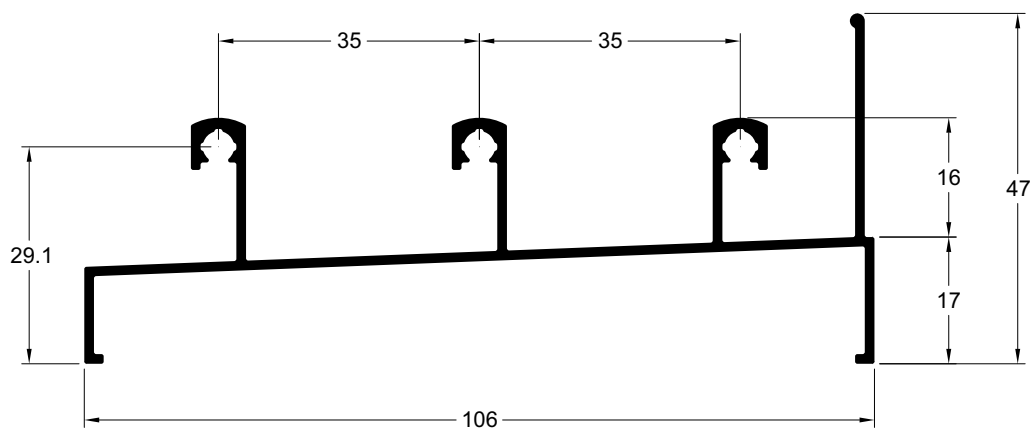




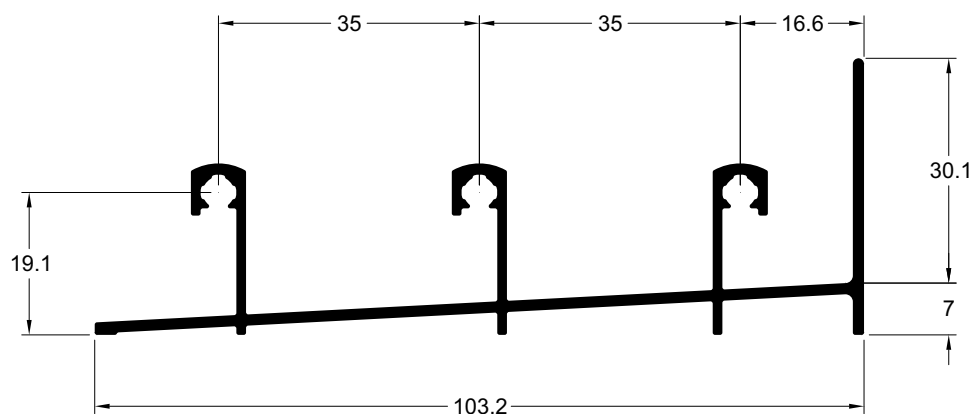
TSU-010
1.024 Kg/m



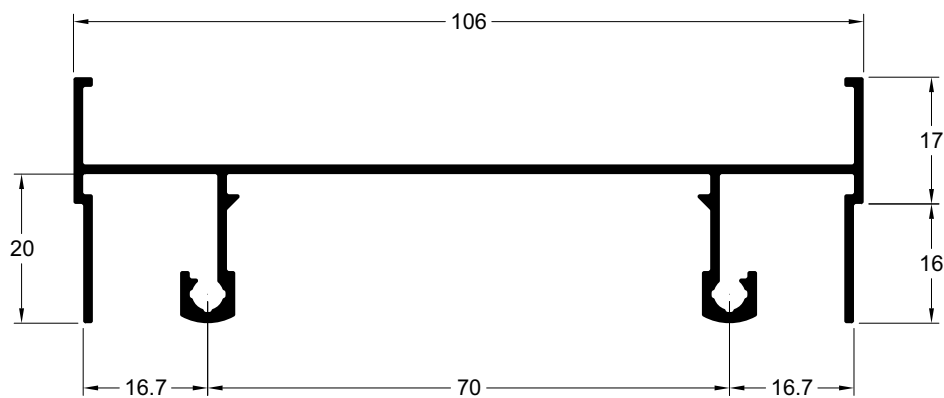
TSU-011
0.941 Kg/m



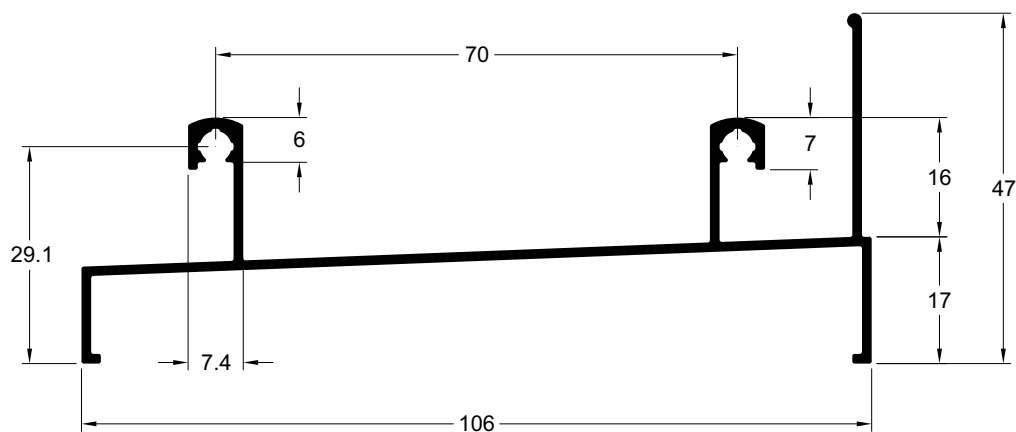
TSU-230
0.954 Kg/m



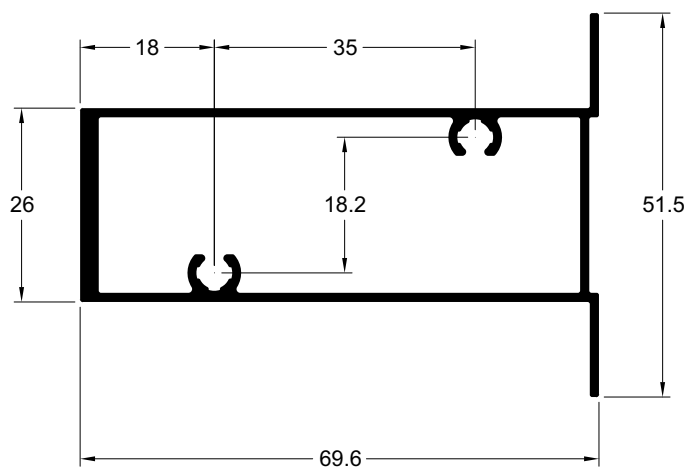
TSU-015
0.883 Kg/m



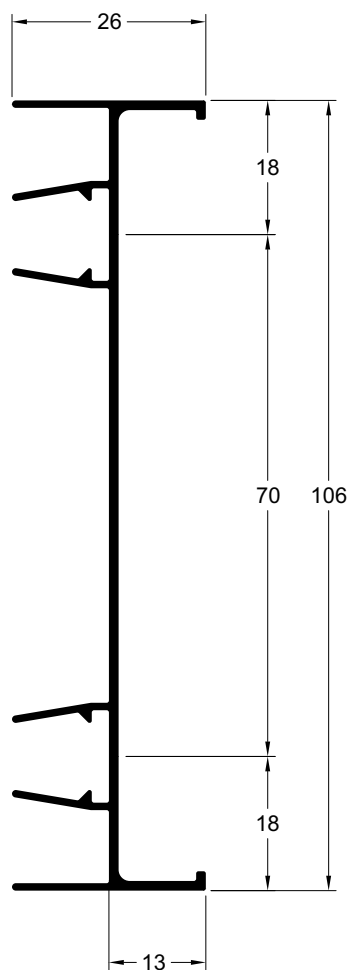
TSU-016
0.823 Kg/m



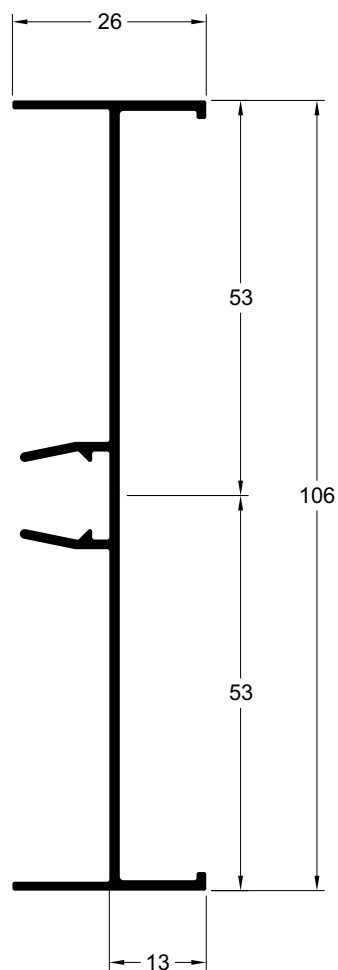
TSU-009
0.881 Kg/m



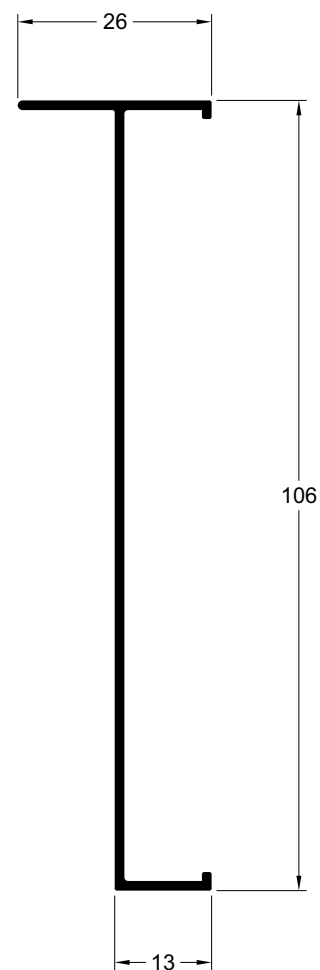
TSU-013
0.699 Kg/m



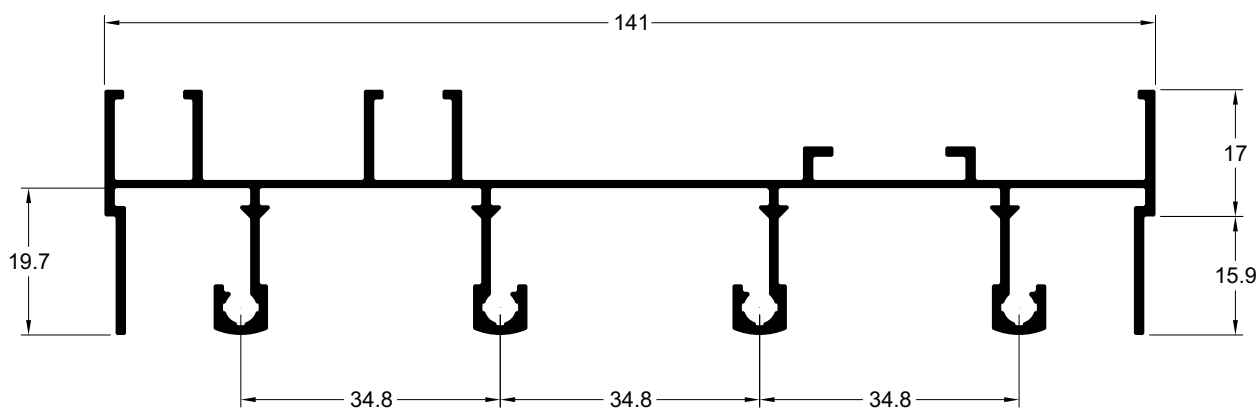
TSU-014
0.675 Kg/m



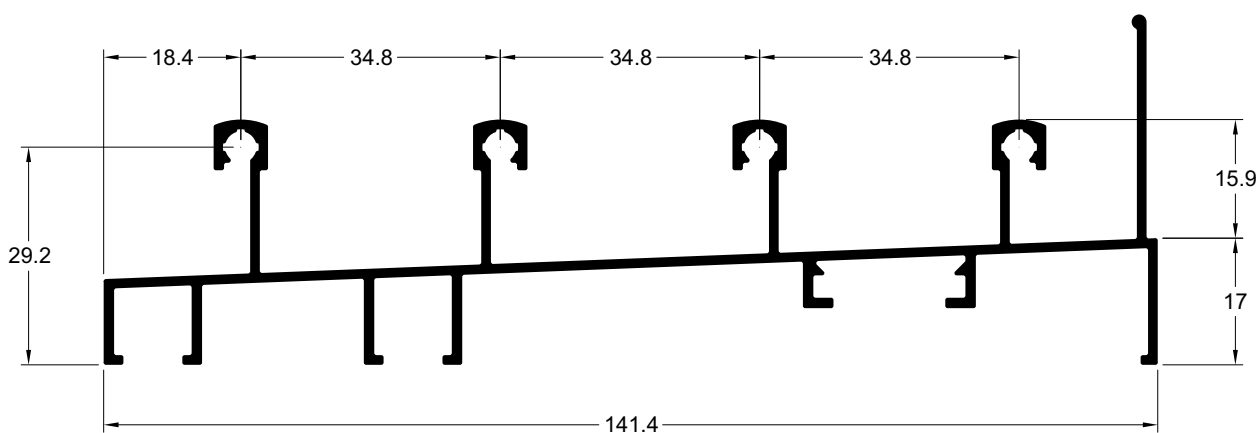
TSU-012
0.509 Kg/m



TSU-121
1.415 Kg/m



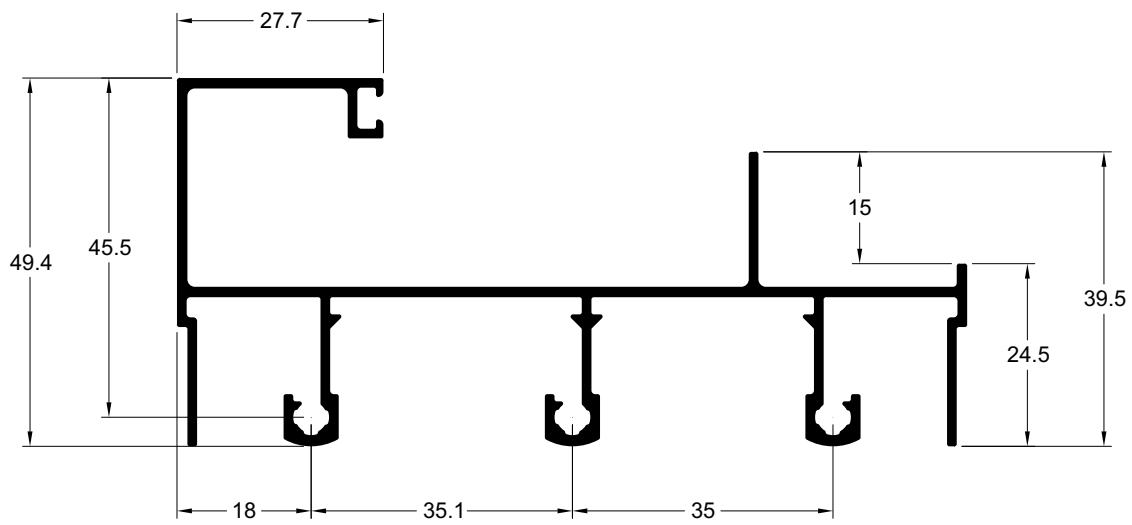
TSU-122
1.414 Kg/m



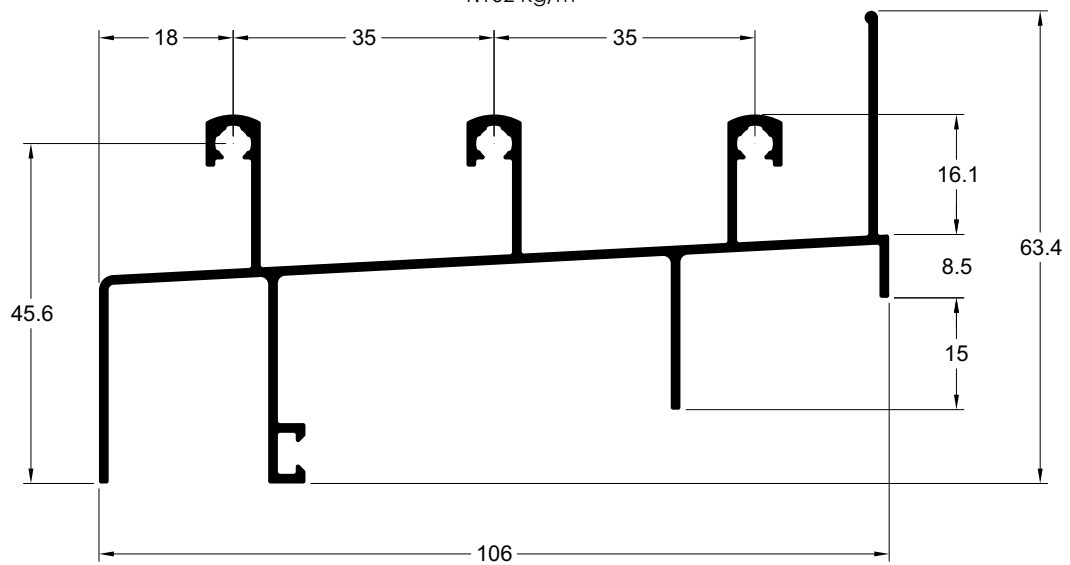
TSU-123
0.970 Kg/m



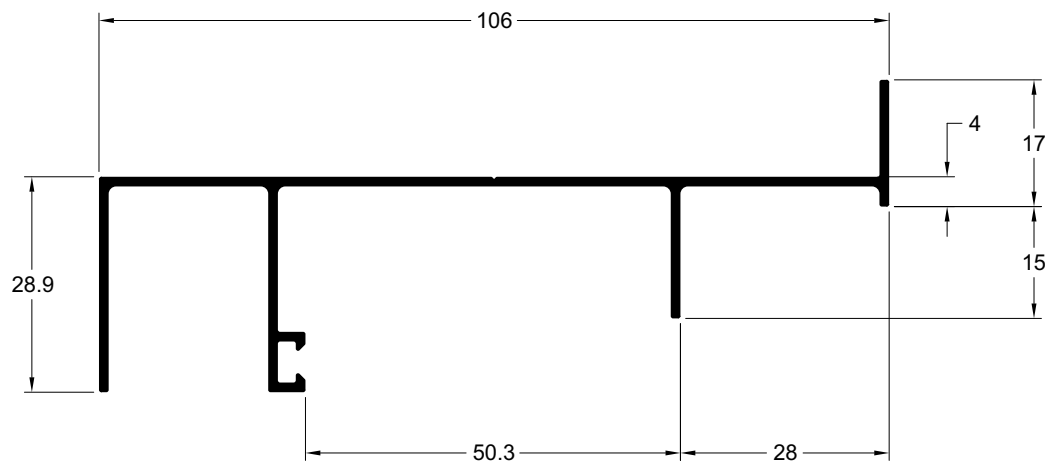
TSU-031
1.278 Kg/m

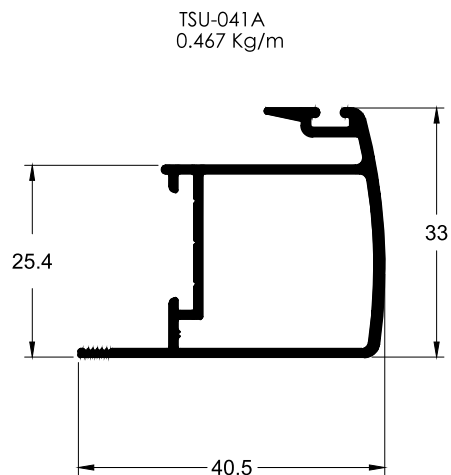
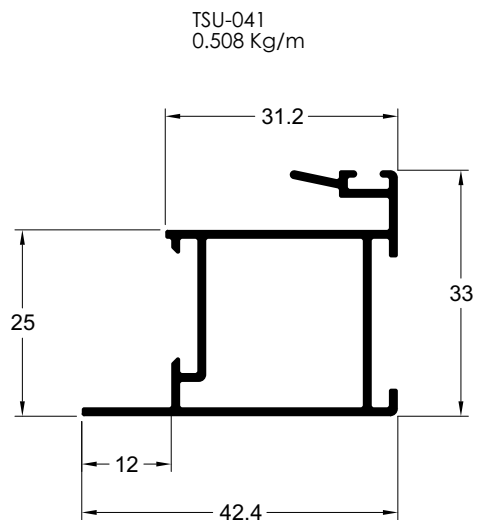
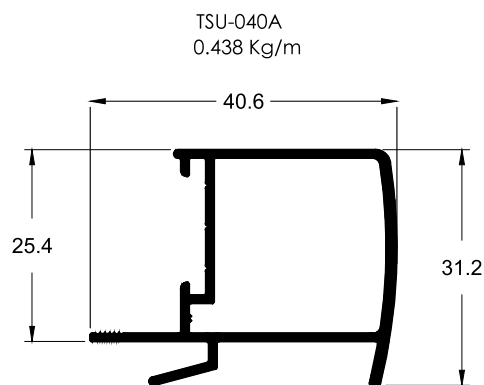
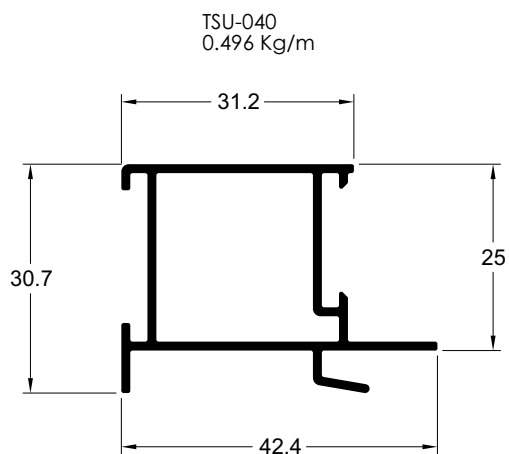
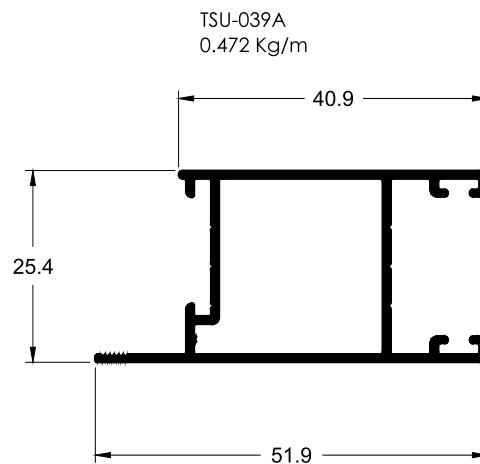
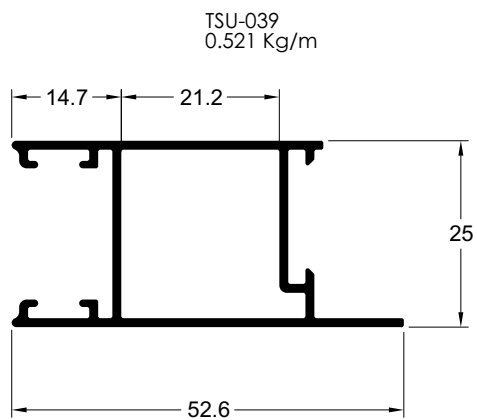


TSU-032
1.162 Kg/m

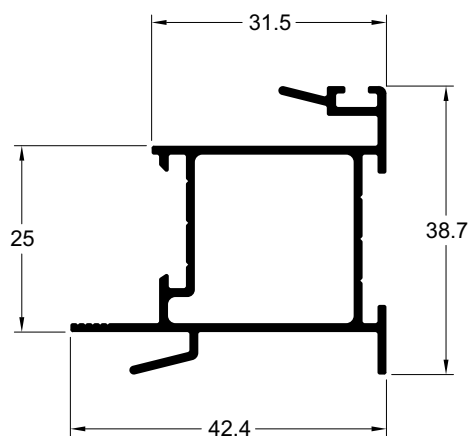


TSU-033
0.721 Kg/m

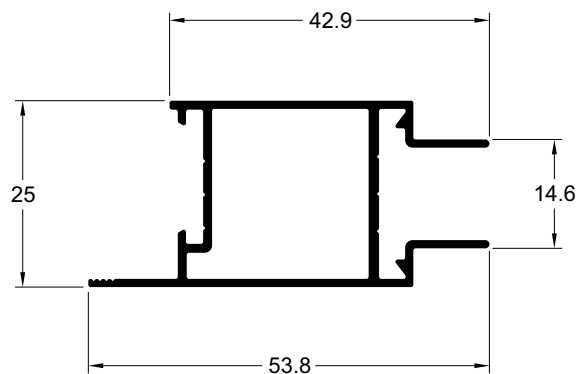




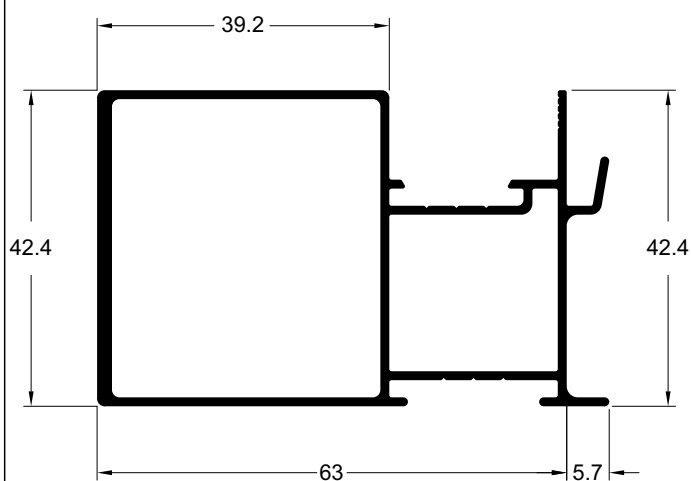
TSU-042
0.570 Kg/m



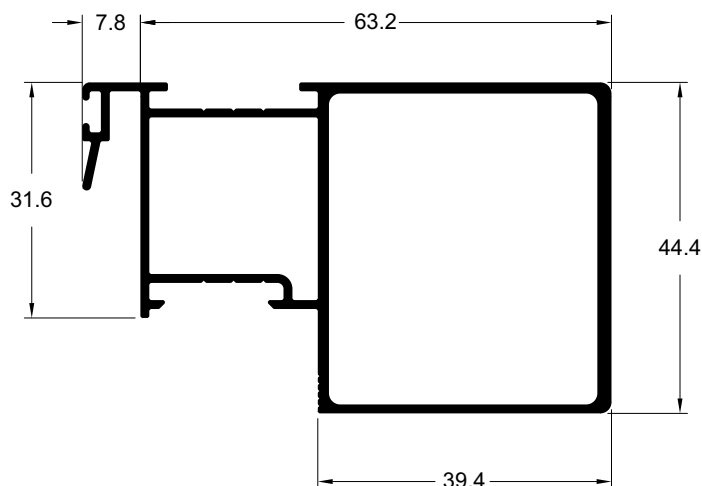
TSU-192
0.507 Kg/m



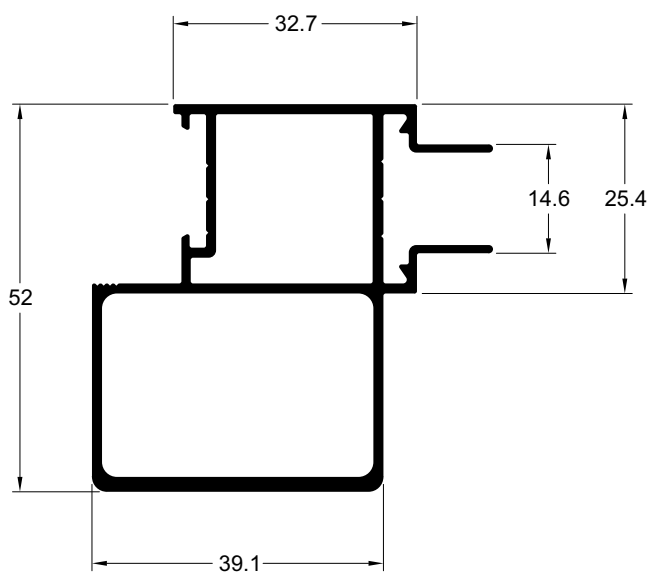
TSU-047
0.981 Kg/m



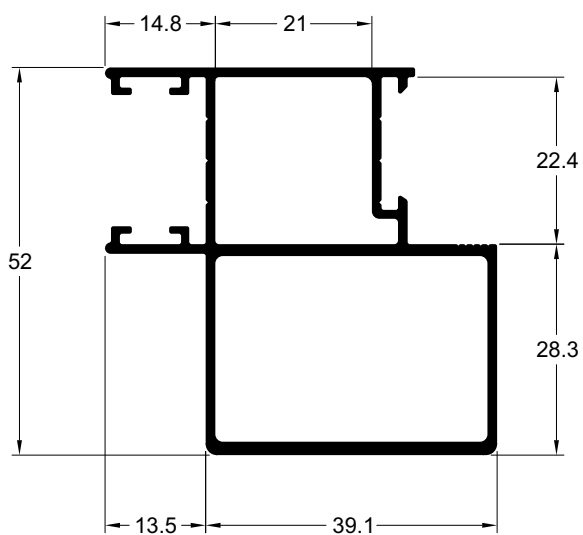
TSU-049
1.043 Kg/m



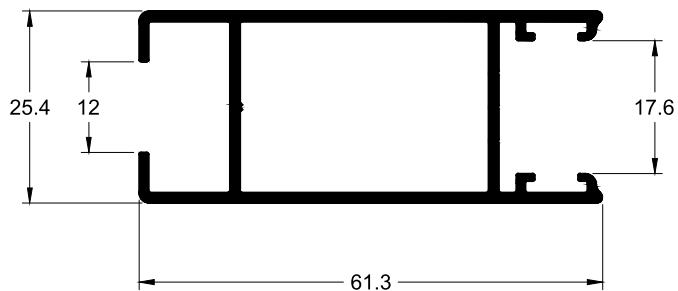
TSU-043
0.967 Kg/m



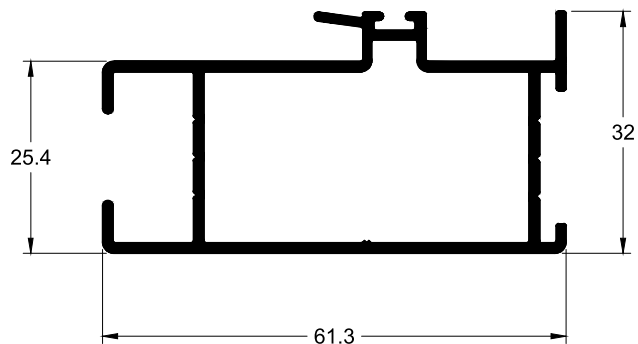
TSU-044
0.956 Kg/m



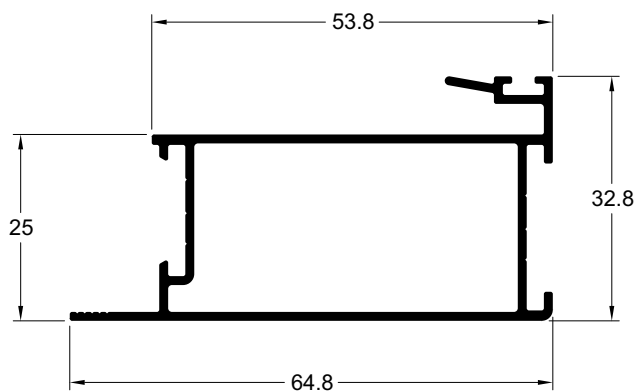
TSU-238
0.714 Kg/m



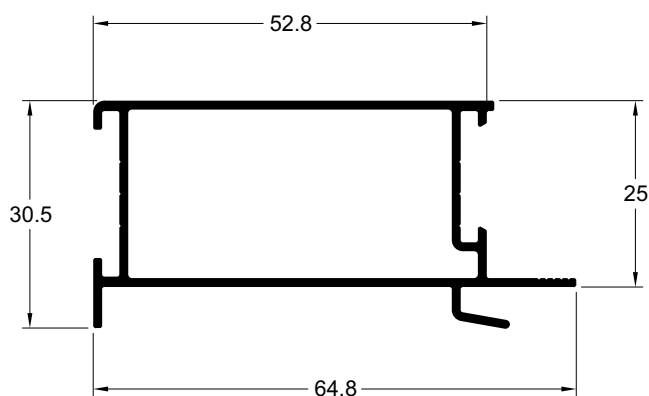
TSU-239
0.783 Kg/m



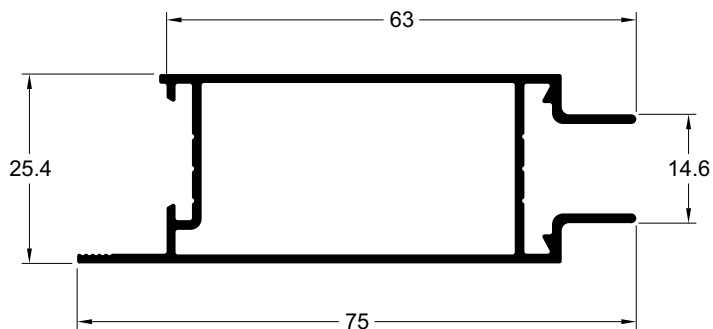
TSU-242
0.659 Kg/m



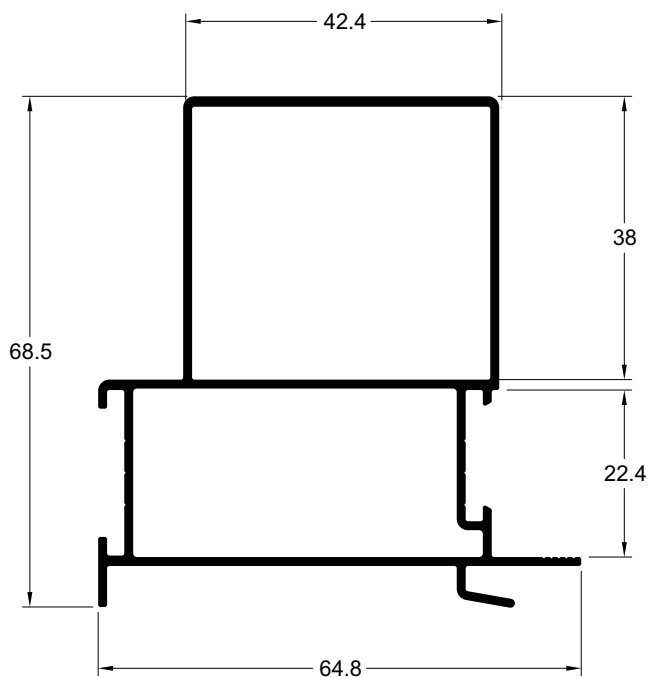
TSU-243
0.628 Kg/m



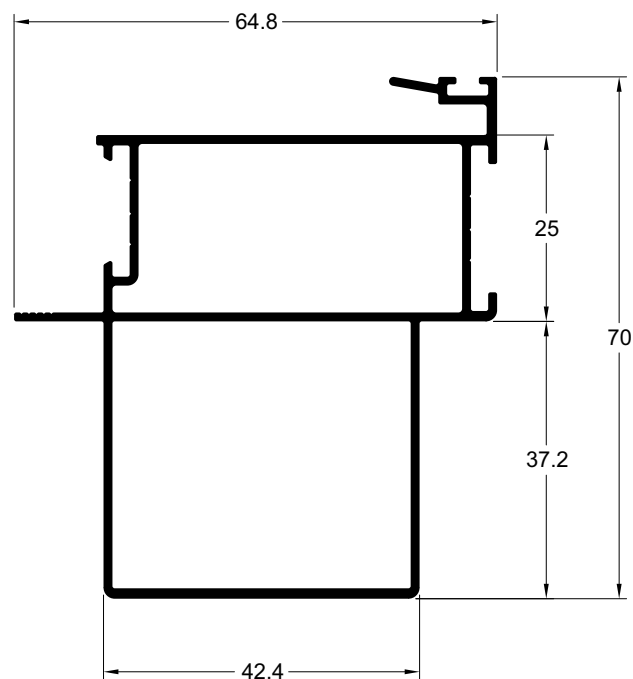
TSU-244
0.693 Kg/m



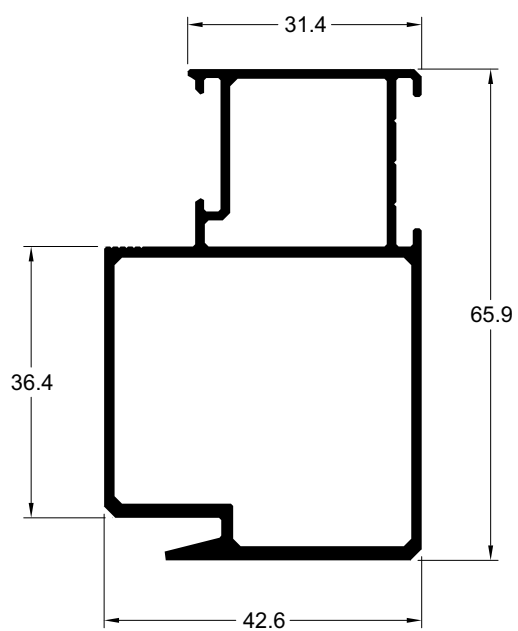
TSU-289
1.025 Kg/m



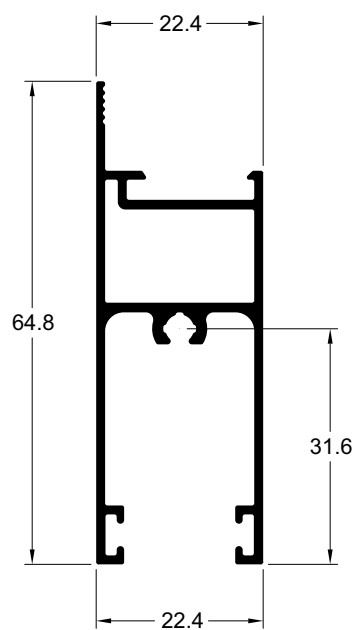
TSU-290
1.053 Kg/m



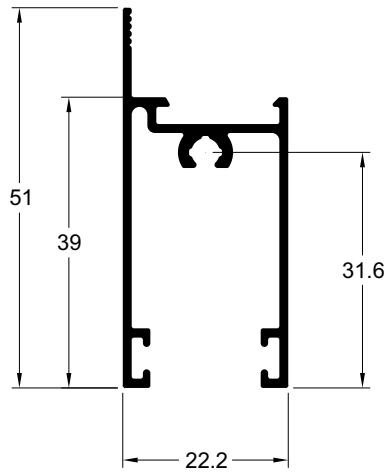
TSU-048
1.039 Kg/m



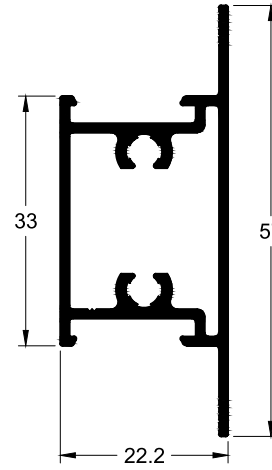
TSU-246
0.645 Kg/m



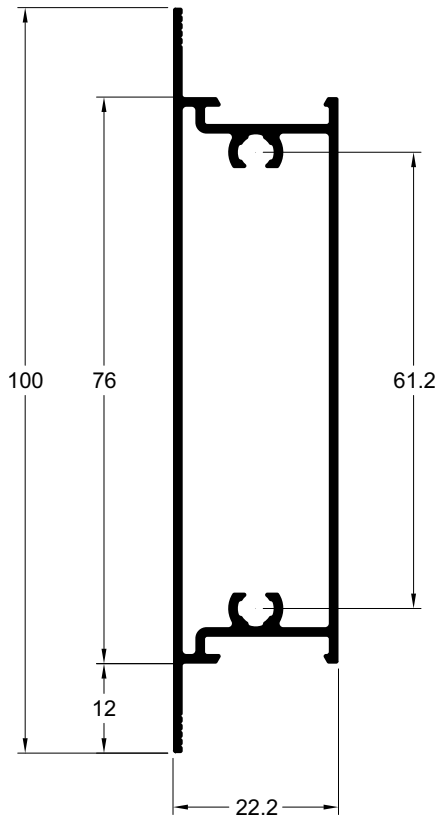
TSU-053
0.475 Kg/m



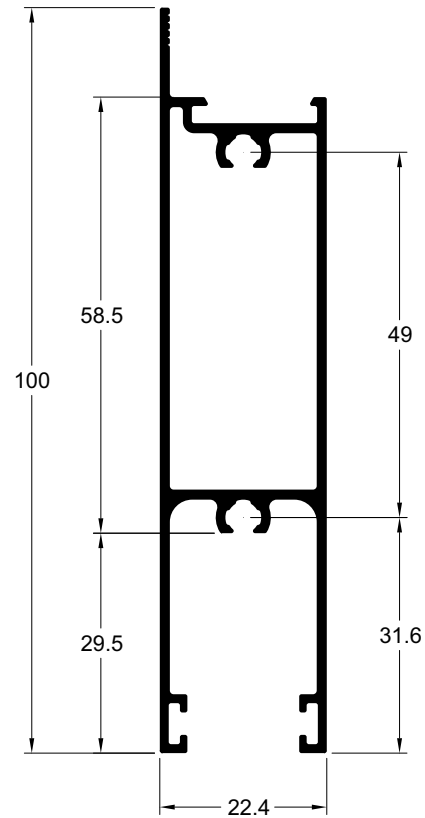
TSU-227
0.555 Kg/m



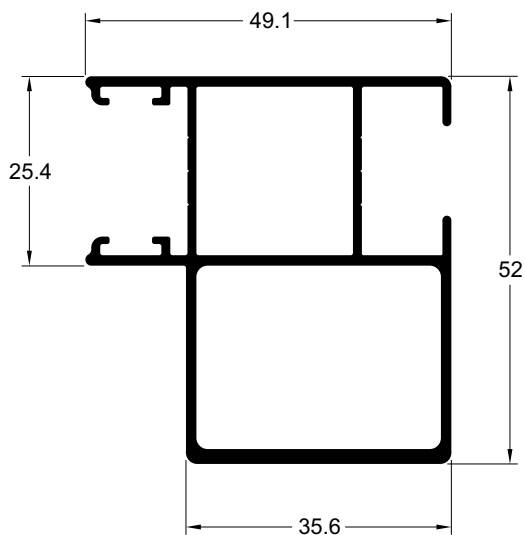
TSU-050
0.885 Kg/m



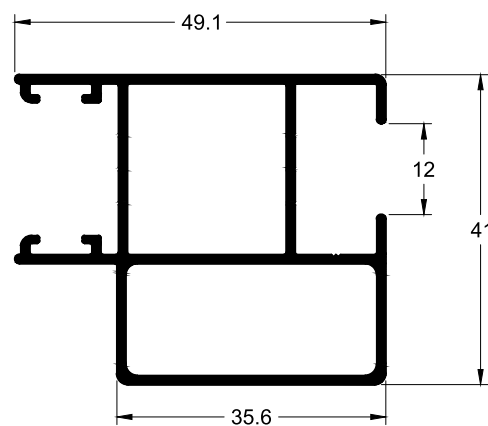
TSU-225
0.990 Kg/m



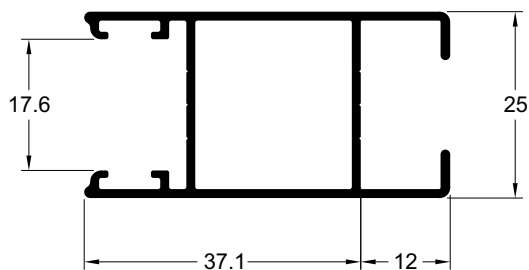
TSU-060
0.978 Kg/m



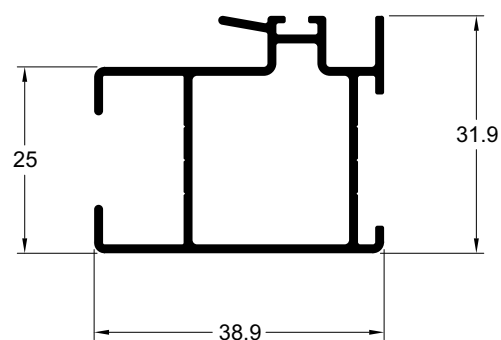
TSU-060A
0.755 Kg/m



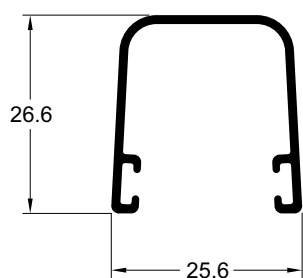
TSU-055
0.542 Kg/m



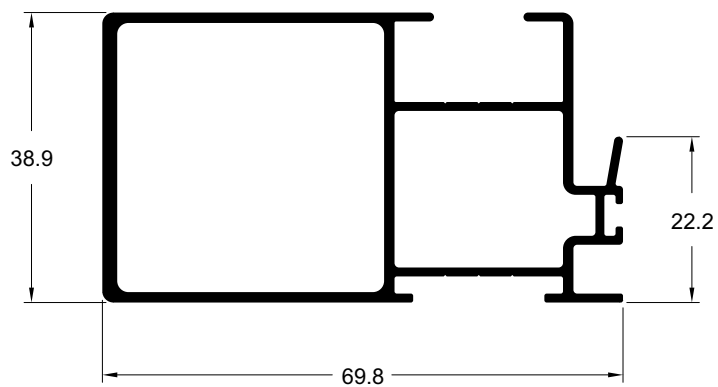
TSU-056
0.538 Kg/m



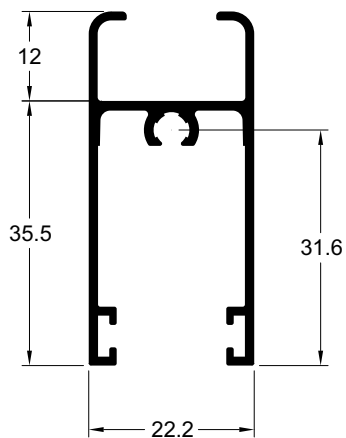
TSU-107
0.271 Kg/m



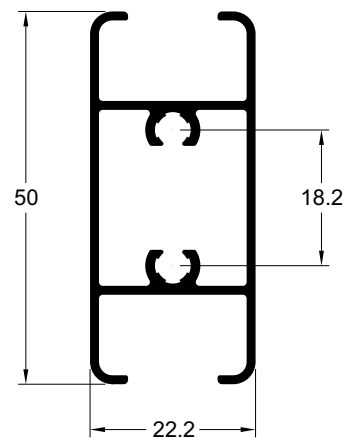
TSU-061
1.062 Kg/m



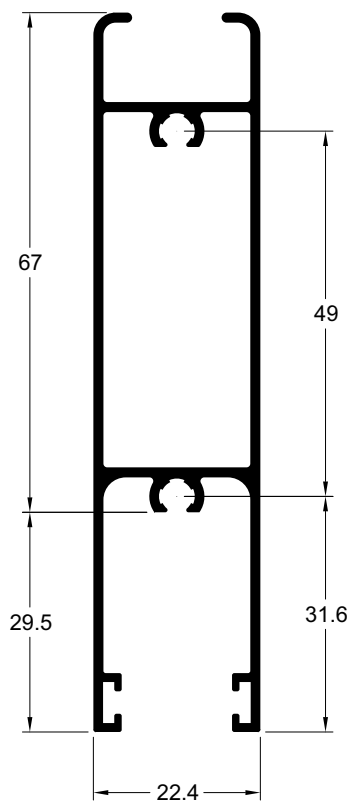
TSU-186
0.506 Kg/m



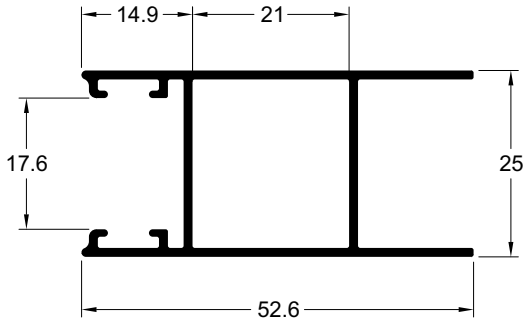
TSU-188
0.586 Kg/m



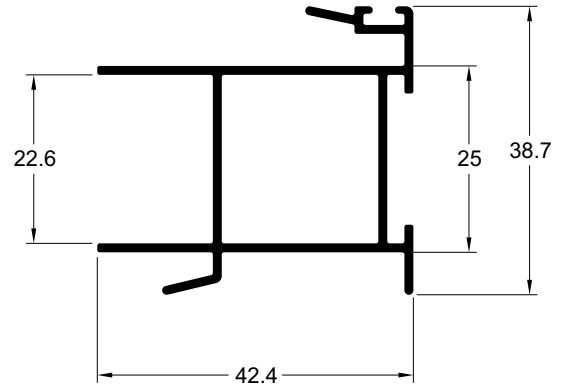
TSU-226
1.014 Kg/m



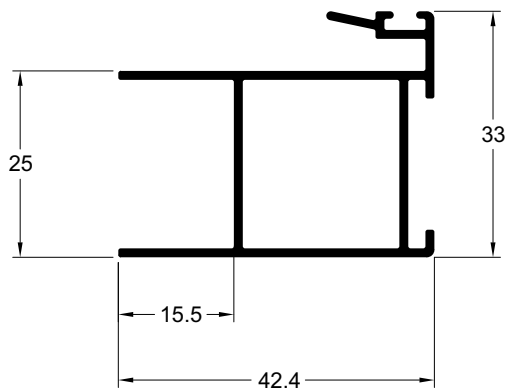
TSU-068
0.534 Kg/m



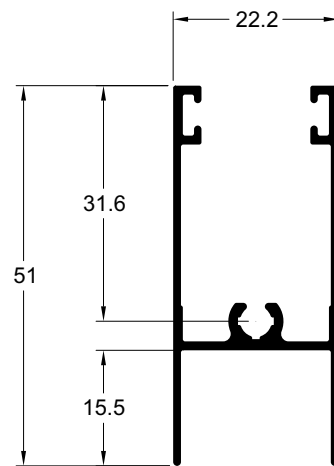
TSU-069
0.576 Kg/m



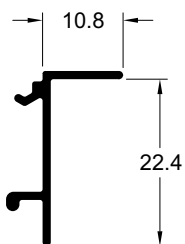
TSU-070
0.521 Kg/m



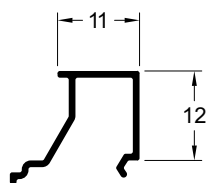
TSU-187
0.471 Kg/m



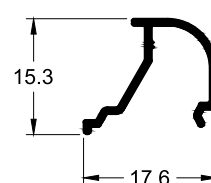
TSU-108
0.135 Kg/m



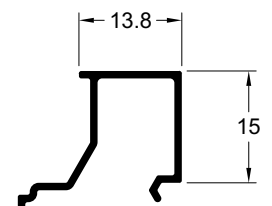
TSU-102
0.109 Kg/m

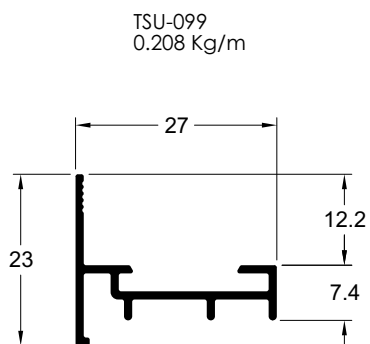
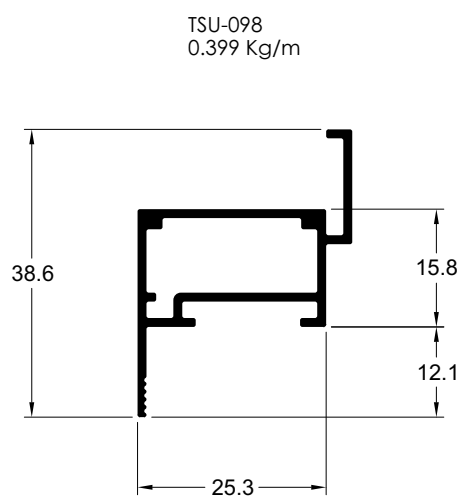
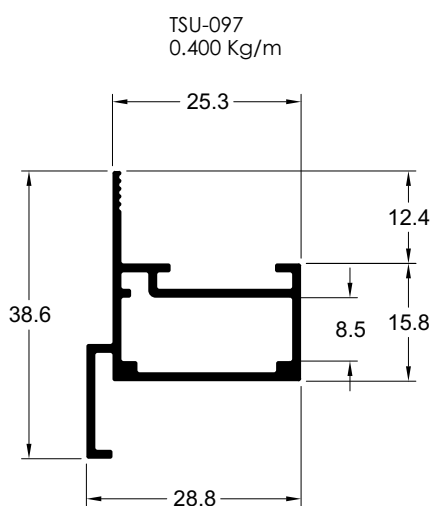
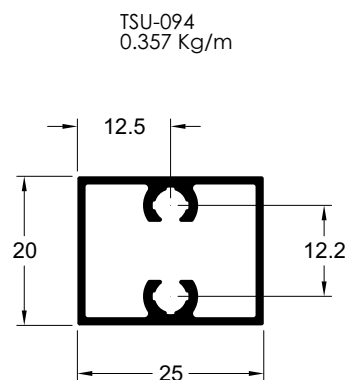
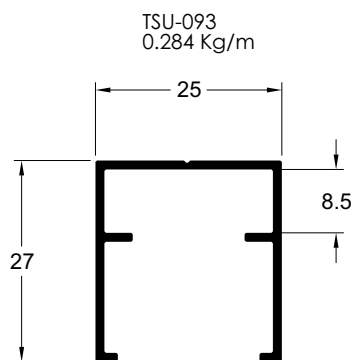


TSU-102A
0.104 Kg/m

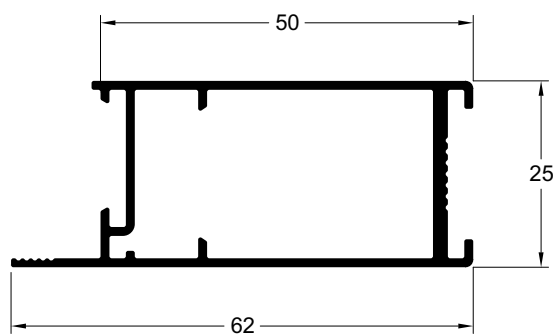


TSU-103
0.155 Kg/m

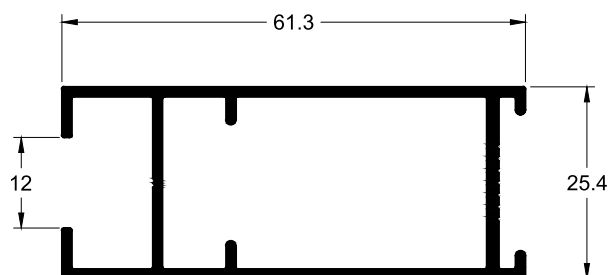




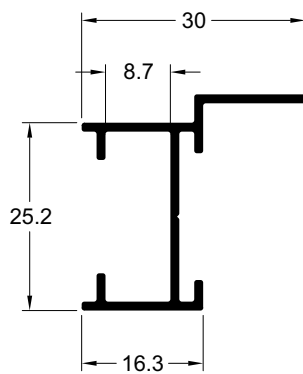
TSU-111
0.617 Kg/m



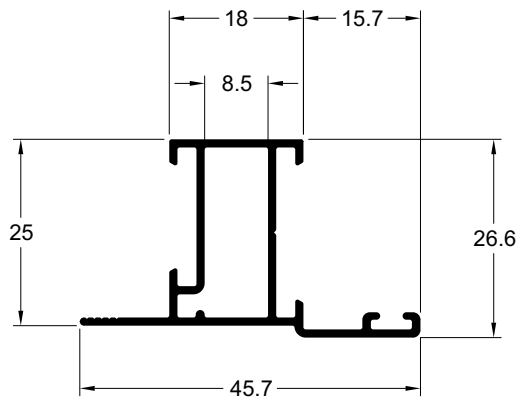
TSU-241
0.688 Kg/m



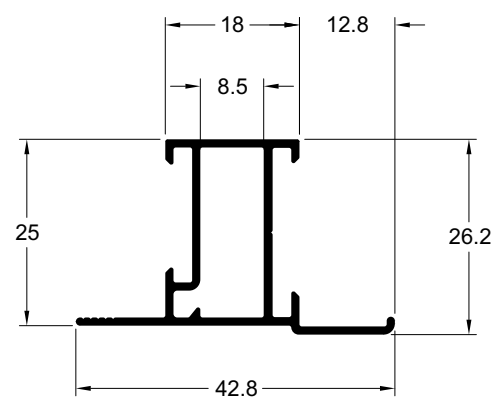
TSU-071
0.280 Kg/m



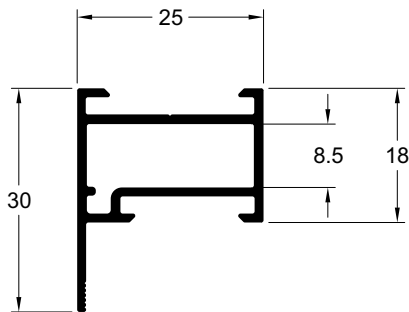
TSU-200
0.386 Kg/m



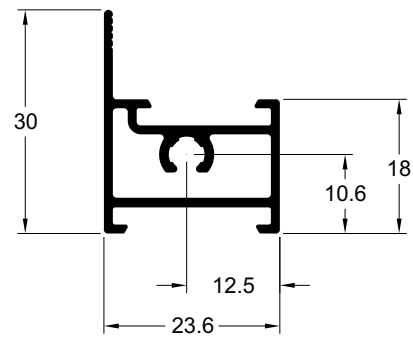
TSU-081
0.368 Kg/m



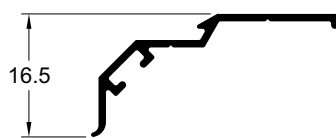
TSU-080
0.357 Kg/m



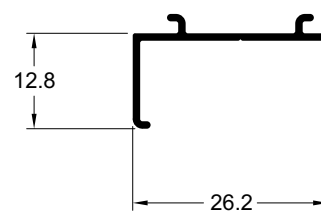
TSU-082
0.382 Kg/m



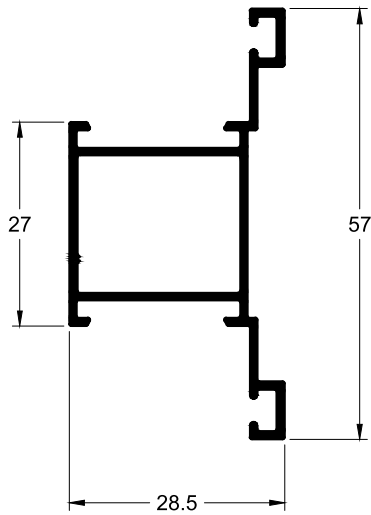
TSU-083
0.143 Kg/m



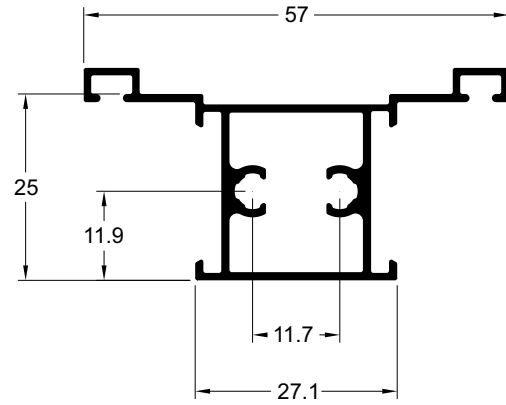
TSU-084
0.125 Kg/m



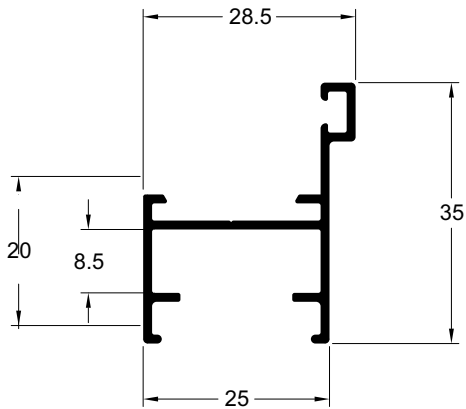
TSU-085
0.437 Kg/m



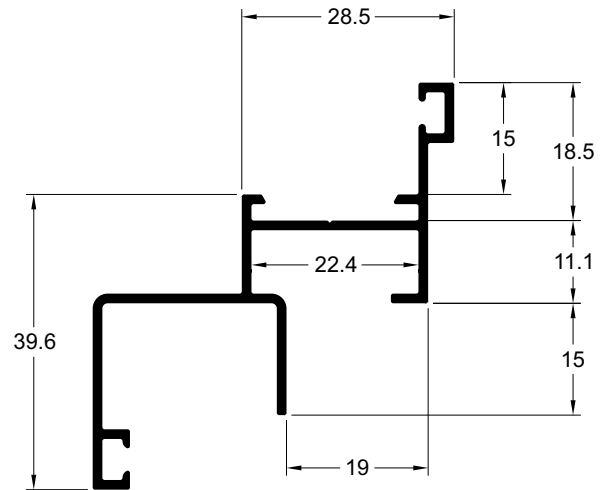
TSU-086
0.543 Kg/m



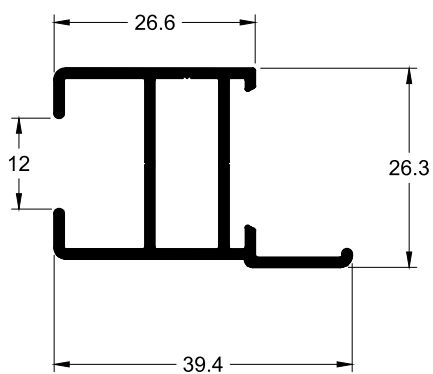
TSU-079
0.329 Kg/m



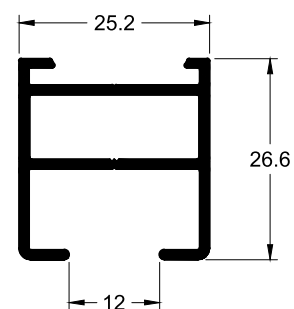
TSU-030
0.551 Kg/m



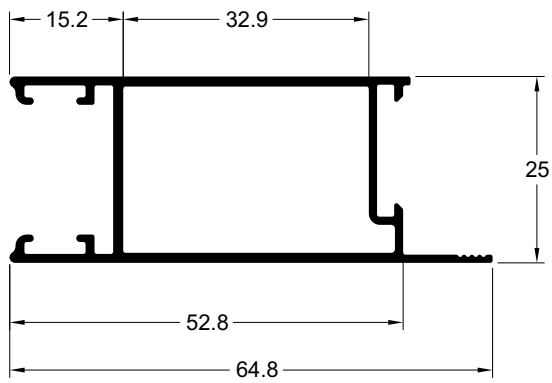
TSU-090
0.447 Kg/m



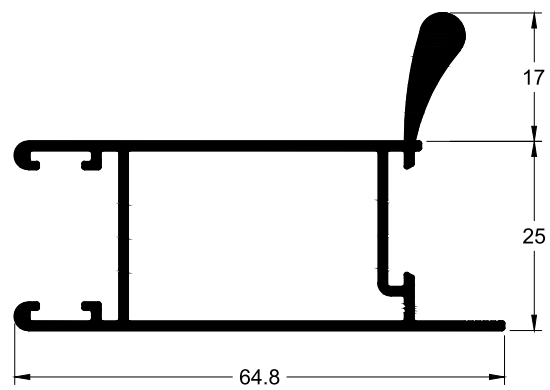
TSU-091
0.402 Kg/m



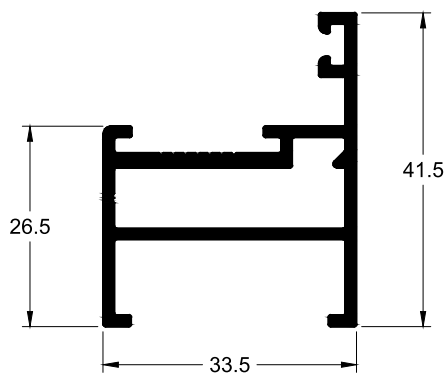
TSU-245
0.623 Kg/m



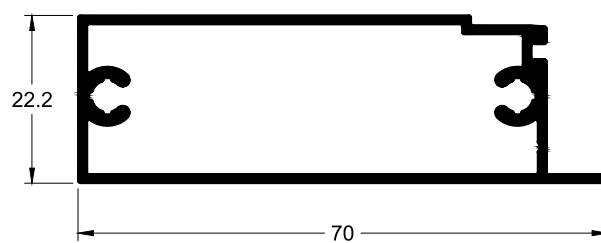
TSU-245A
0.780 Kg/m



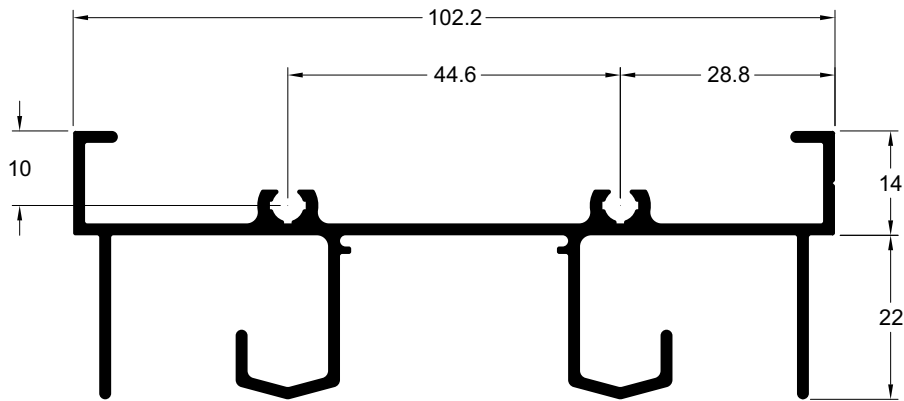
TSU-279
0.648 Kg/m



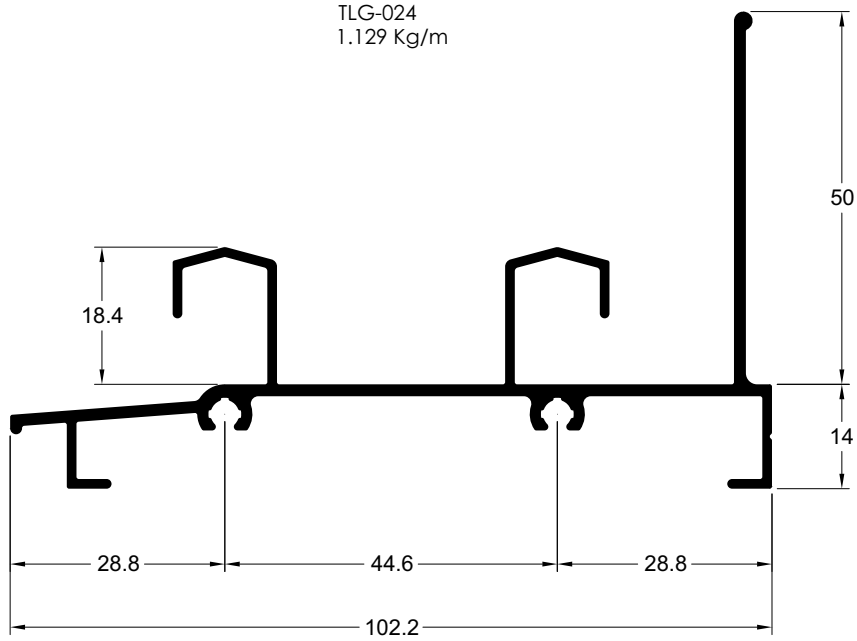
TSU-073A
0.694 Kg/m



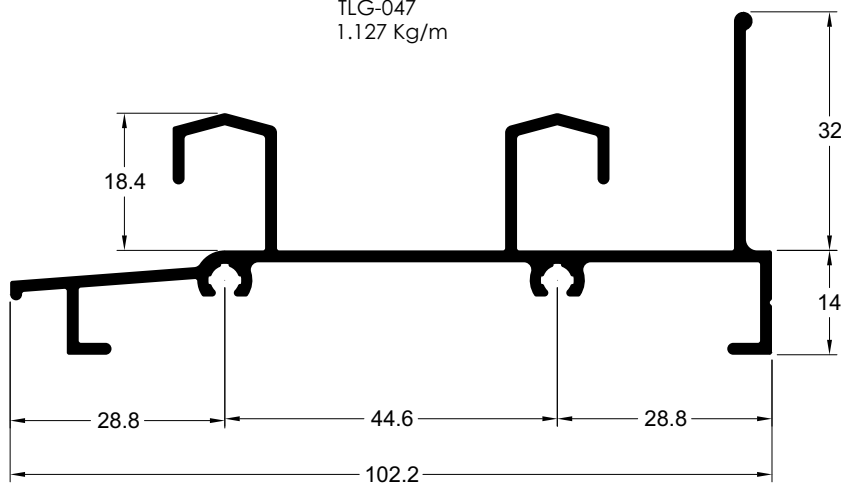
TLG-044
1.245 Kg/m



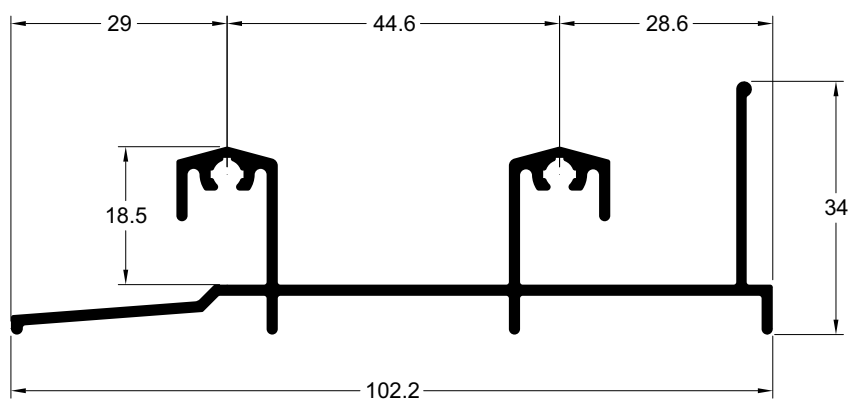
TLG-024
1.129 Kg/m



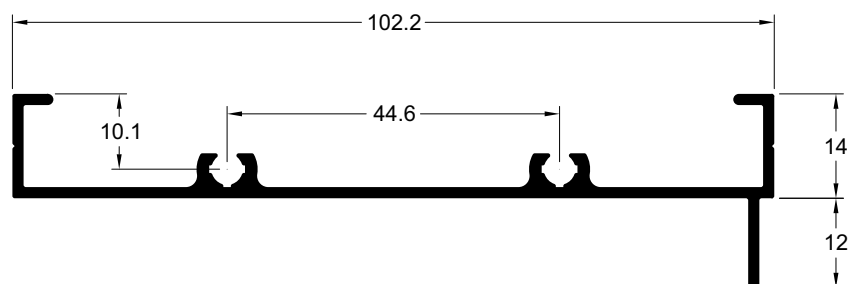
TLG-047
1.127 Kg/m



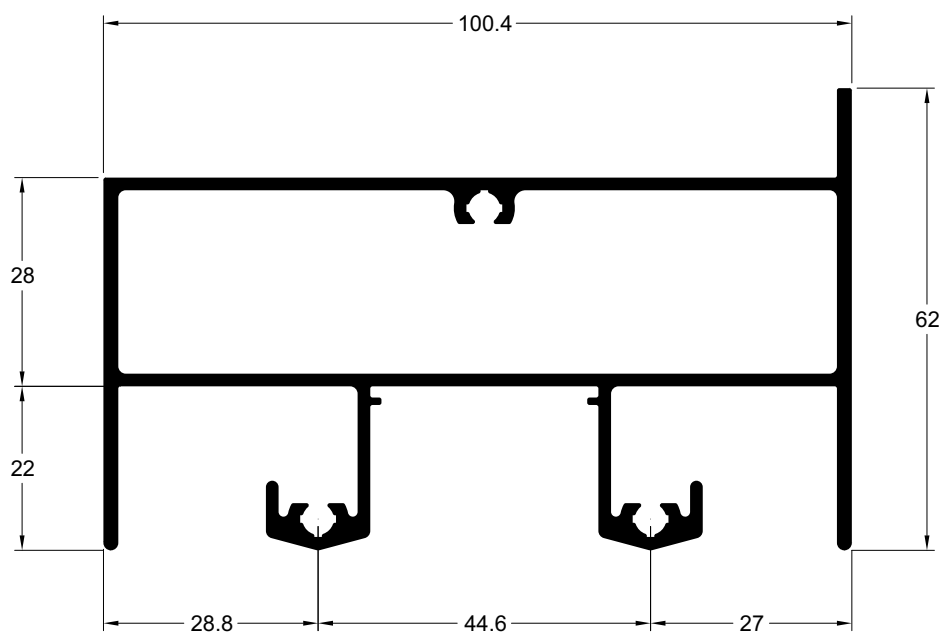
TLG-610
0.967 Kg/m

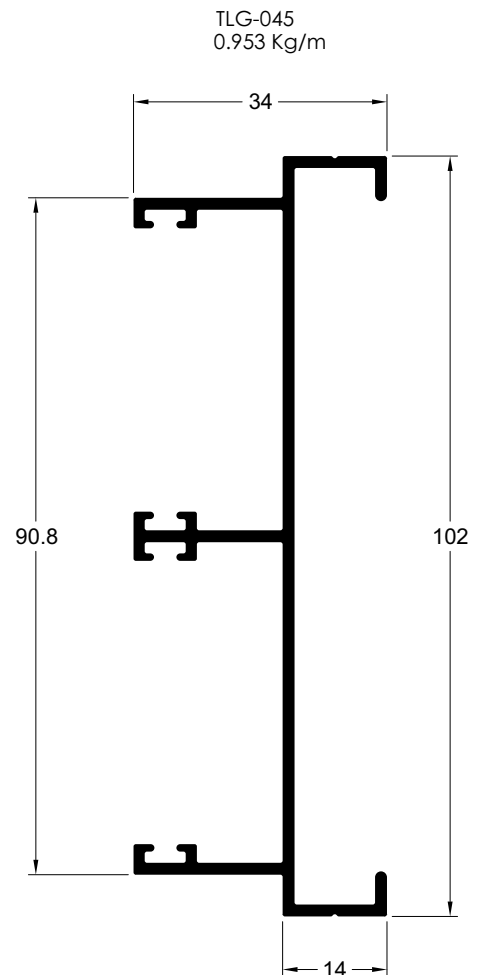
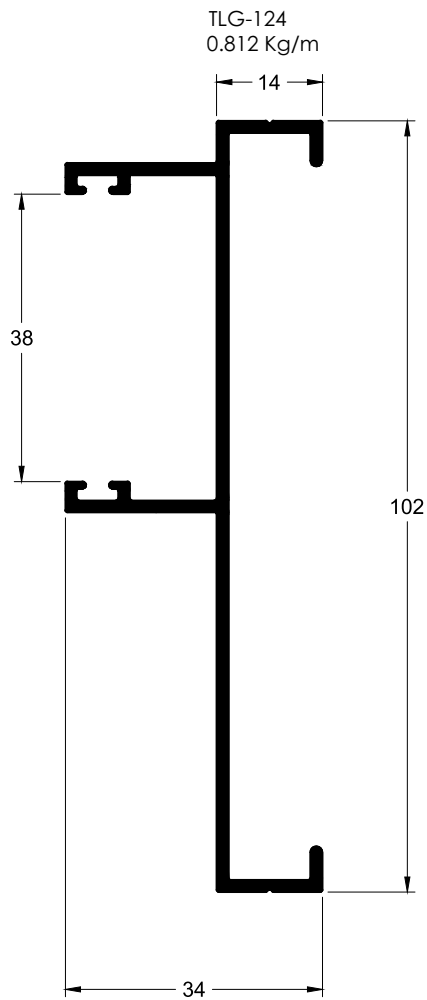
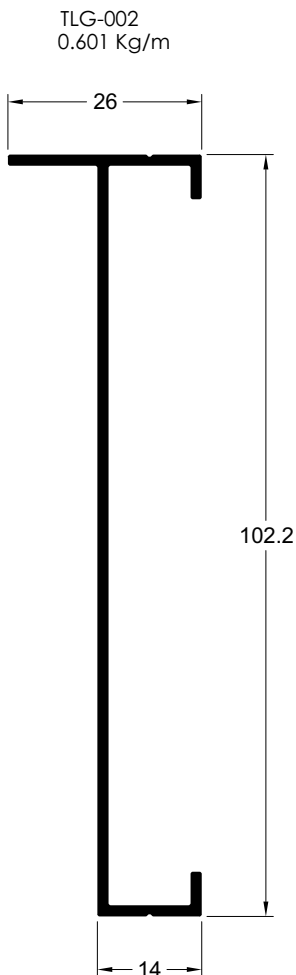
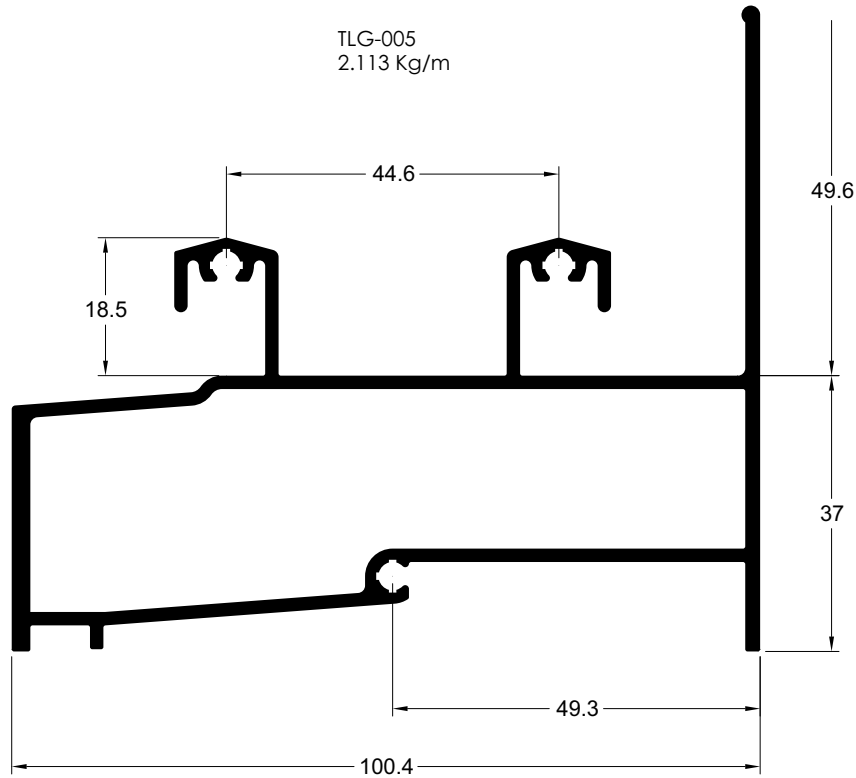


TLG-003
0.714 Kg/m

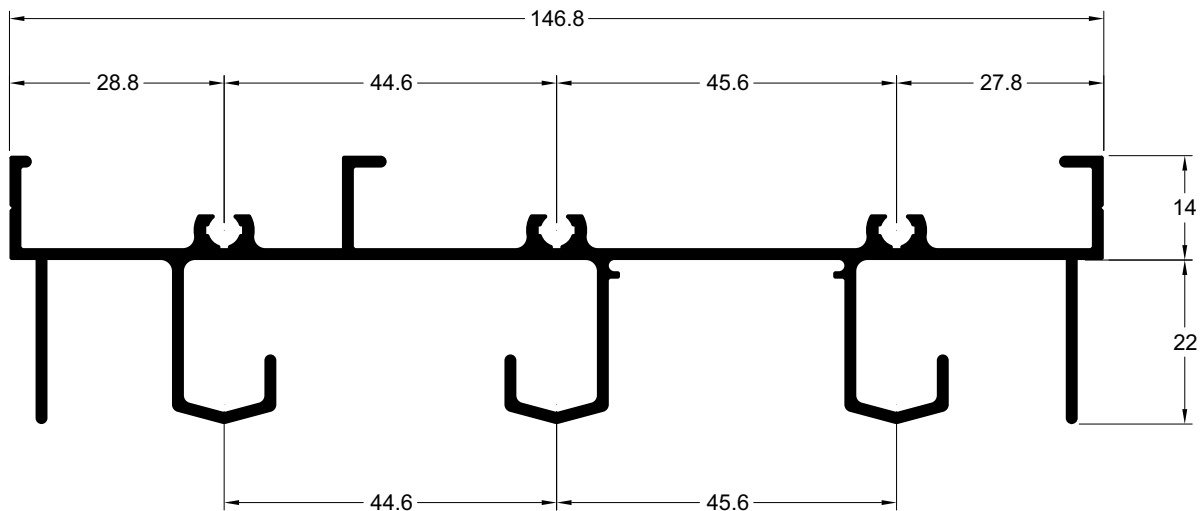


TLG-004
2.035 Kg/m

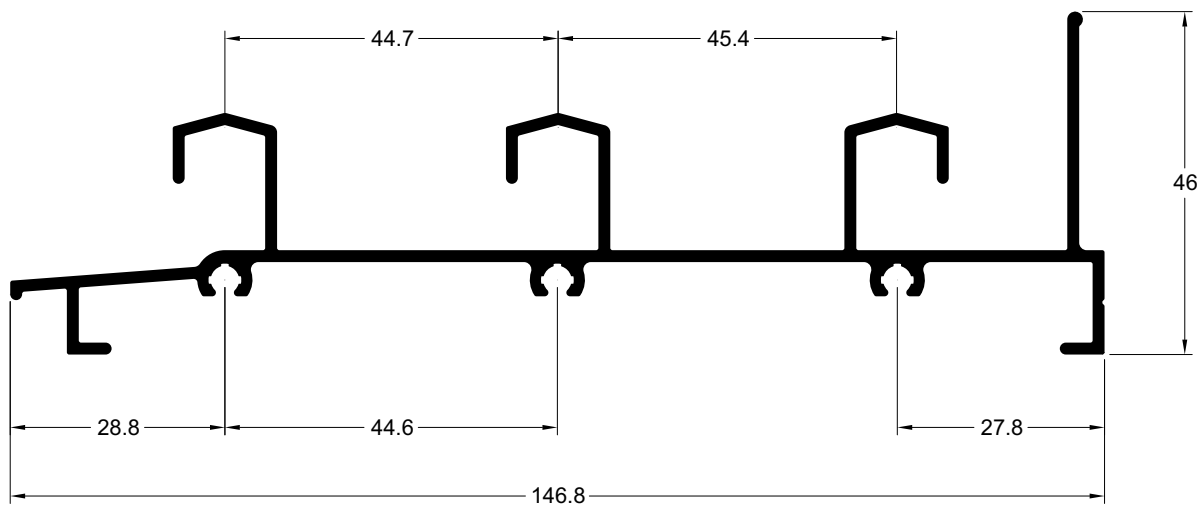




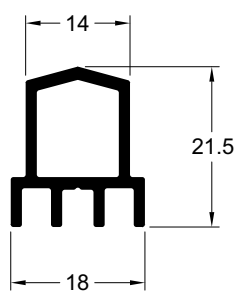
TLG-062
1.728 Kg/m



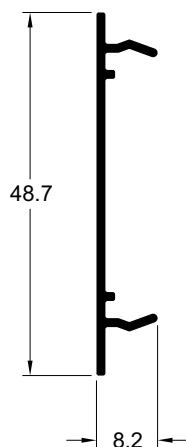
TLG-066
1.523 Kg/m



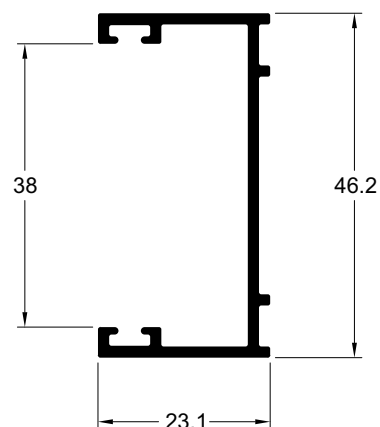
TLG-061
0.319 Kg/m



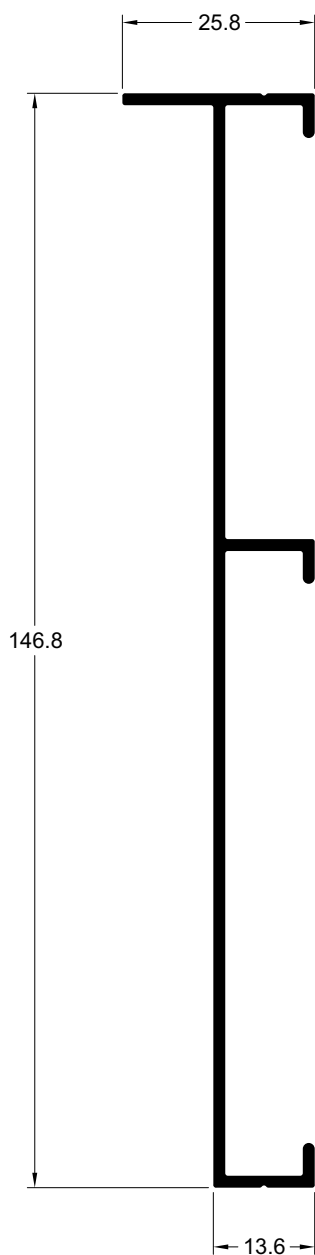
TLG-046
0.213 Kg/m



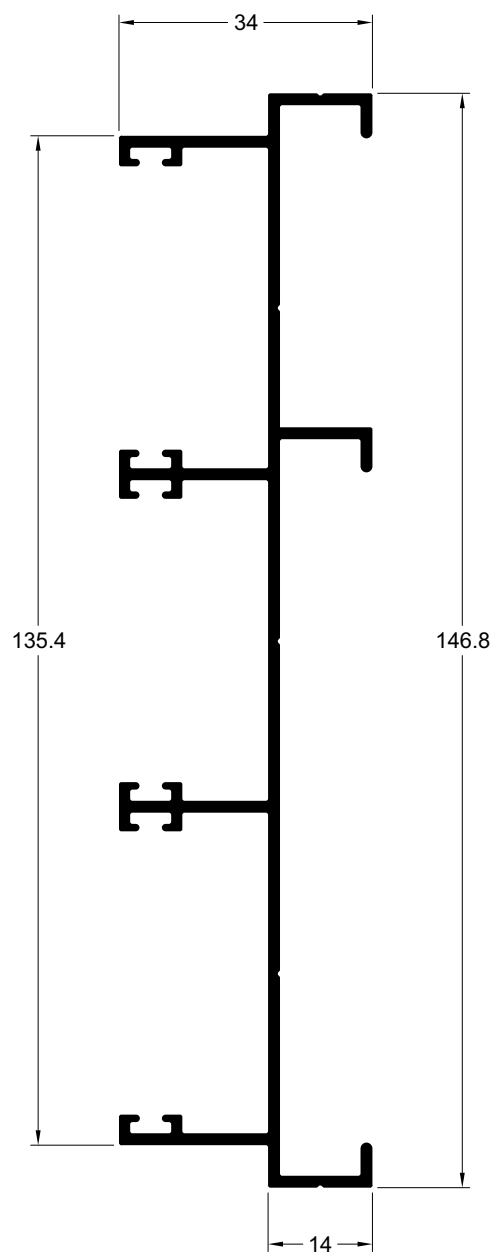
TLG-028
0.433 Kg/m



TLG-158
0.899 Kg/m

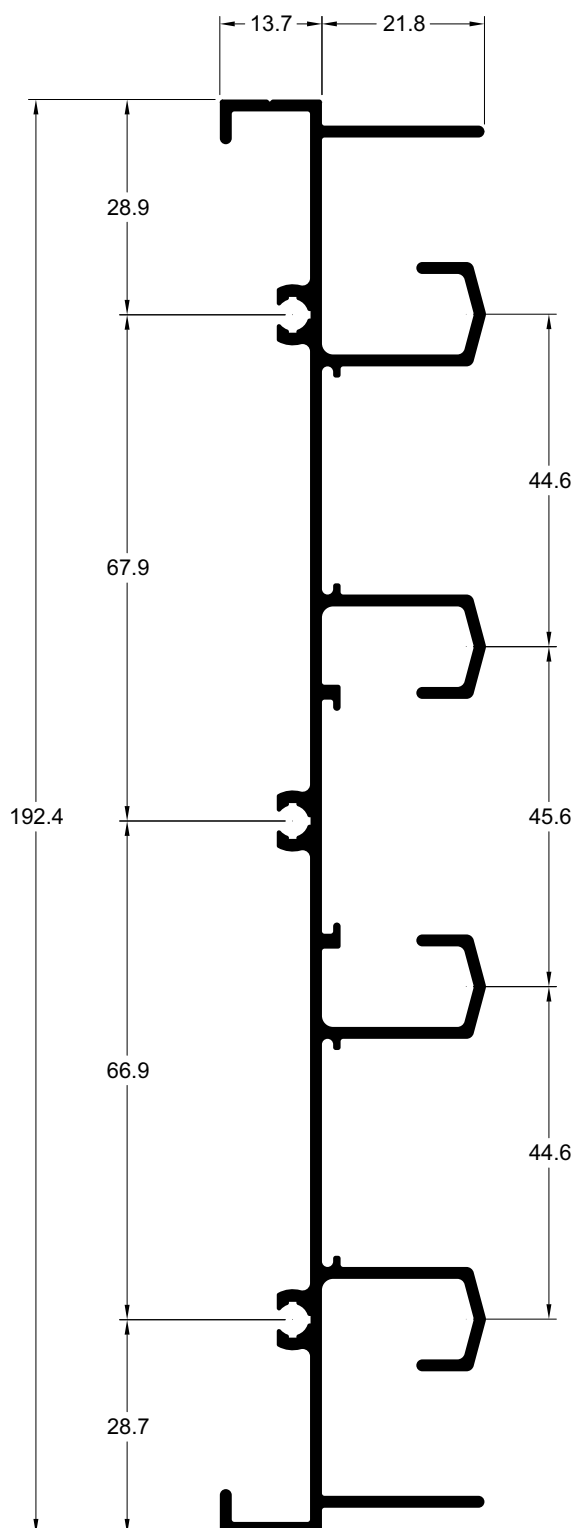


TLG-064
1.358 Kg/m

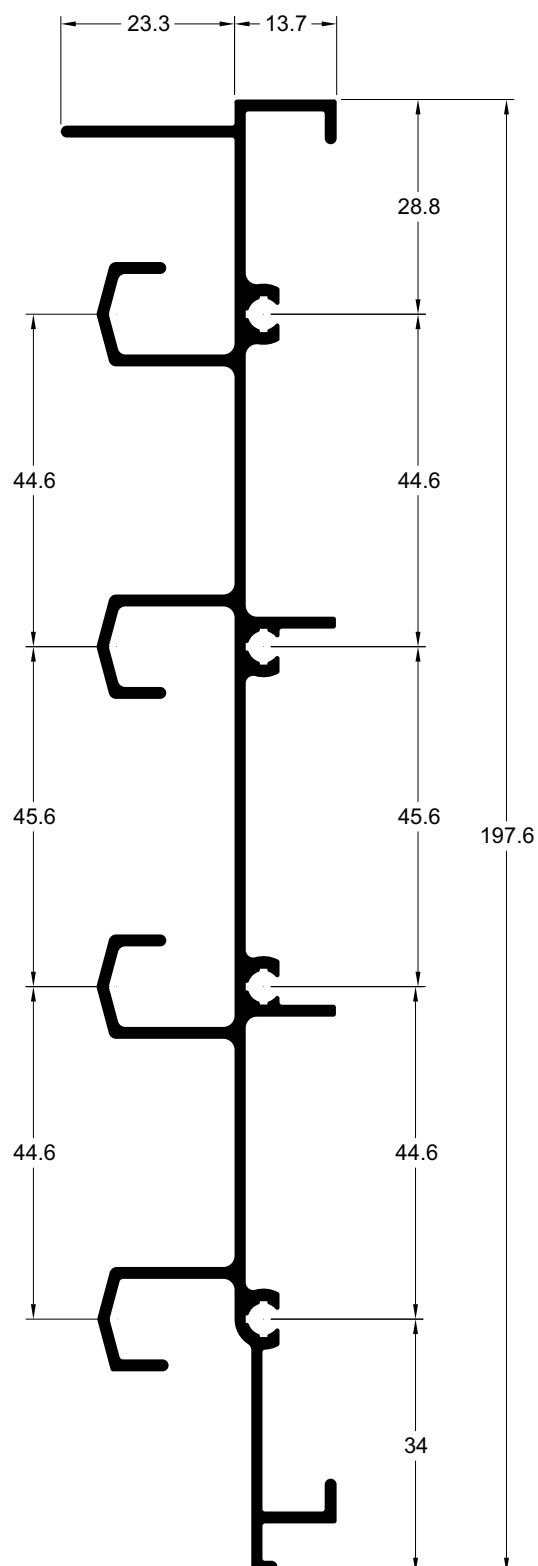




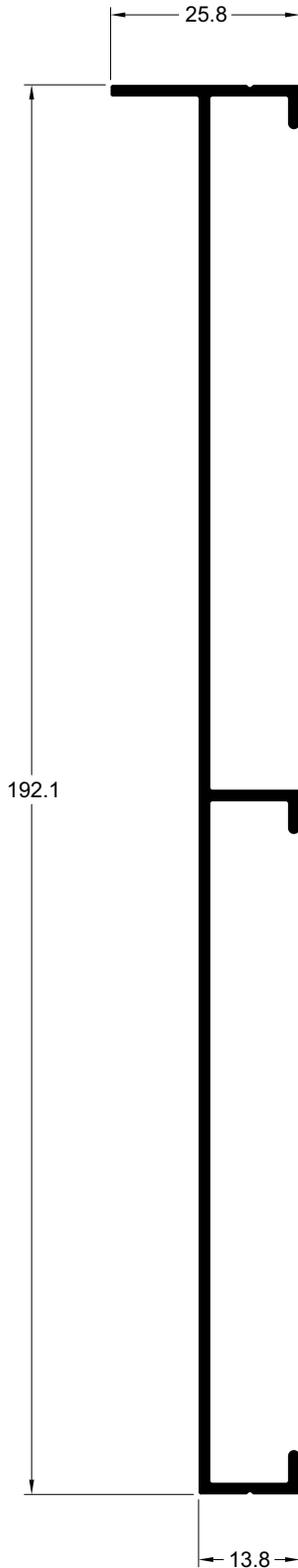
TLG-070
2.075 Kg/m



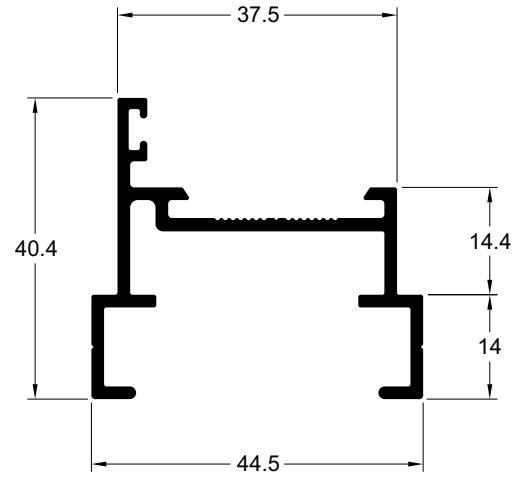
TLG-071
1.962 Kg/m



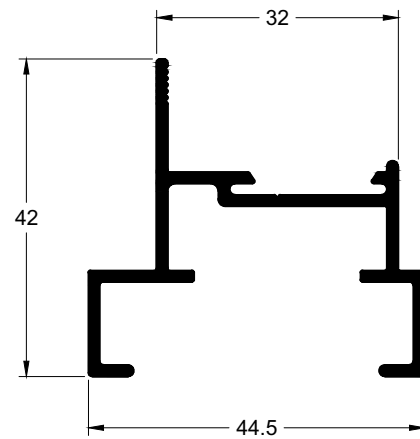
TLG-072
1.098 Kg/m



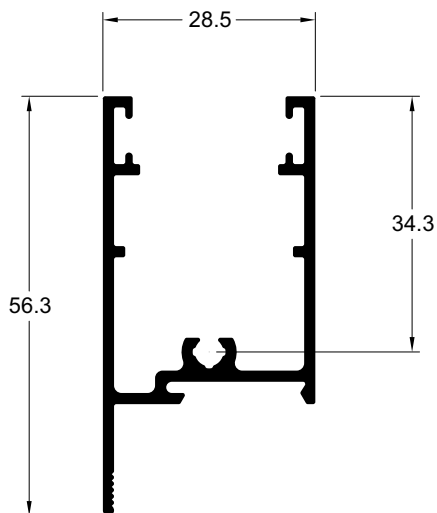
TLG-056C
0.642 Kg/m



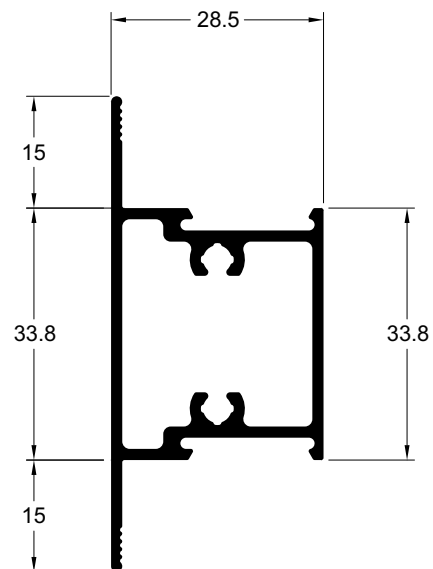
TLG-063
0.549 Kg/m



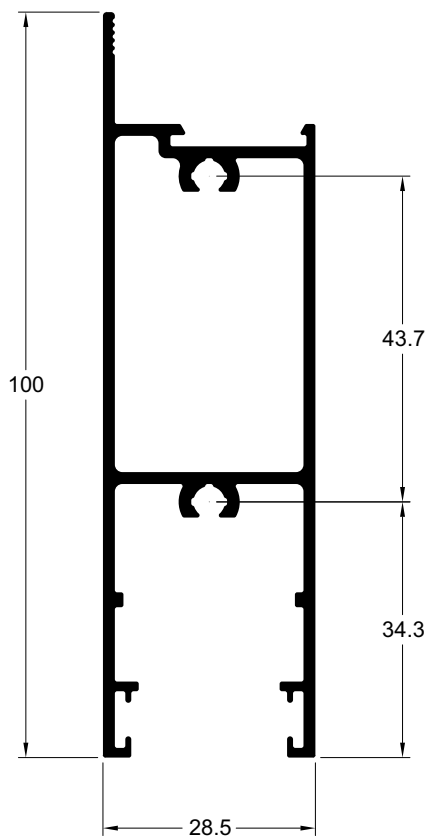
TLG-006
0.650 Kg/m



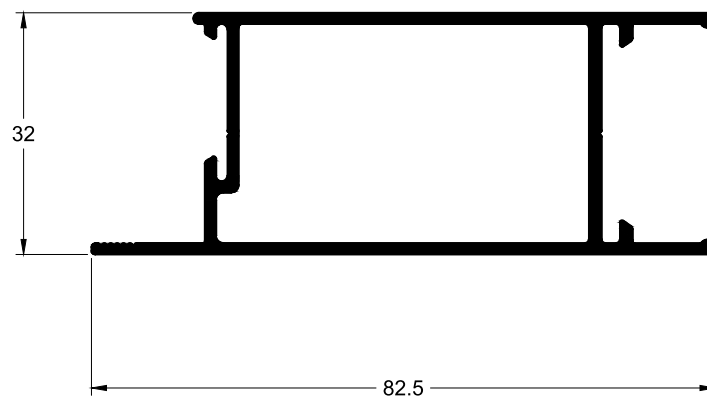
TLG-055
0.758 Kg/m



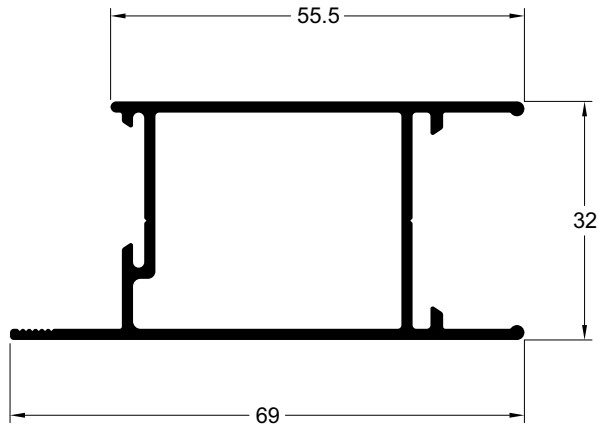
TLG-007
1.214 Kg/m



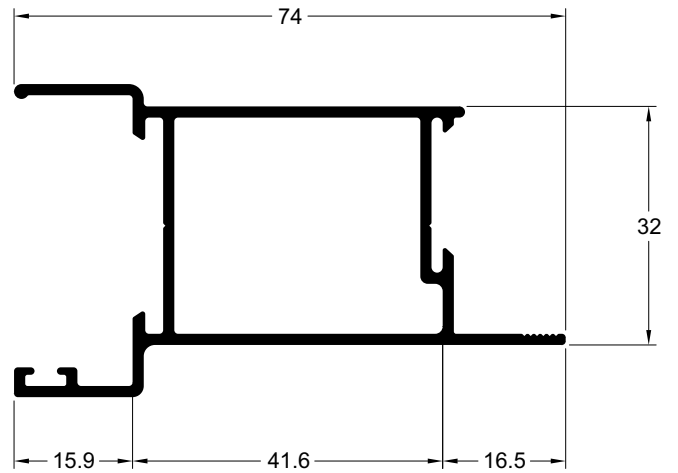
TLG-050A
0.925 Kg/m



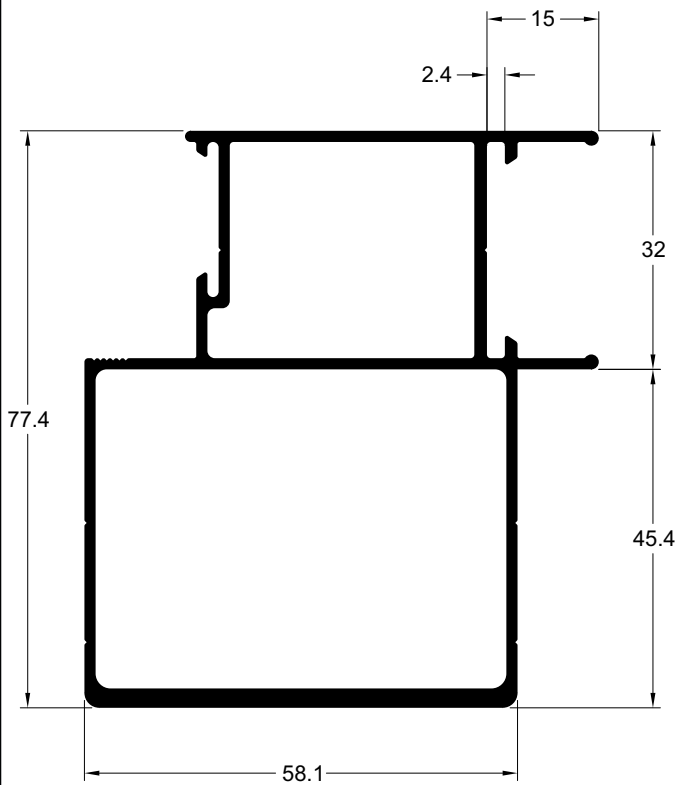
TLG-050
0.799 Kg/m



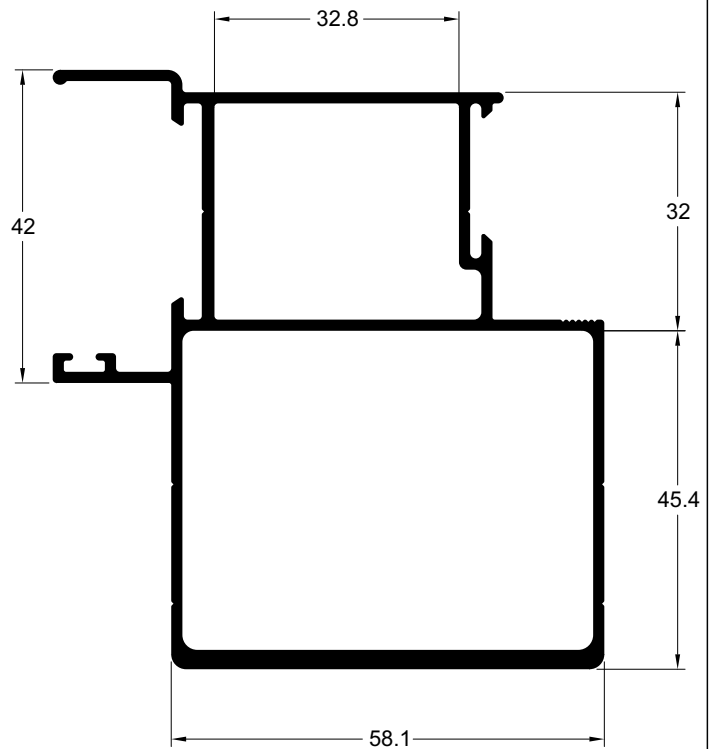
TLG-051
0.904 Kg/m



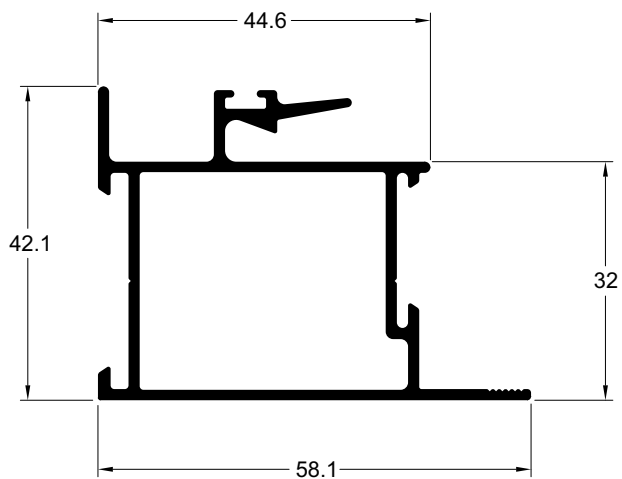
TLG-054
1.574 Kg/m



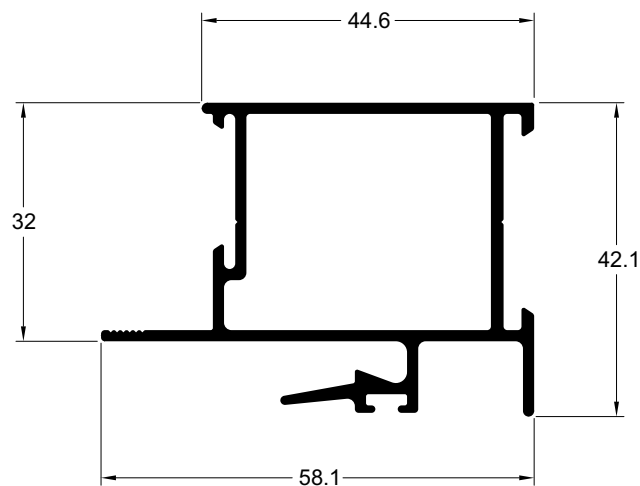
TLG-053
1.651 Kg/m



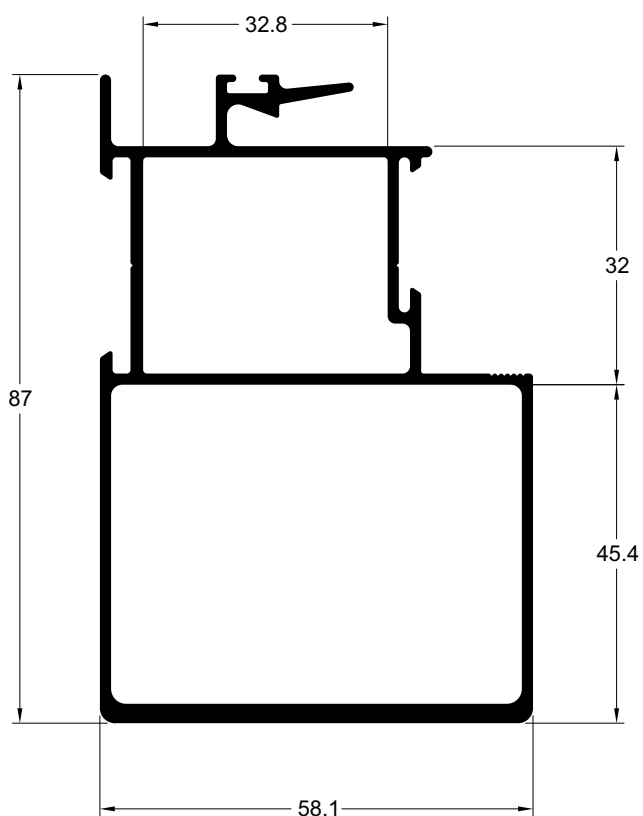
TLG-049
0.875 Kg/m



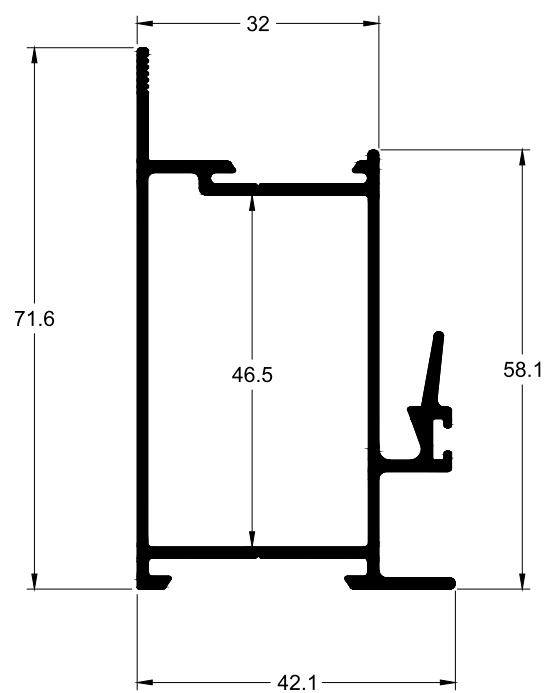
TLG-048
0.910 Kg/m



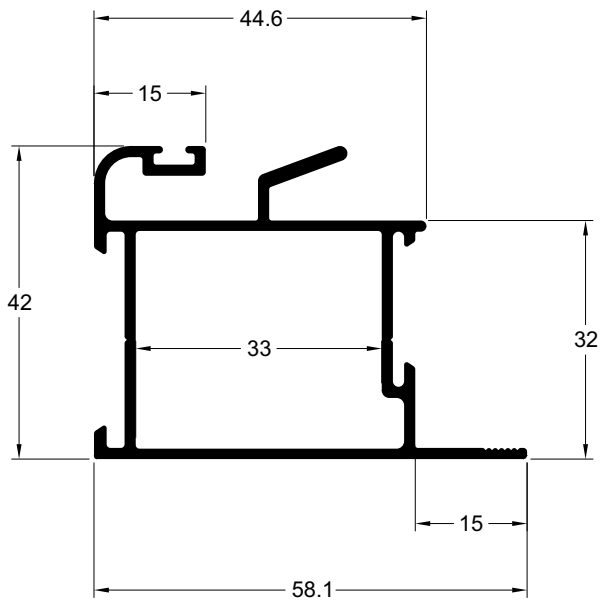
TLG-052
1.668 Kg/m



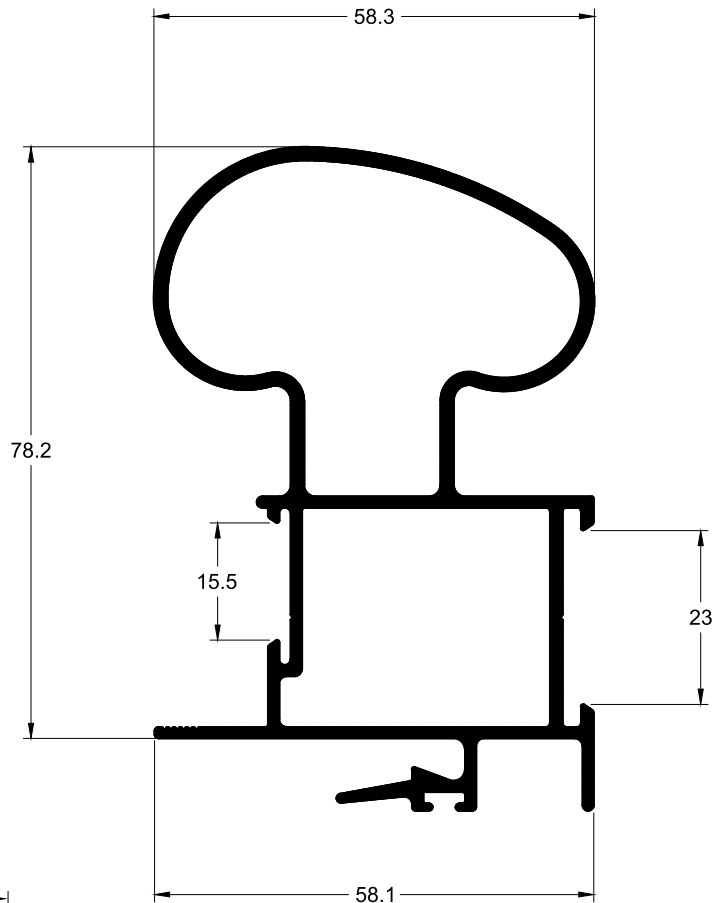
TLG-049A
0.978 Kg/m



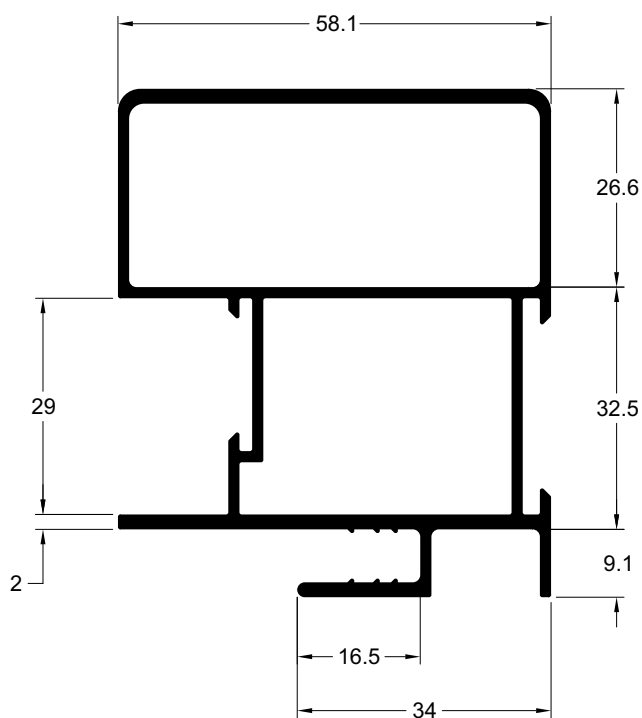
TLG-077C
0.890 Kg/m



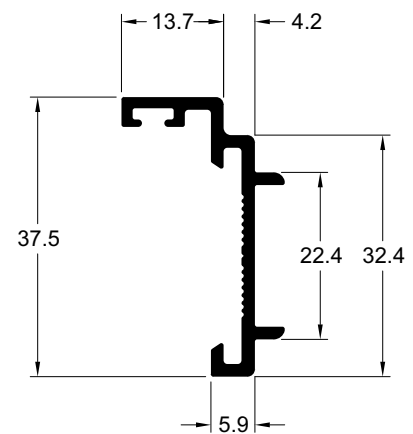
TLG-021
1.663 Kg/m



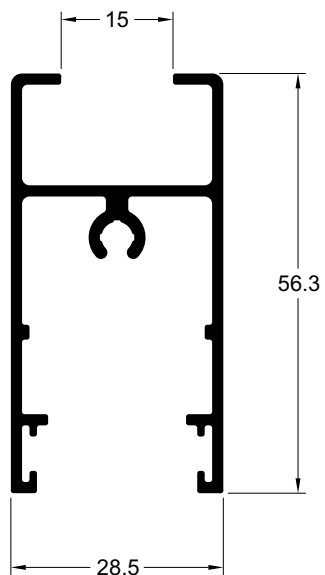
TLG-018
1.522 Kg/m



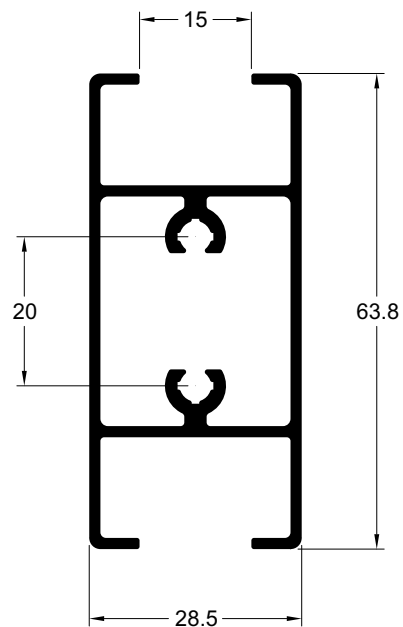
TLG-016
0.347 Kg/m



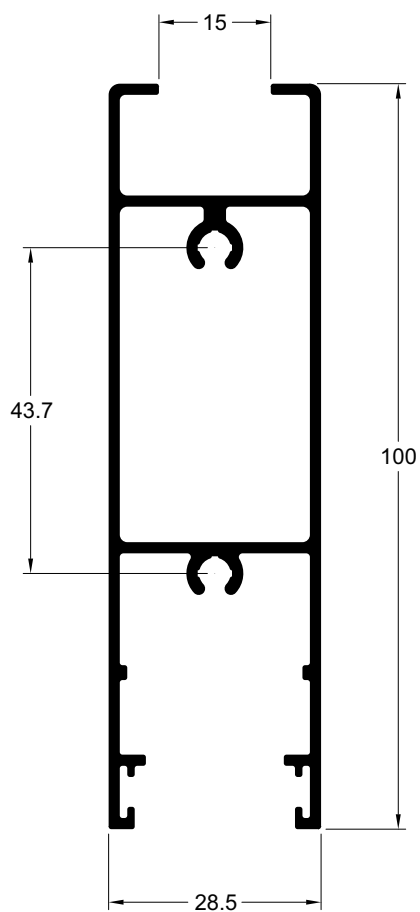
LG-06SB
0.759 Kg/m



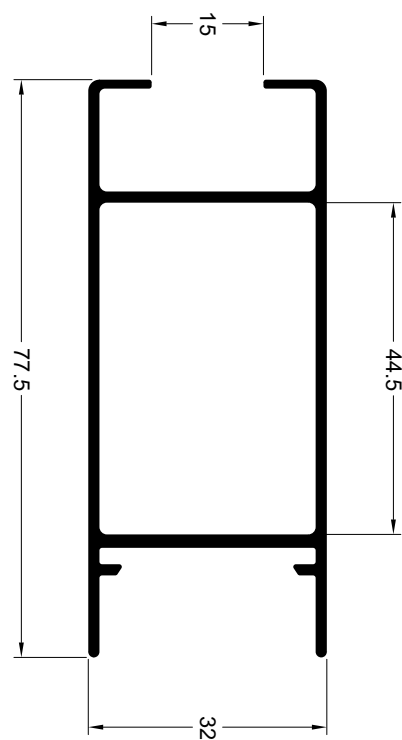
LG-55SB
0.985 Kg/m



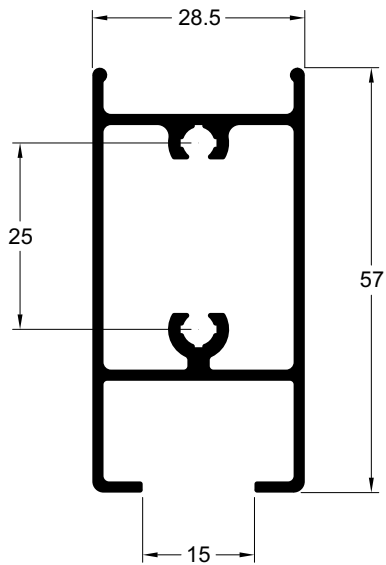
LG-07SB
1.276 Kg/m



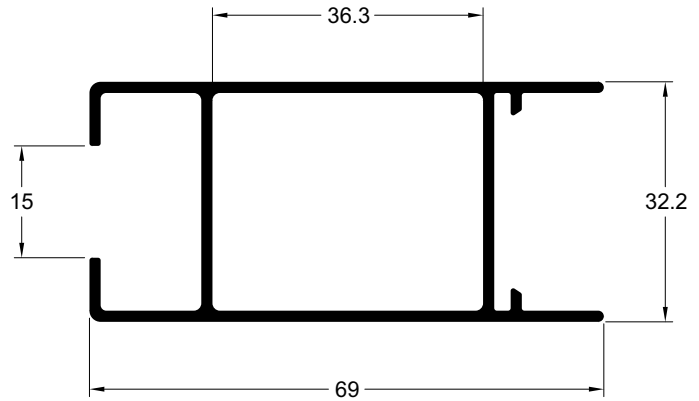
LG-34SB
0.957 Kg/m



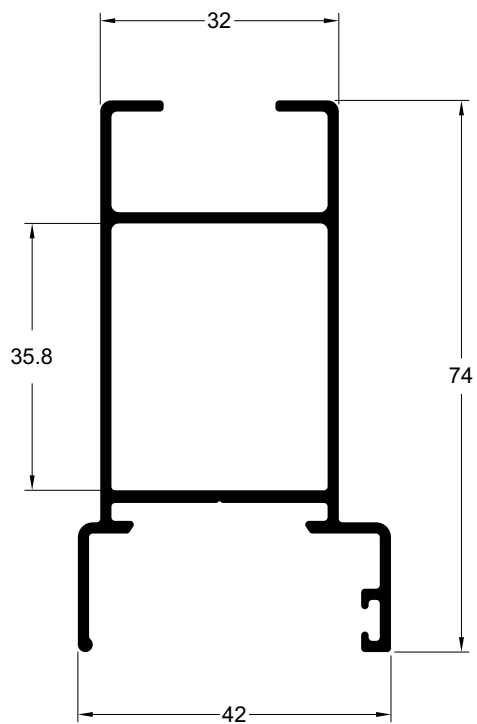
LG-058 SB
0,836 Kg/m



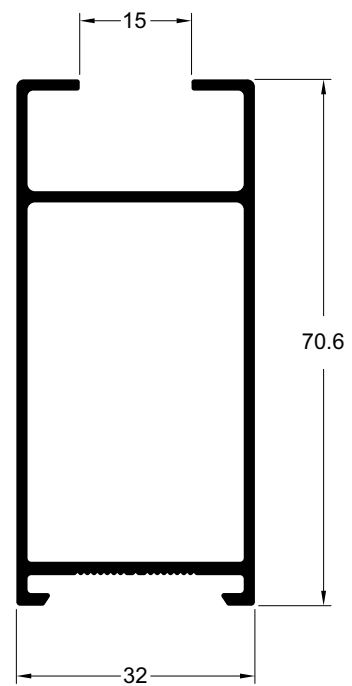
LG-50SB
0,878 Kg/m



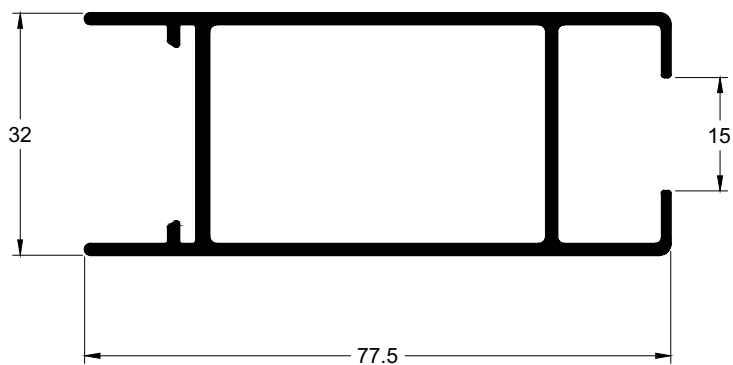
LG-51SB
1,000 Kg/m



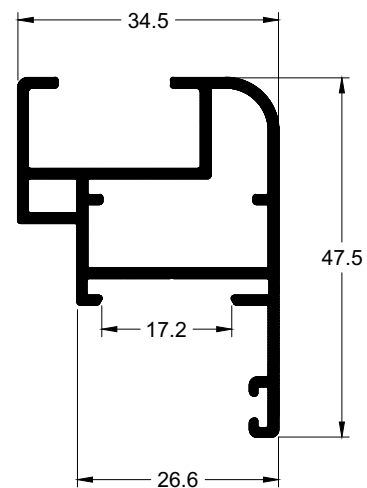
LG-043 SB
0,912 Kg/m



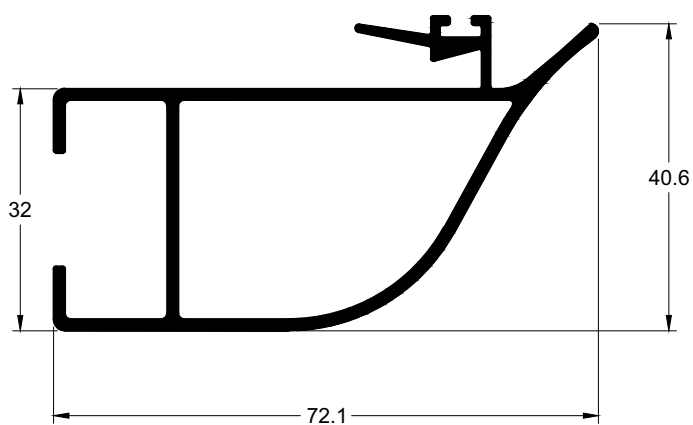
AG-034SB
0.957 Kg/m



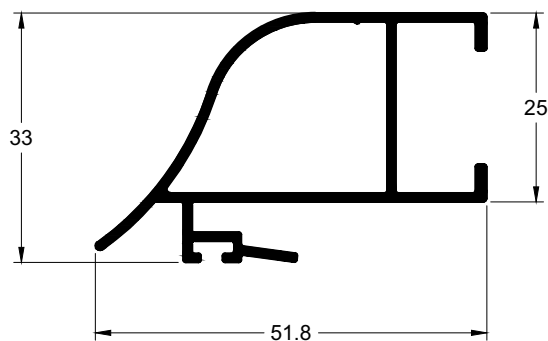
AG-016SB
0.628 Kg/m



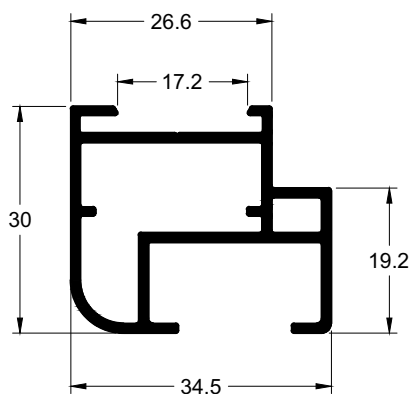
AG-035SB
0.931 Kg/m



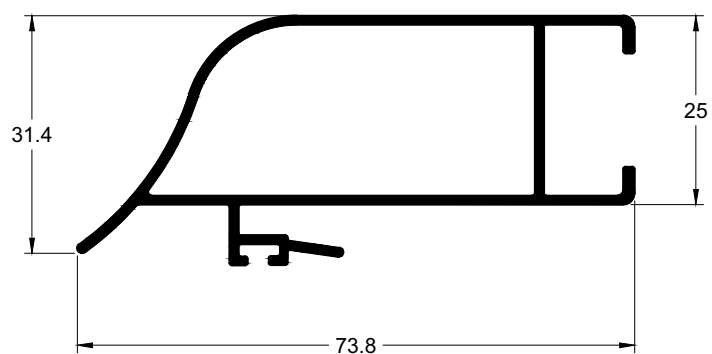
AG-012SB
0.550 Kg/m

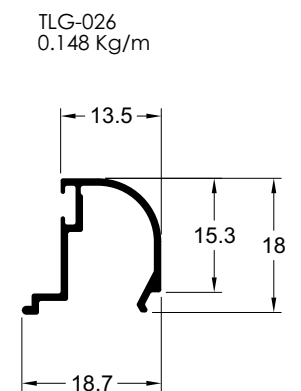
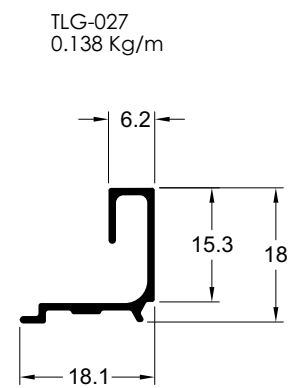
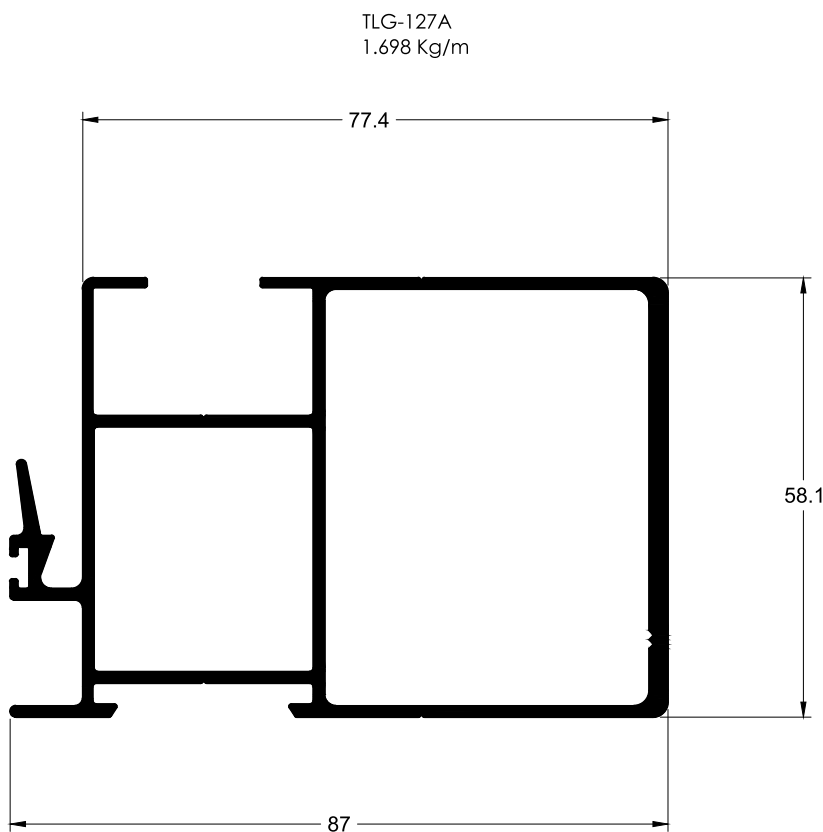
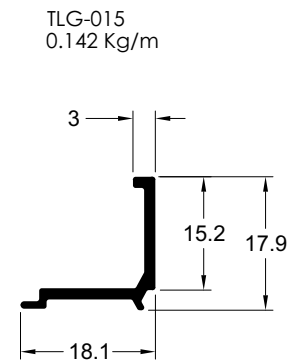
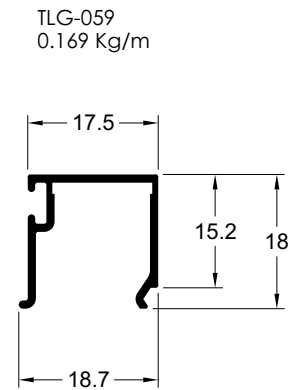
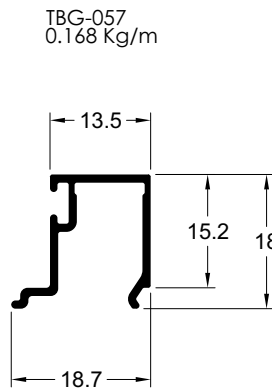
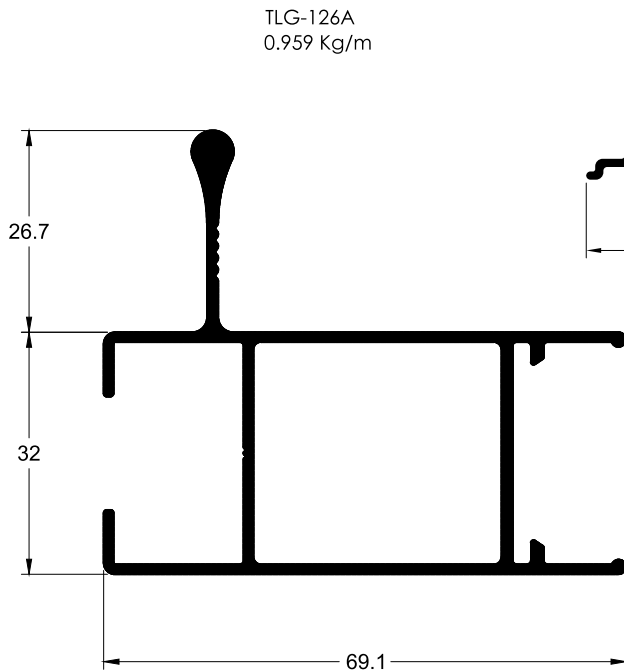


AG-015SB
0.545 Kg/m

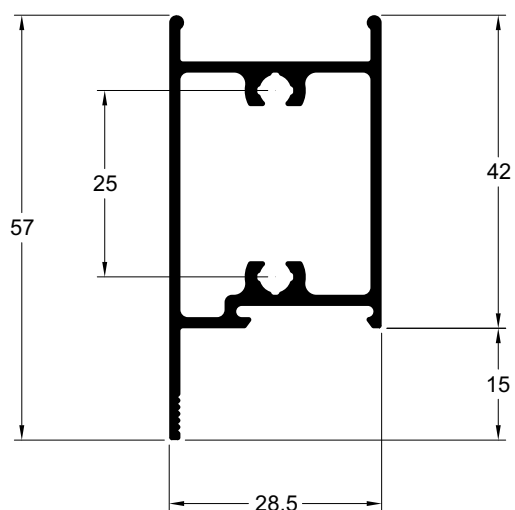


AG-033SB
0.693 Kg/m

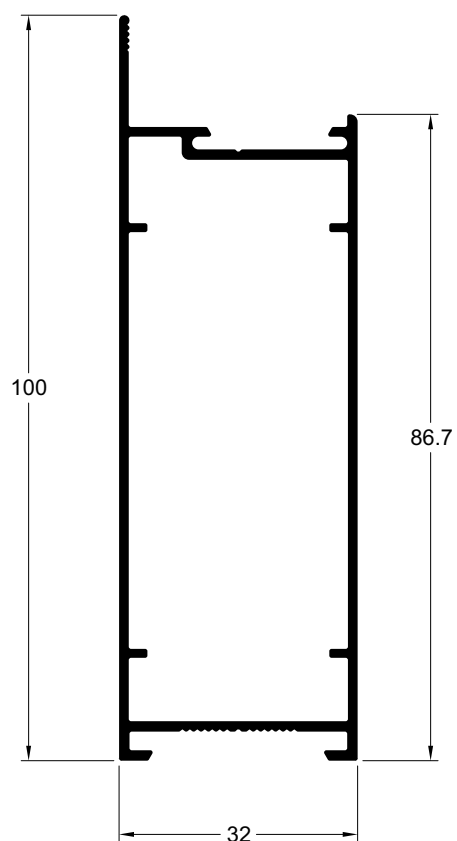




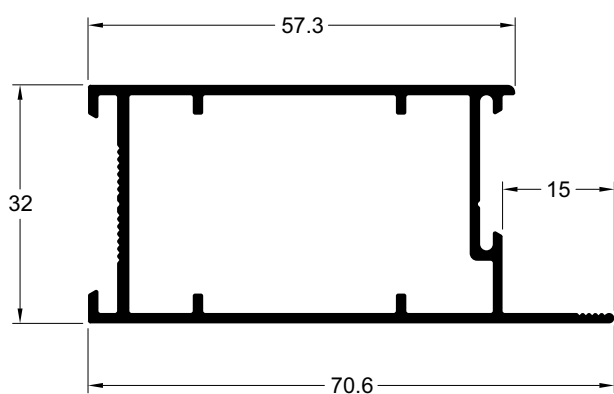
TLG-058
0.750 Kg/m



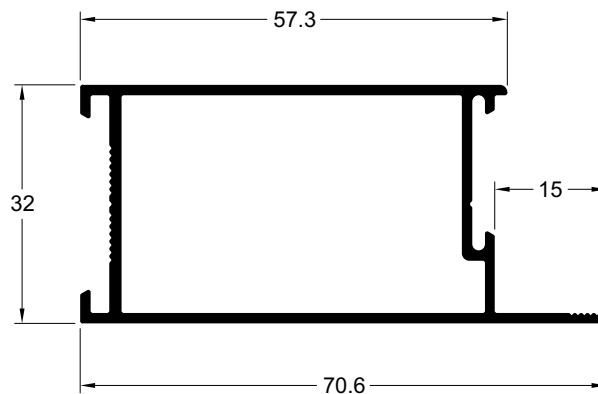
TLG-042
0.959 Kg/m



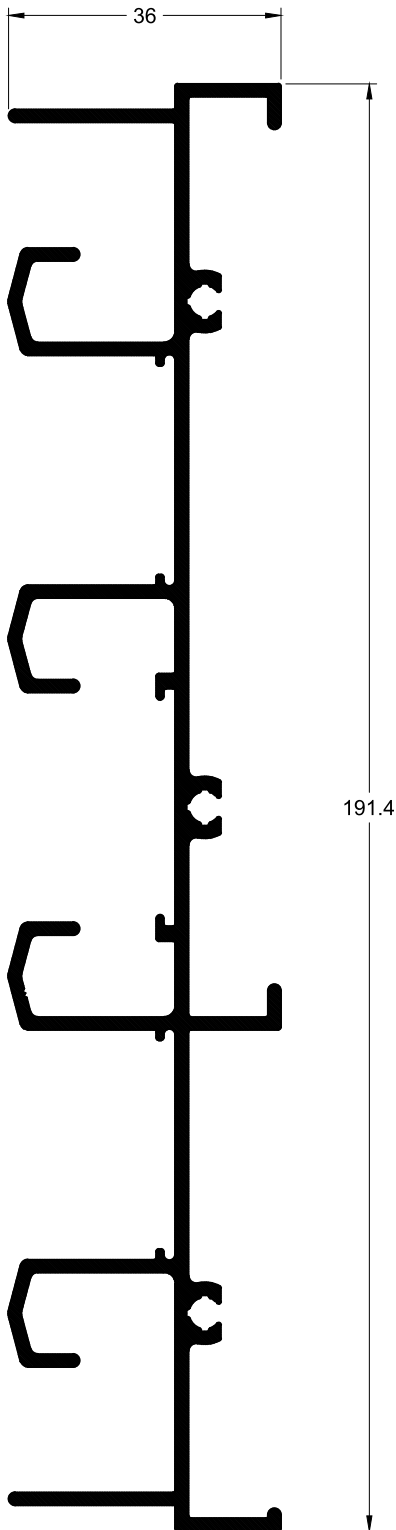
TLG-043R
0.807 Kg/m



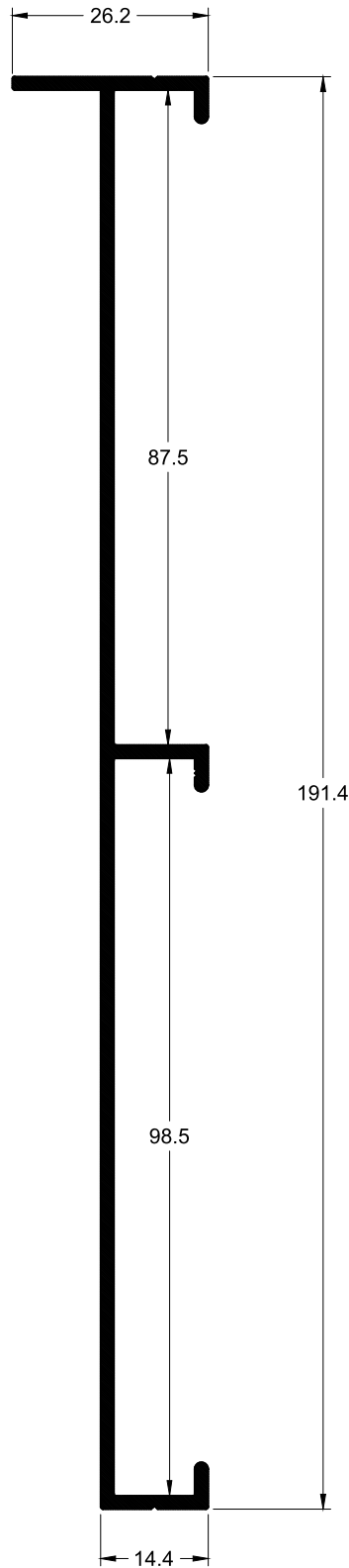
TLG-043S
0.768 Kg/m



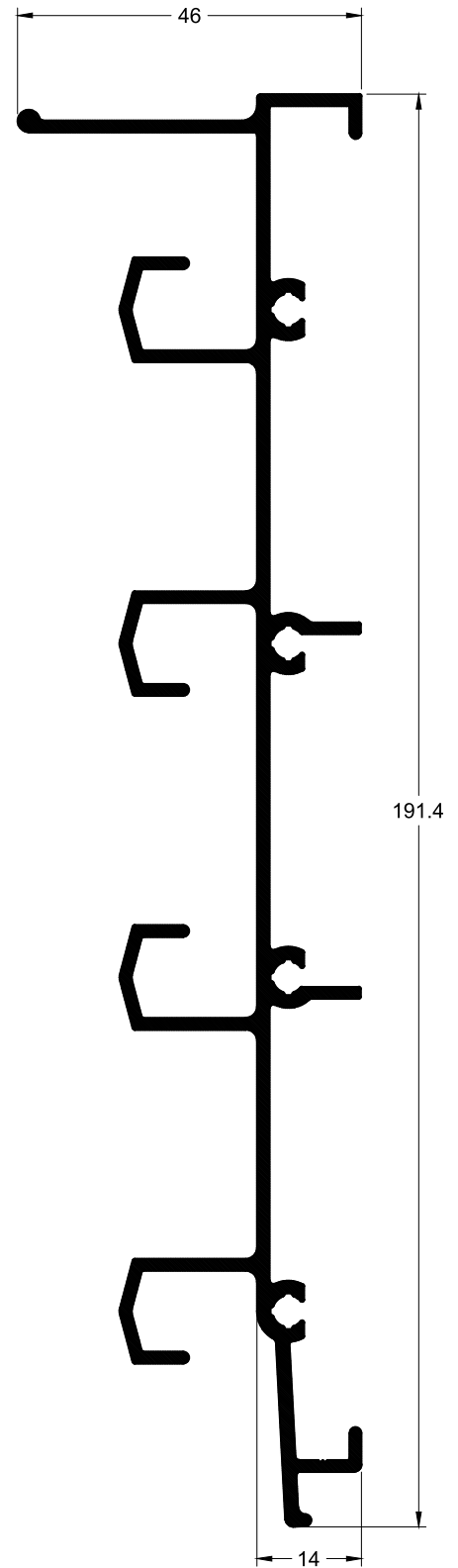
TLG-070A
2.273 Kg/m



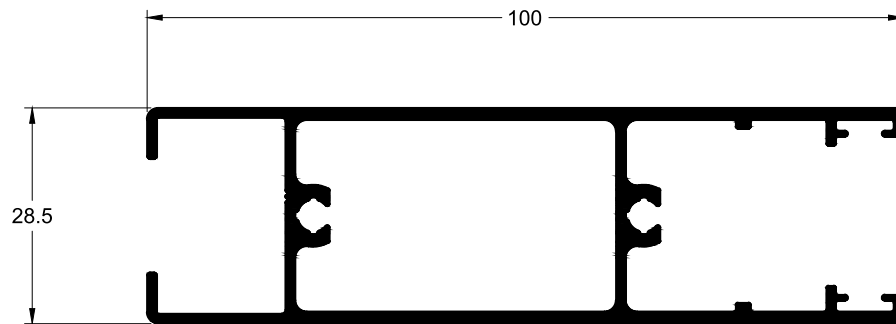
TLG-072A
1.236 Kg/m



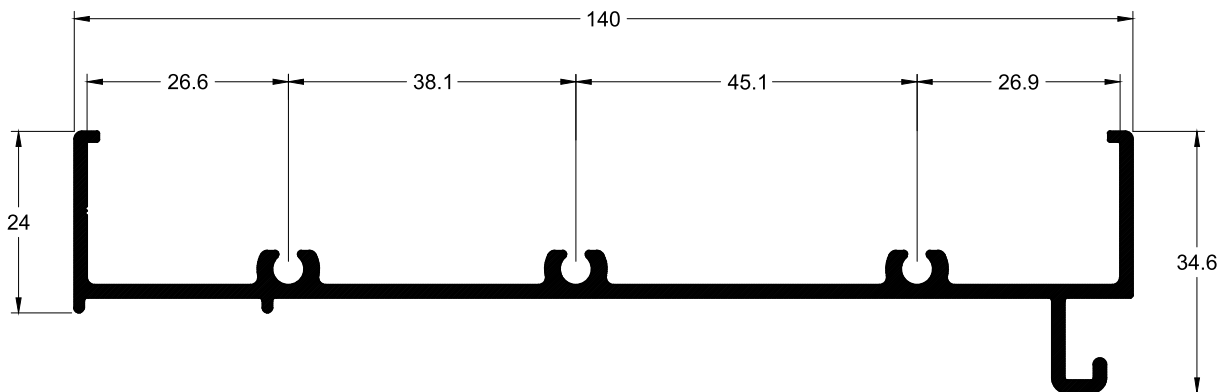
TLG-071A
2.083 Kg/m



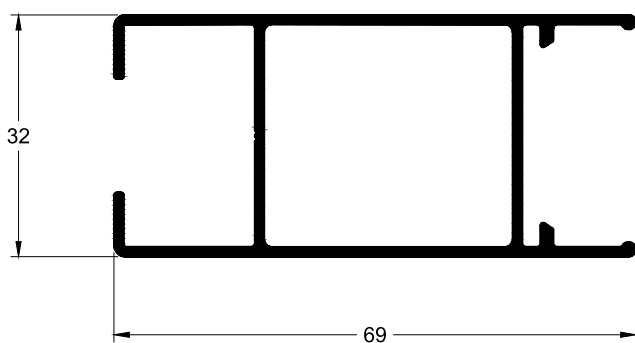
TLG-129
1.242 Kg/m



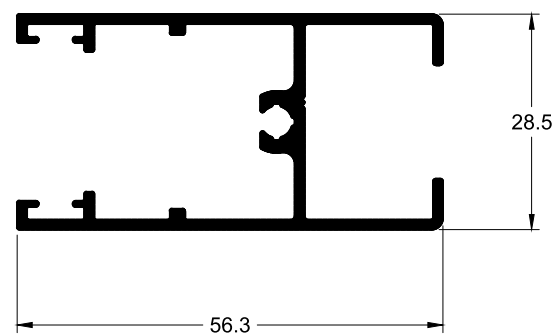
TLG-168A
1.117 Kg/m



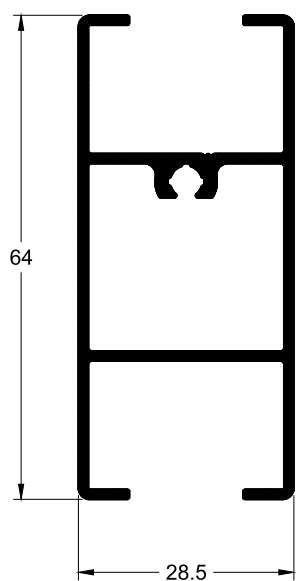
TLG-132
0.773 Kg/m



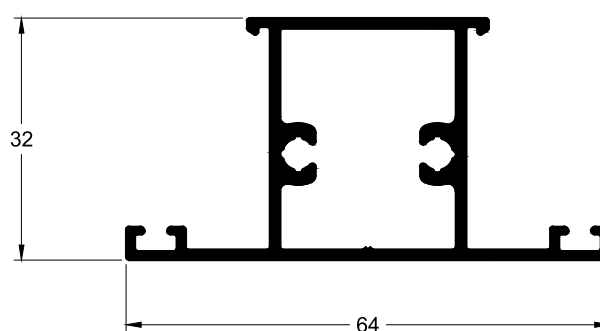
TLG-130
0.655 Kg/m



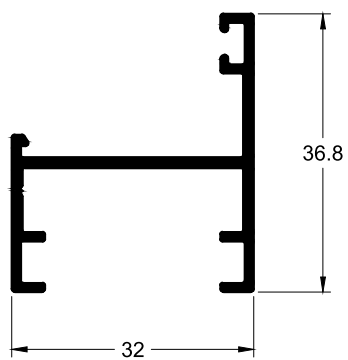
TLG-131A
0.764 Kg/m



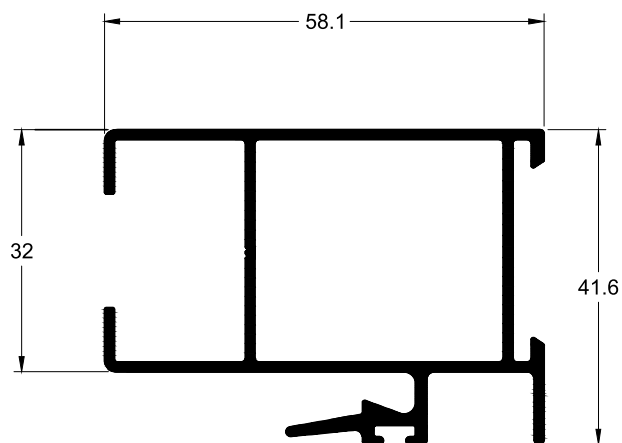
TLG-074
0.751 Kg/m



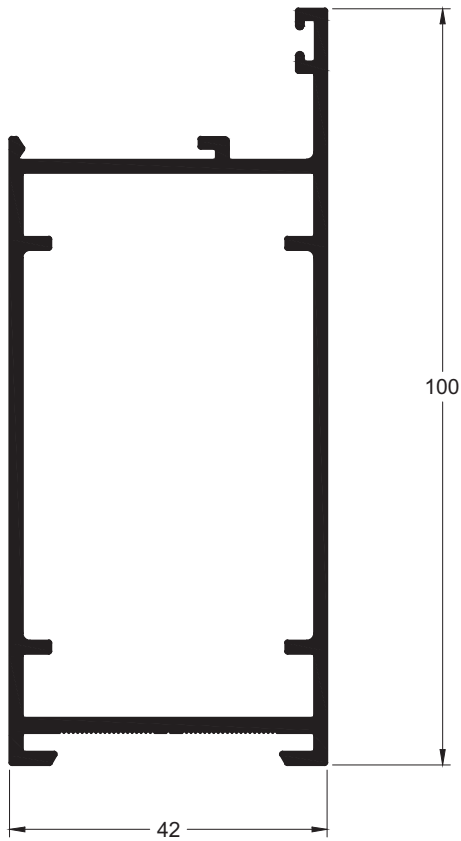
TLG-068
0.386 Kg/m



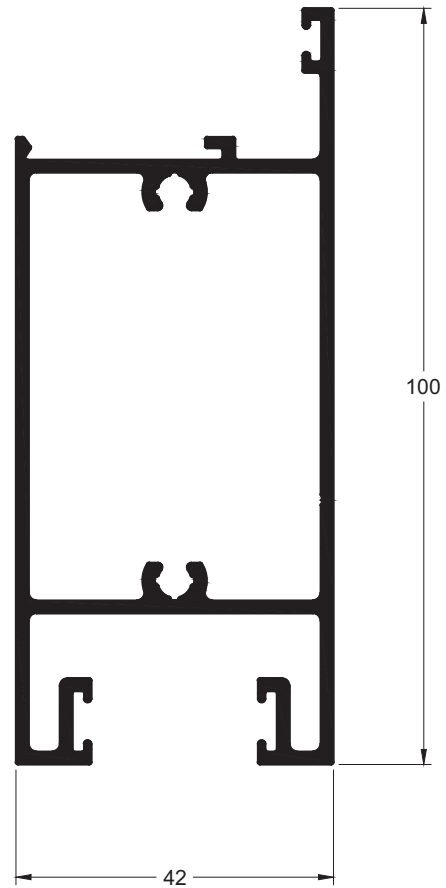
TLG-128
0.872 Kg/m



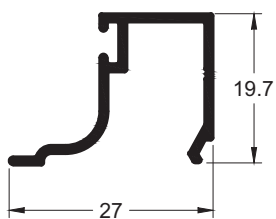
T42-032
1.377 Kg/m



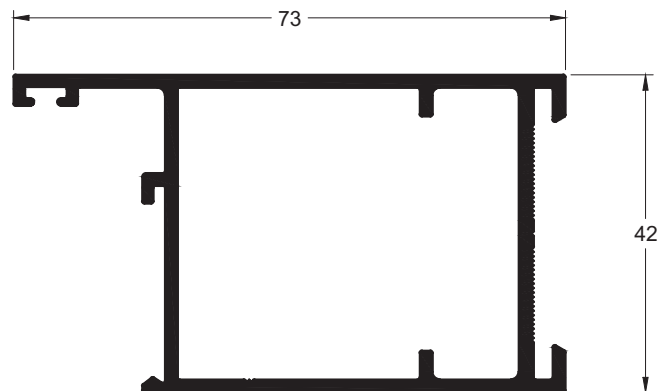
T42-006
1.578 Kg/m



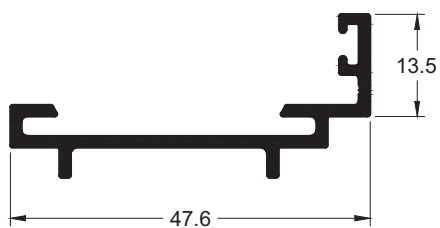
TBG-023
0.202Kg/m



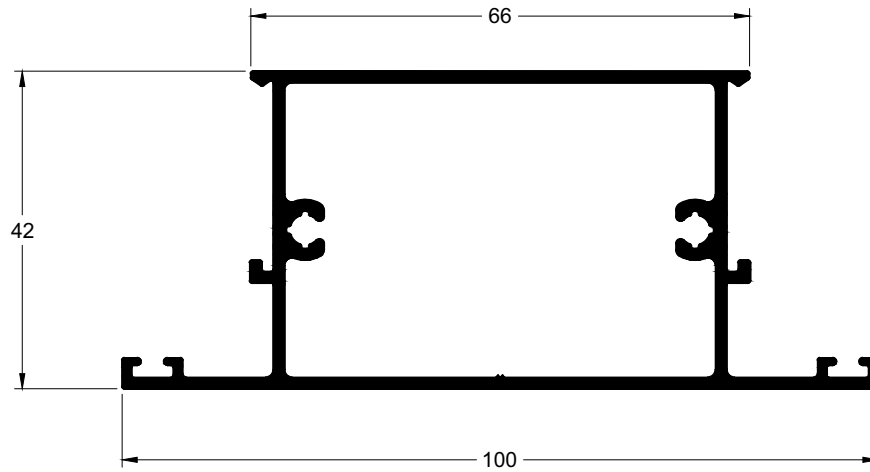
T42-004
1.093 Kg/m



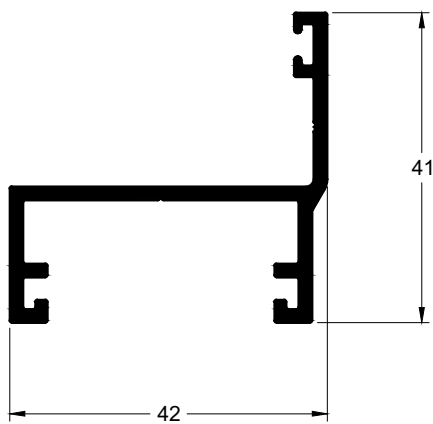
T42-014
0.371 Kg/m



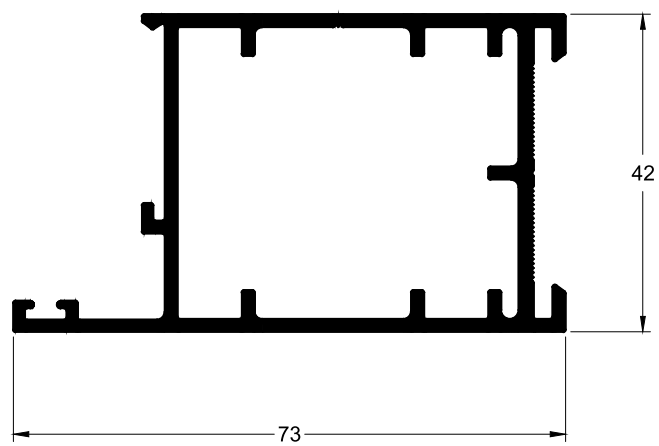
T42-007
1.212 Kg/m



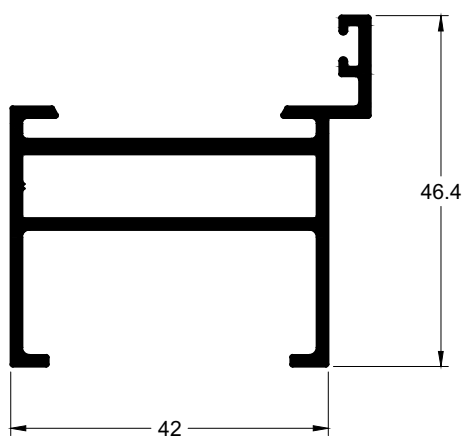
T42-042
0.573 Kg/m



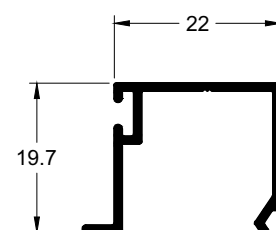
T42-035
1.182 Kg/m



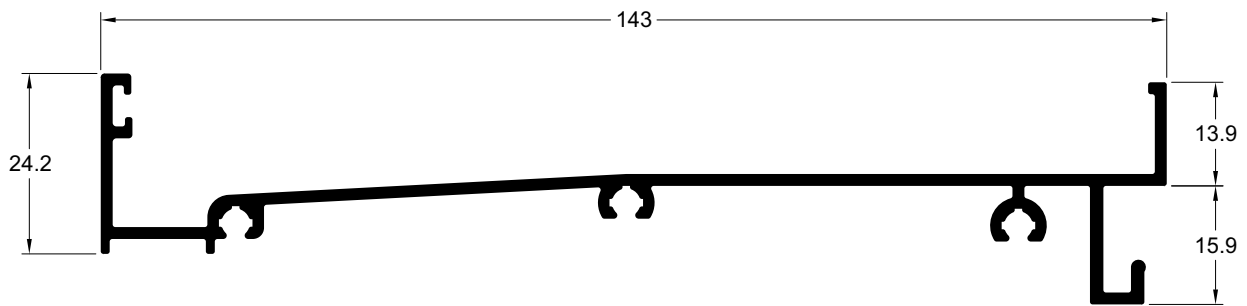
T42-012
0.814 Kg/m



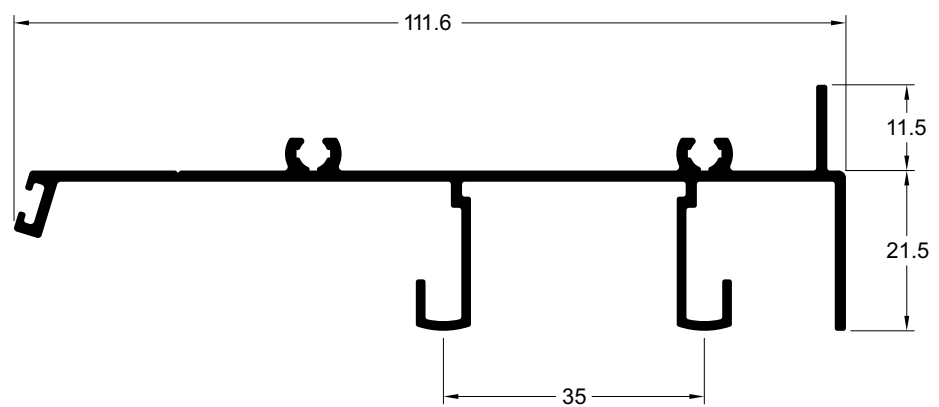
TBG-037
0.190 Kg/m



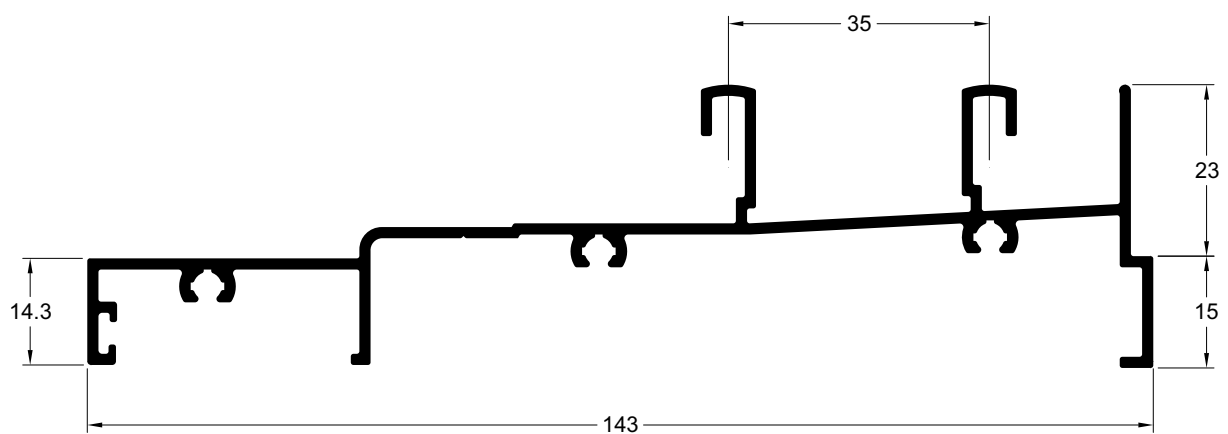
TSU-137
1.100 Kg/m



TSU-143
0.951 Kg/m



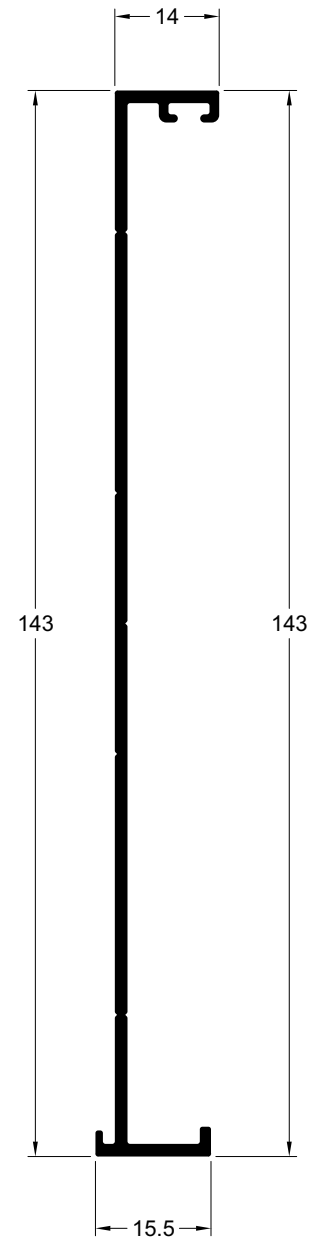
TSU-139
1.275 Kg/m



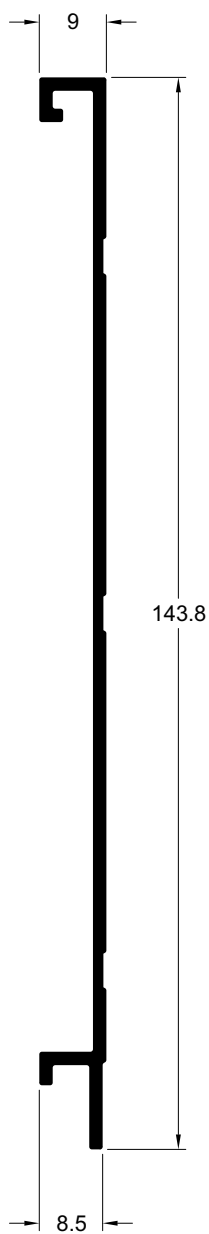
TSU-142
1.207 Kg/m



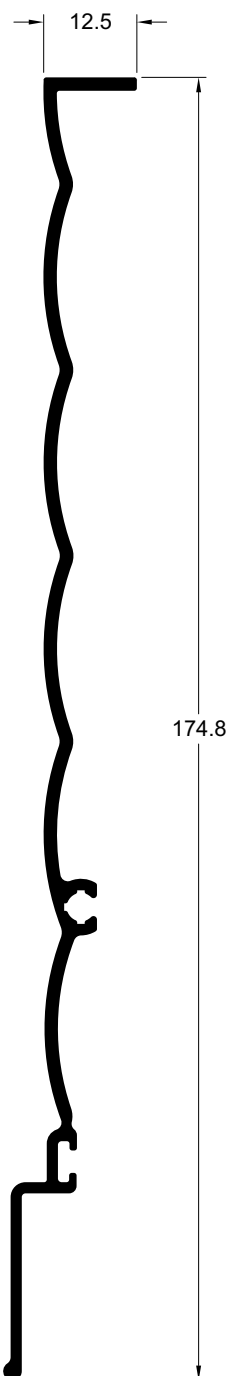
TSU-140
0.815 Kg/m



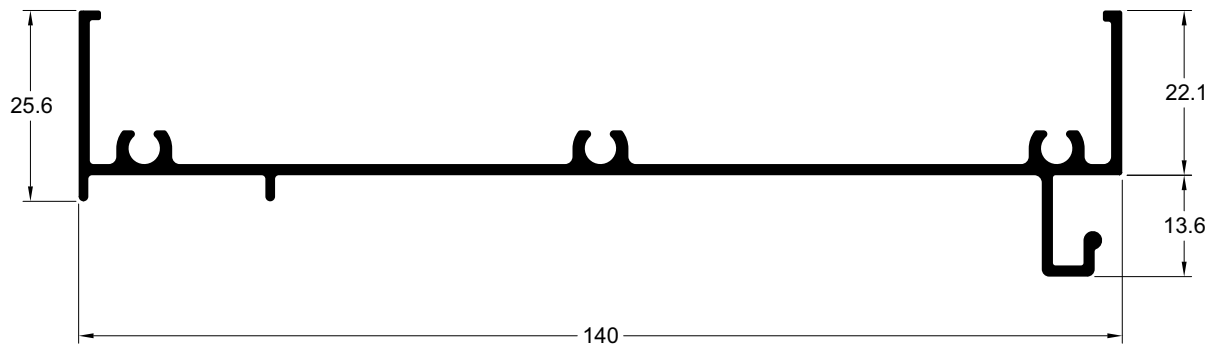
TSU-138
0.795 Kg/m



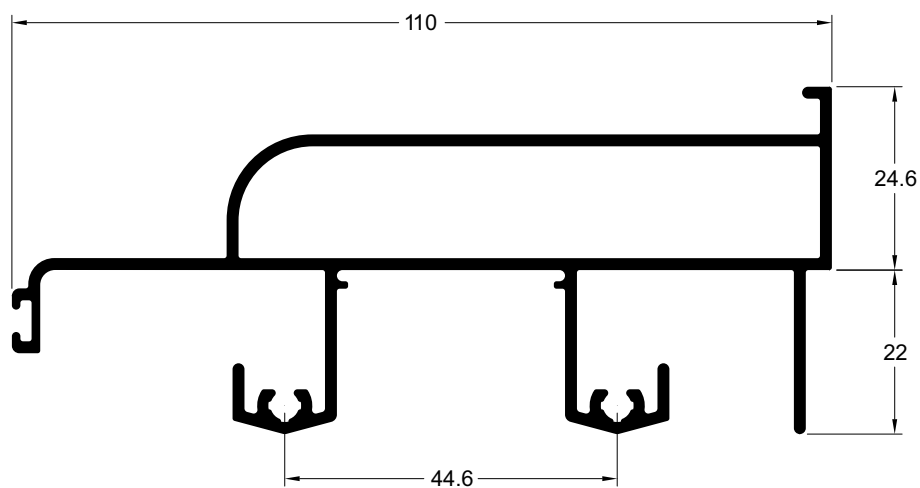
TSU-136
0.978 Kg/m



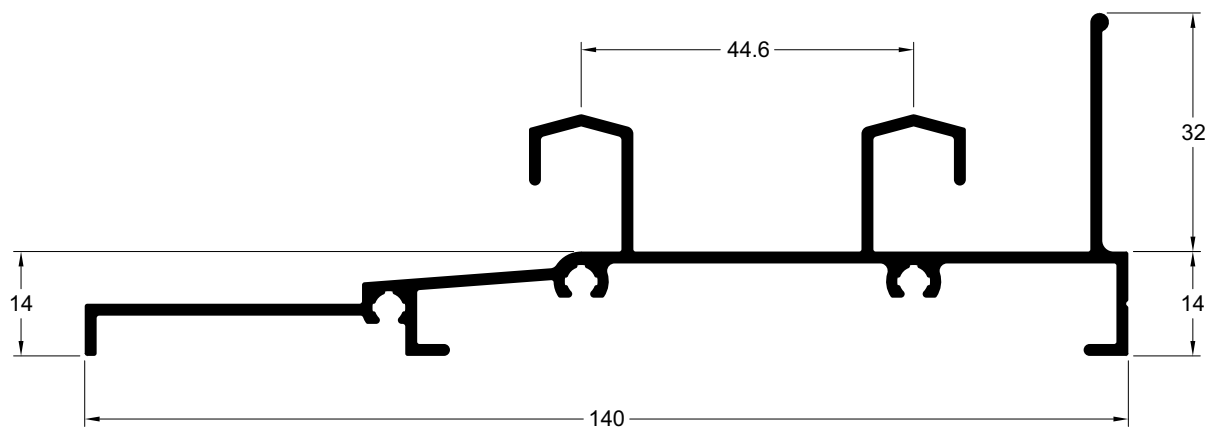
TLG-060
1.016 Kg/m



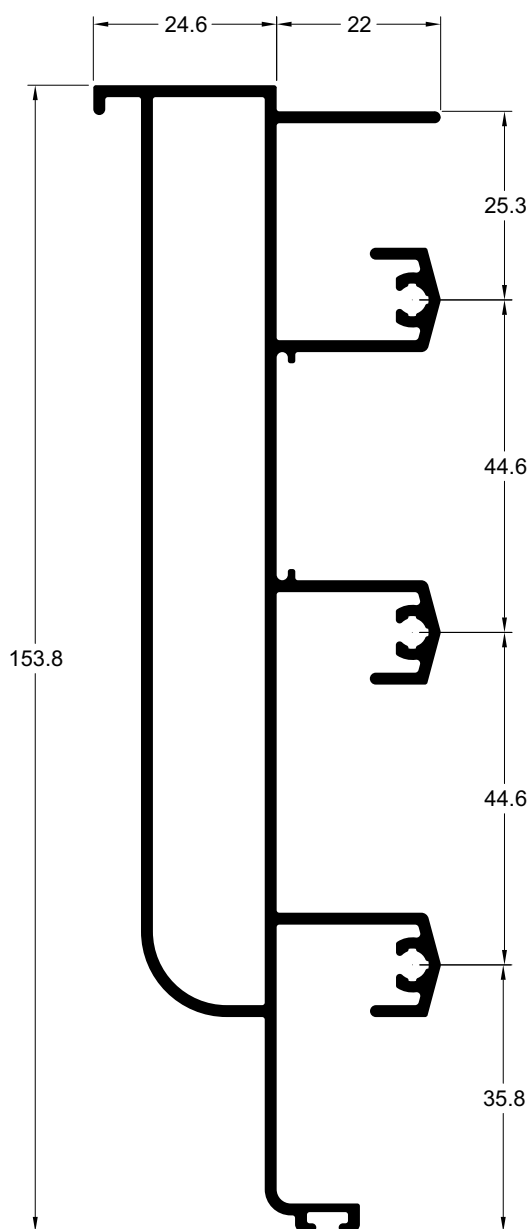
TLG-859
1.553 Kg/m



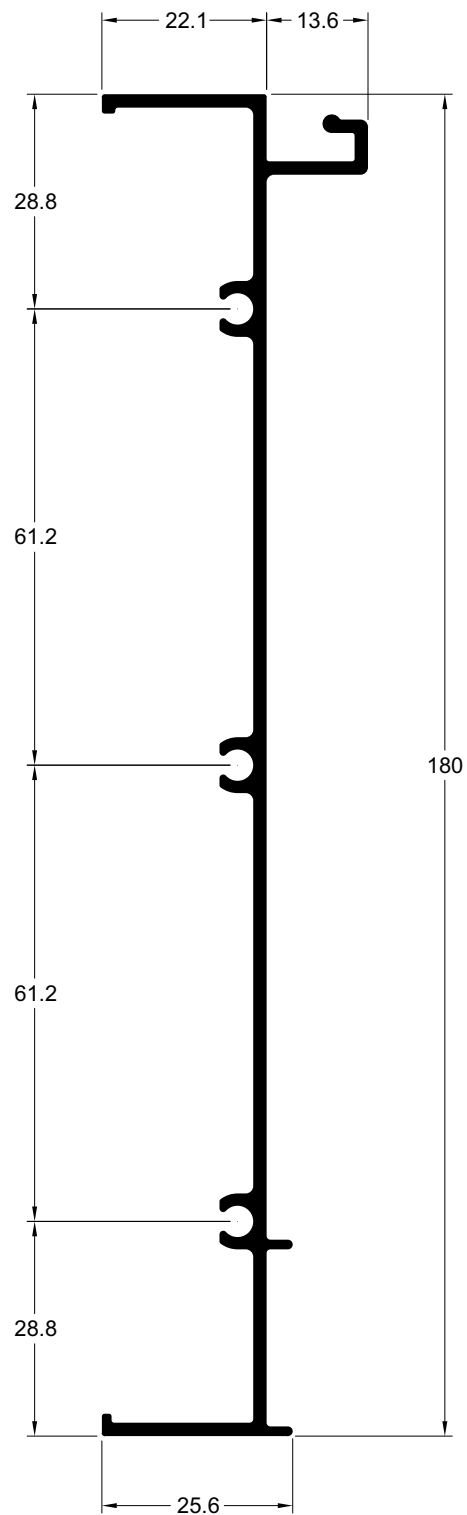
TLG-861
1.338 Kg/m



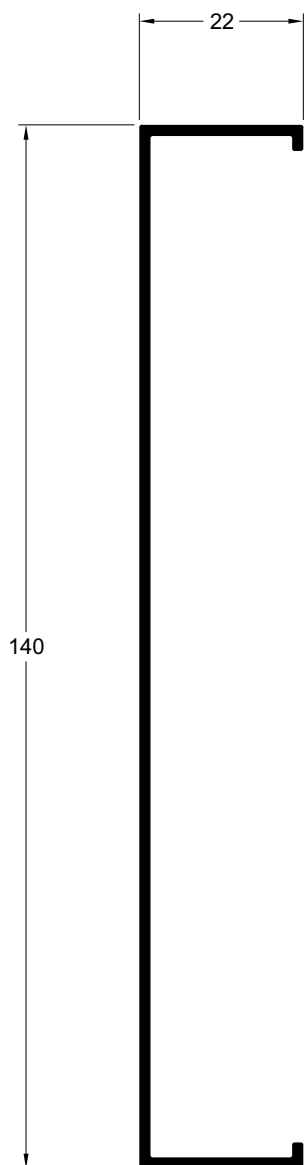
TLG-034
2.141 Kg/m



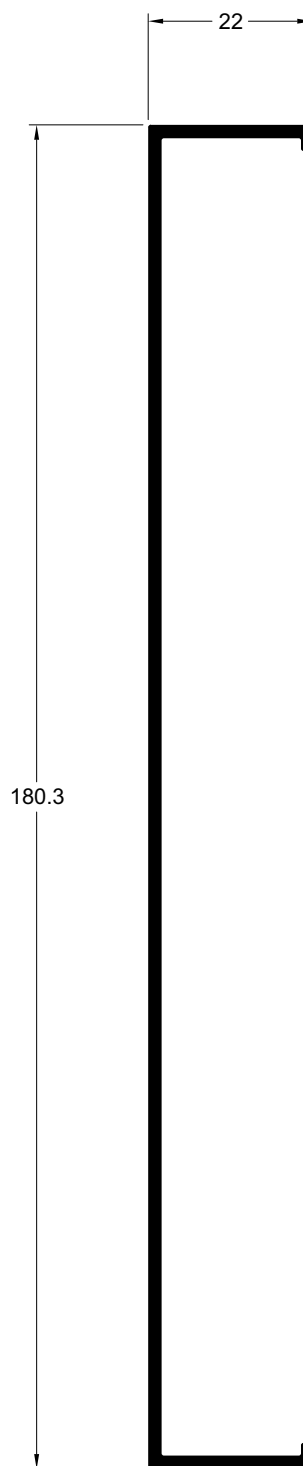
TLG-041L
1.370 Kg/m



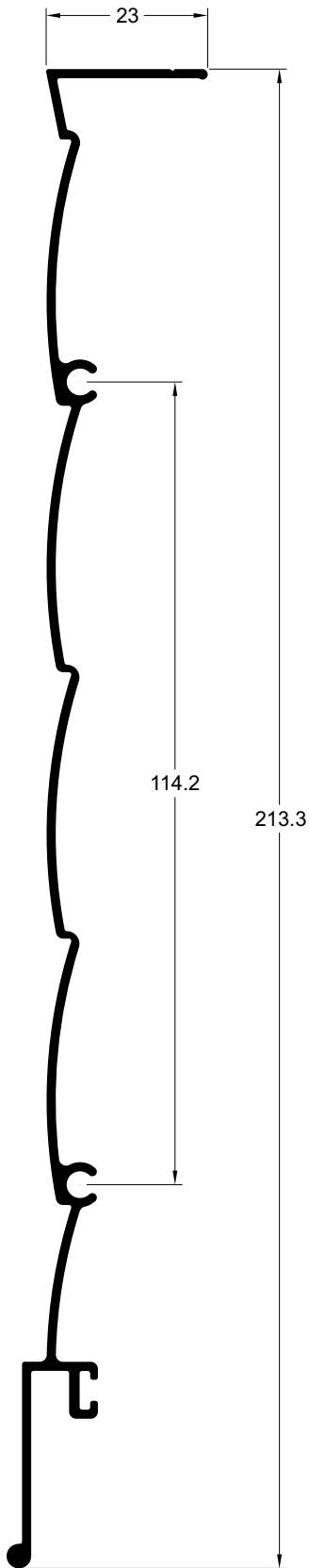
TLG-858
0.751 Kg/m



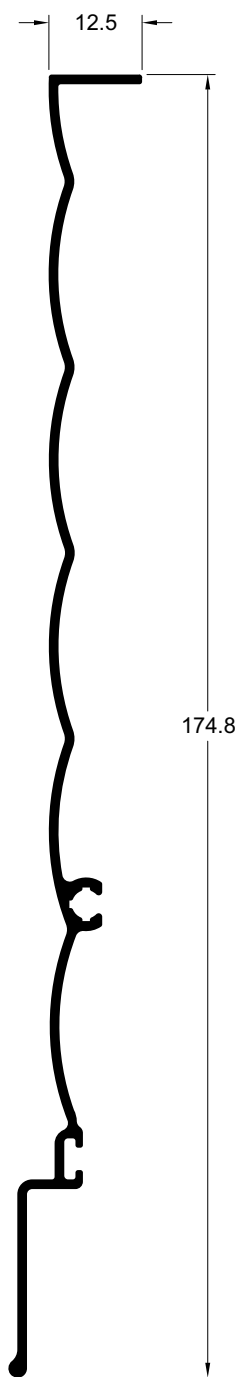
TLG-035
1.090 Kg/m



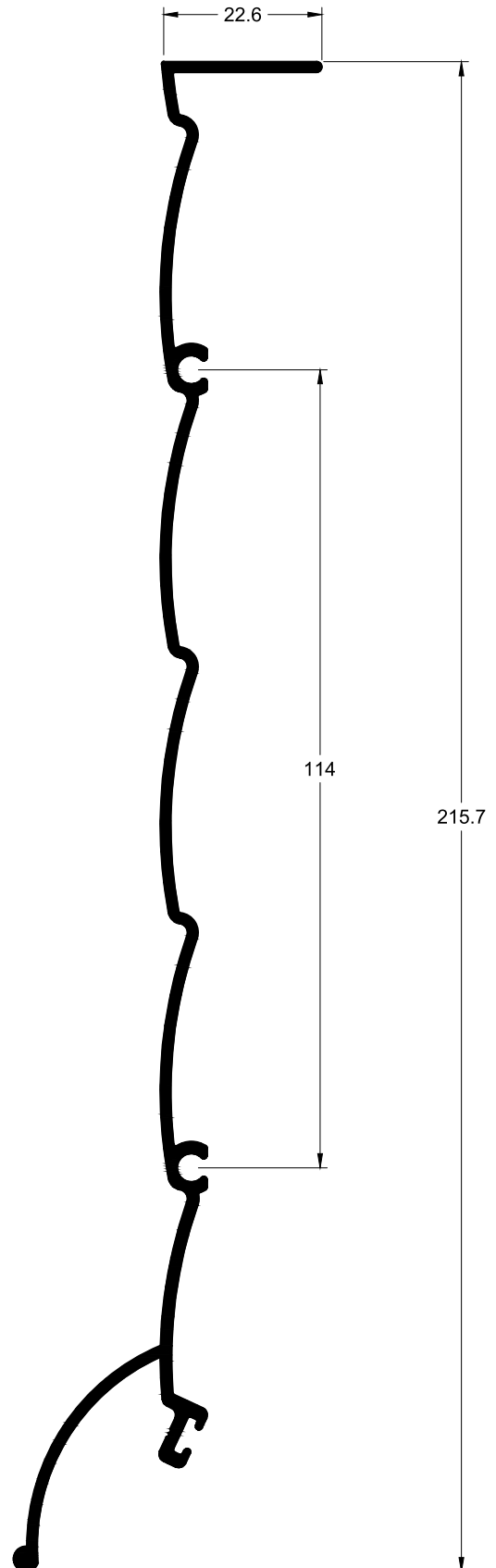
TLG-070D
1.024 Kg/m



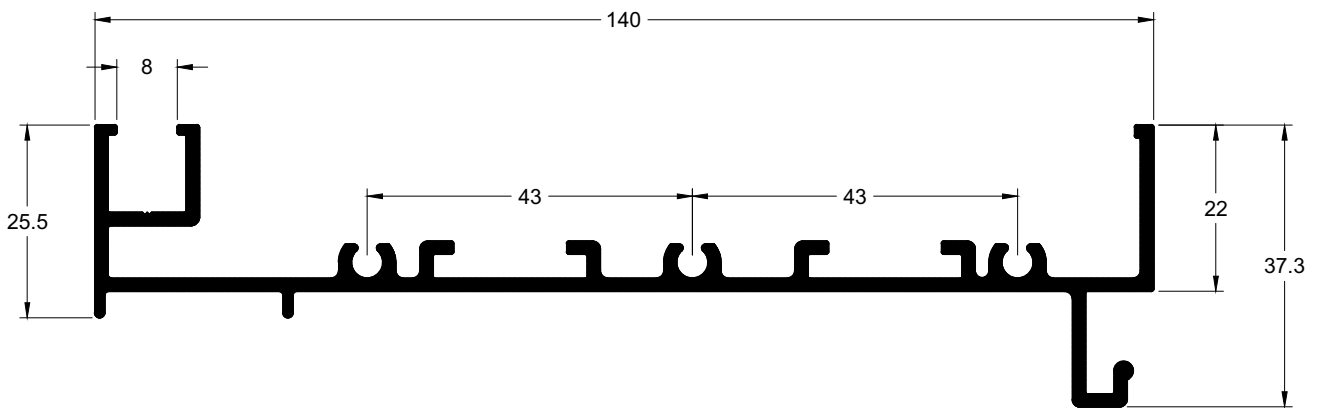
TLG-071D
0.752 Kg/m



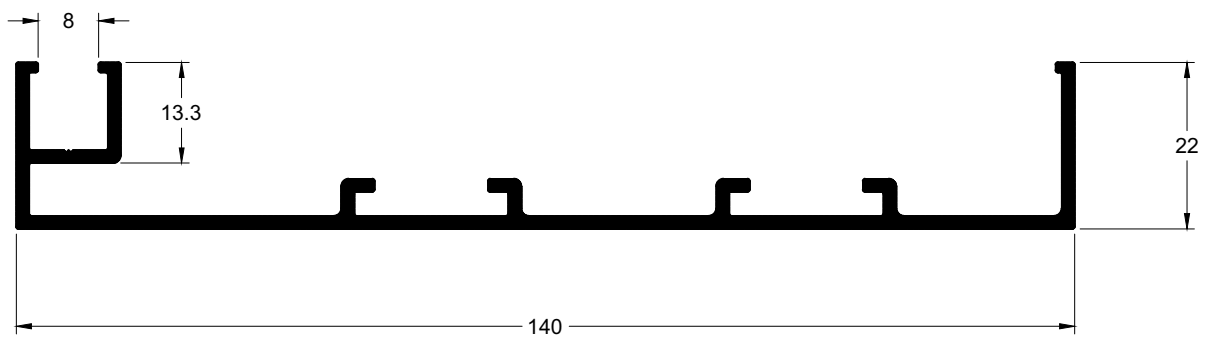
TMN-039
1.236 Kg/m



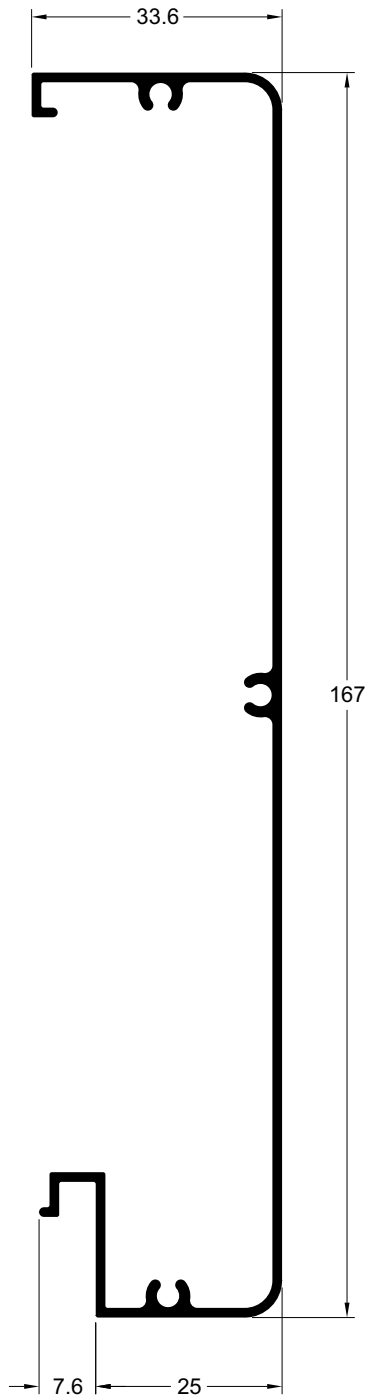
TMN-001
1.380 Kg/m



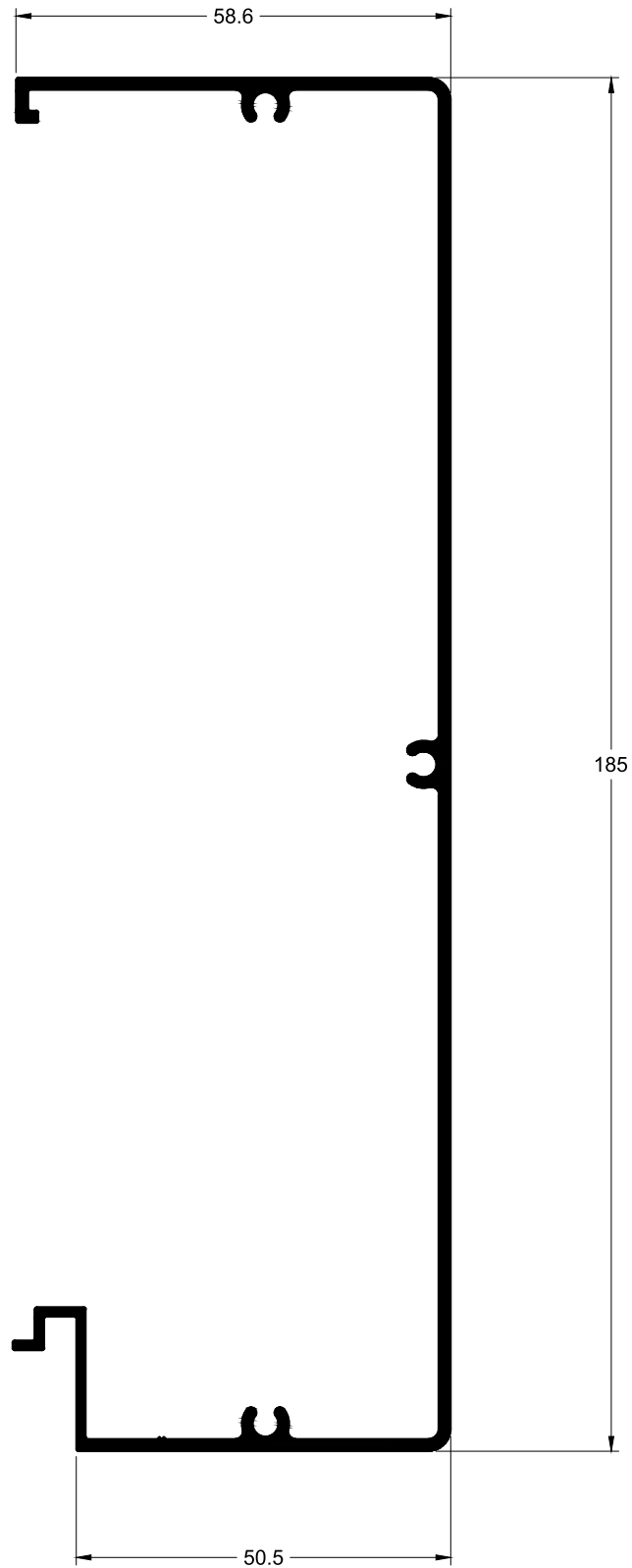
TMN-003
1.092 Kg/m



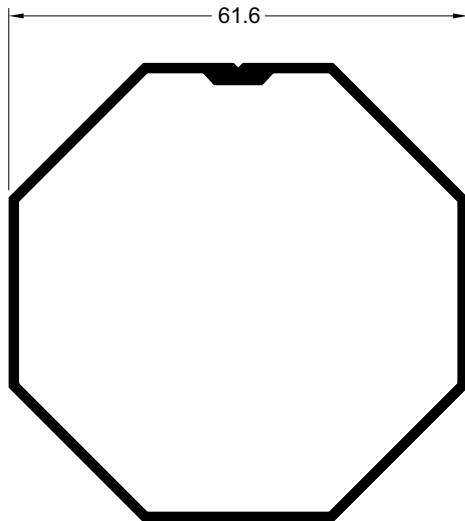
TMN-031
1.008 Kg/m



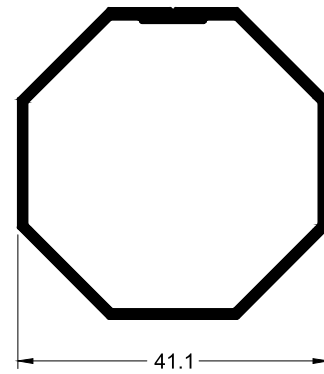
TMN - 032
1.508 Kg/m



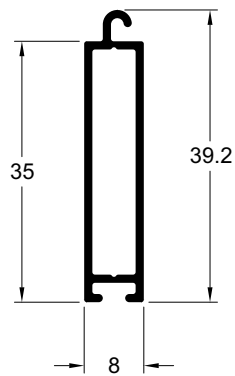
TMN-015
0.790 Kg/m



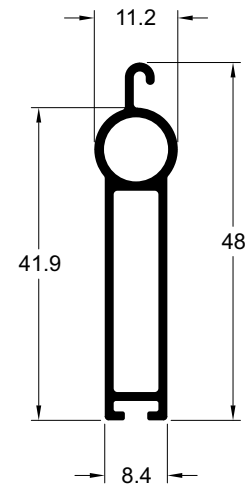
TP-0238
0.485 Kg/m



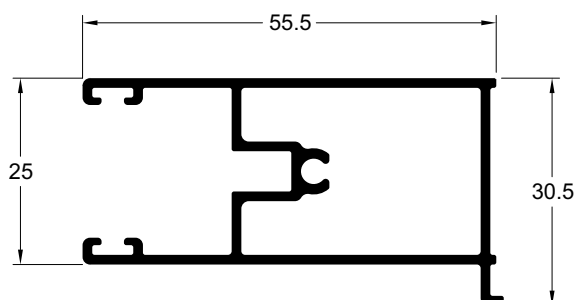
TLG-862
0.270 Kg/m



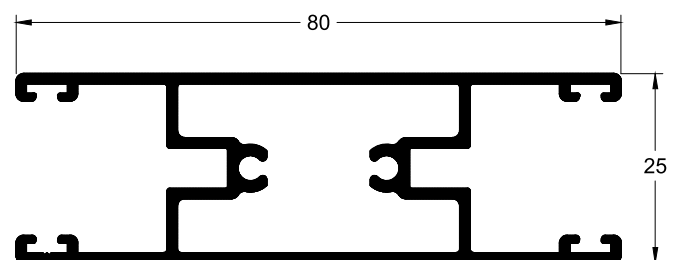
TMN-055
0.382 Kg/m



TMN-007
0.707 Kg/m

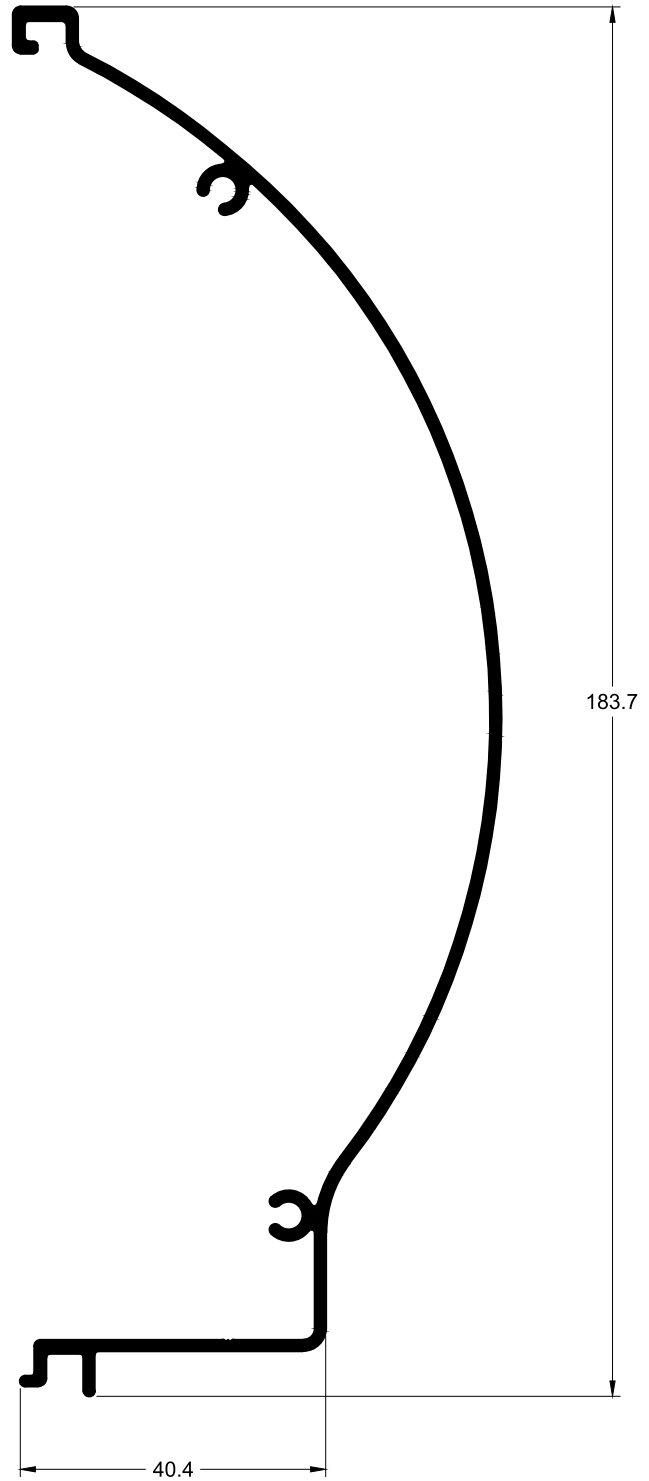
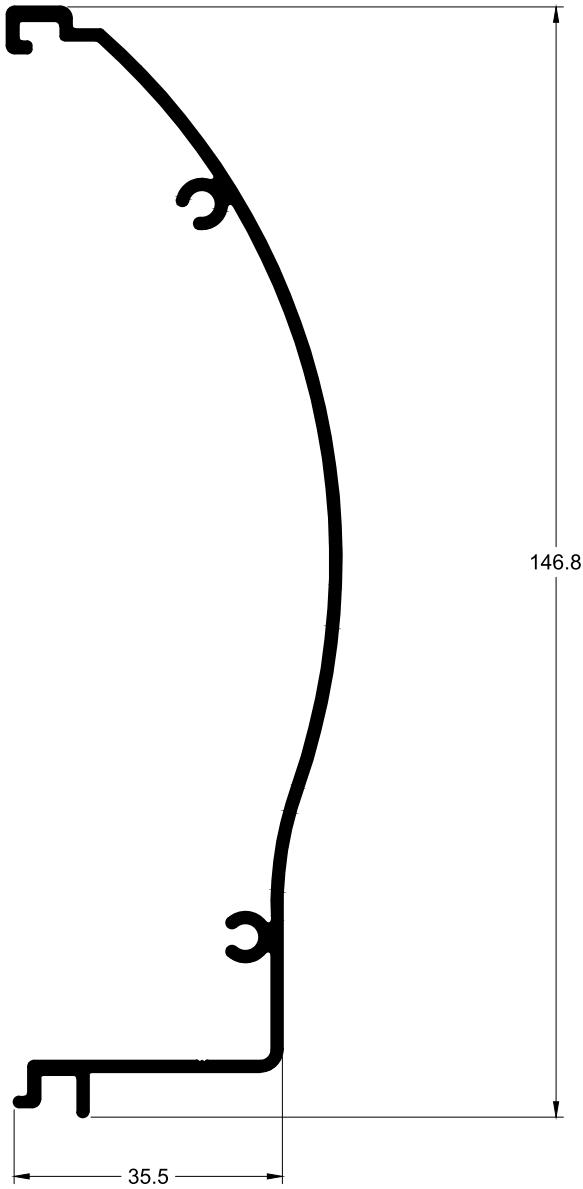


TMN-027
0.987 Kg/m

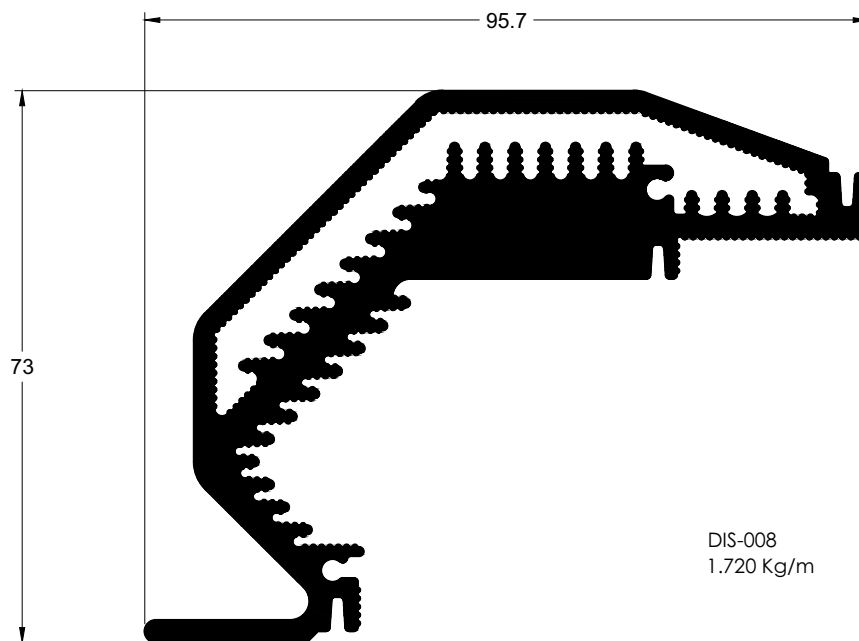


TMN - 501
0.923 Kg/m

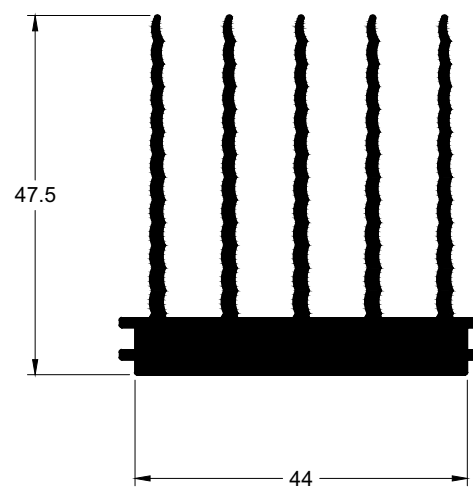
TMN - 502
1.128 Kg/m



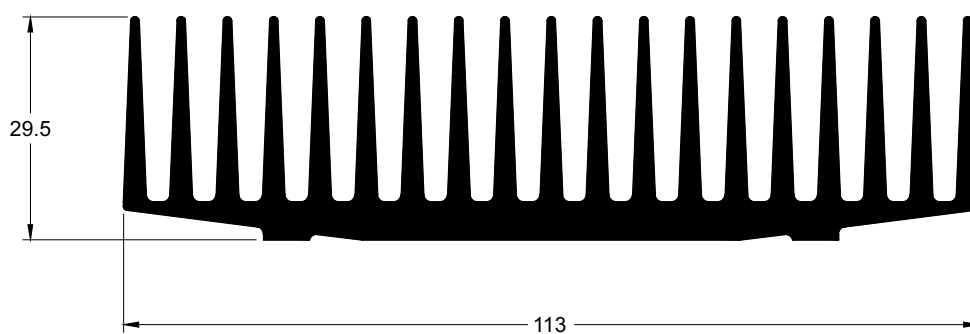
DIS-010
3.825 Kg/m



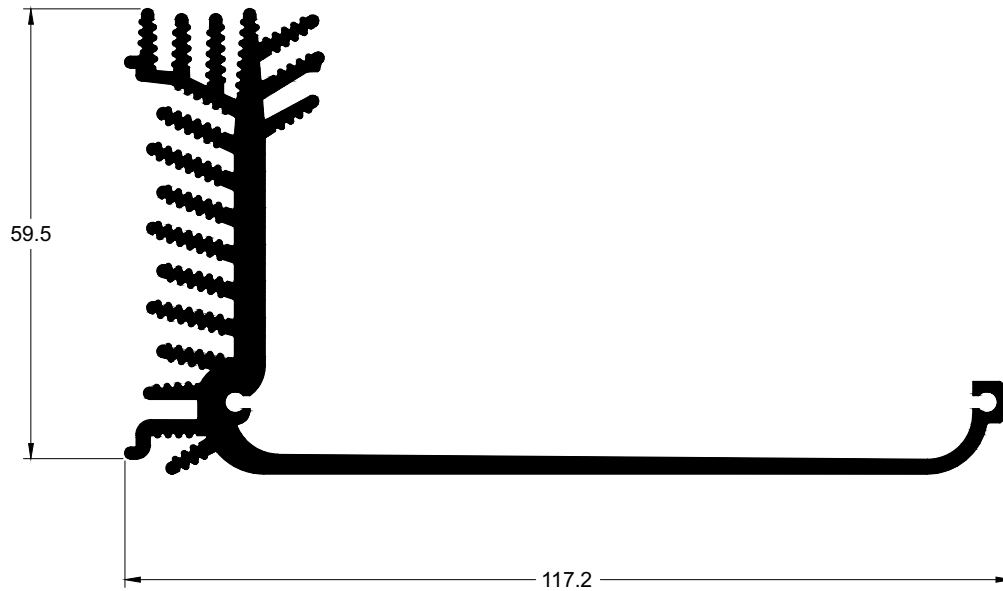
DIS-008
1.720 Kg/m



DIS-009
3.769 Kg/m



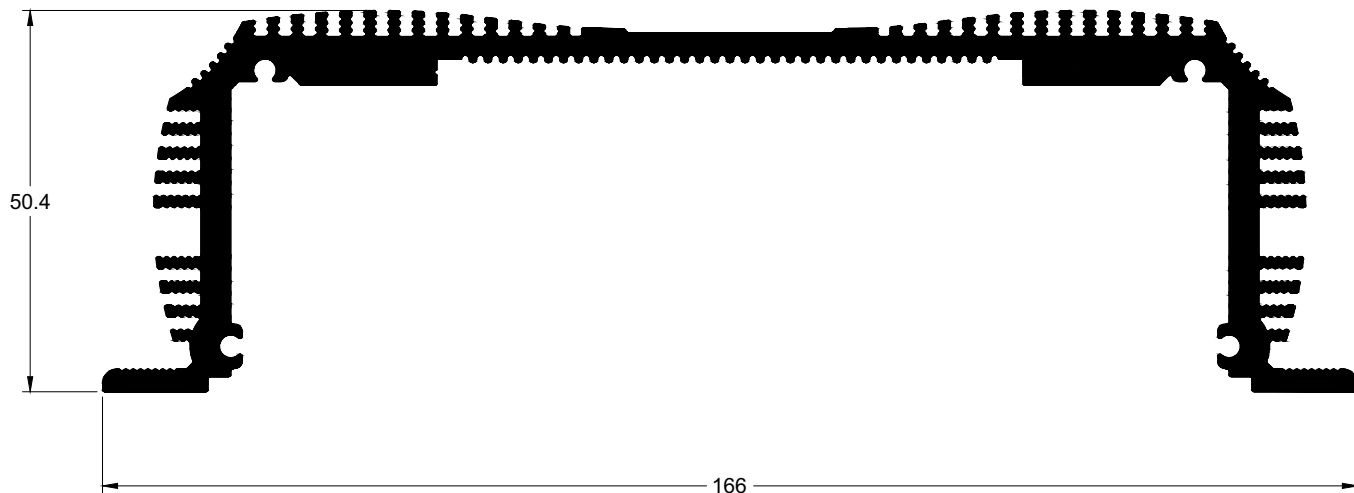
DIS-053
2.103 Kg/m



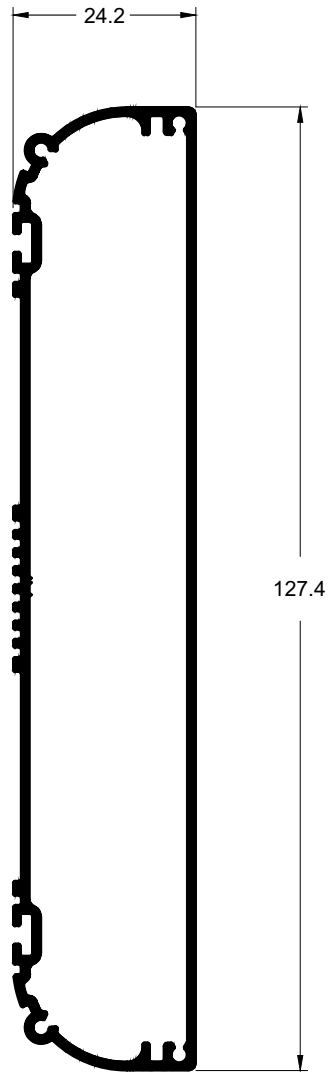
DIS-028
2.274 Kg/m



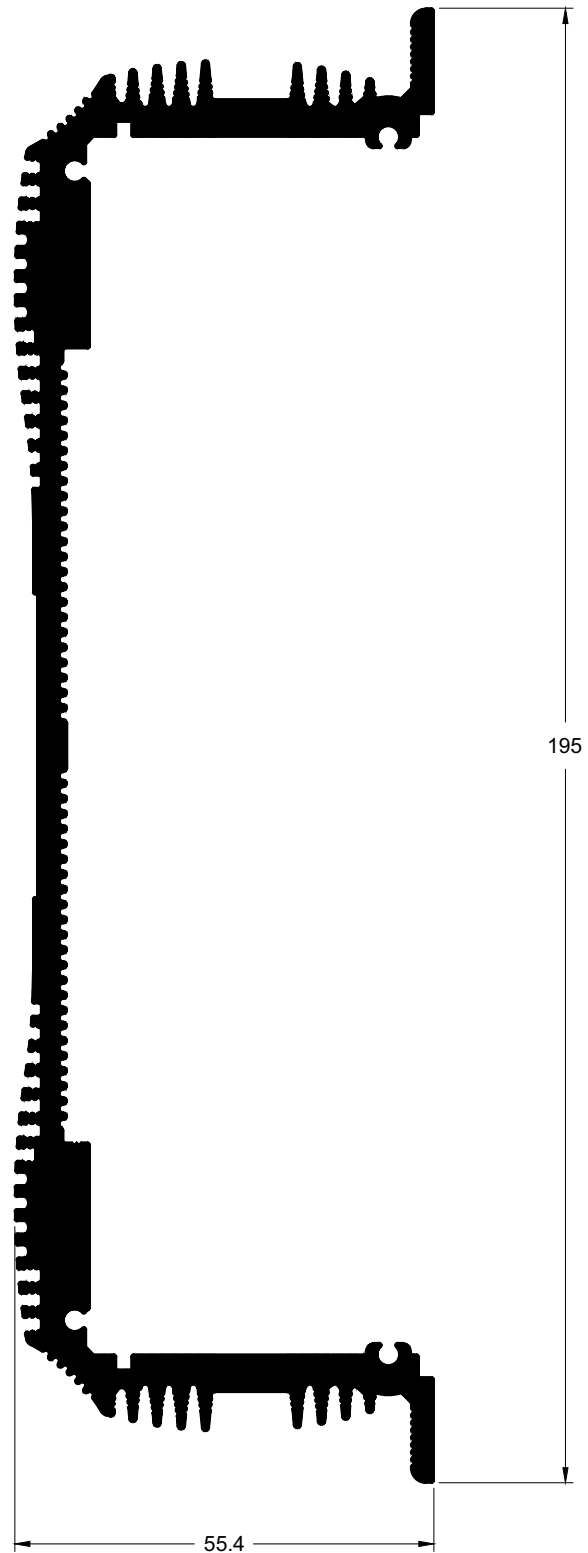
DIS-026
3.413 Kg/m



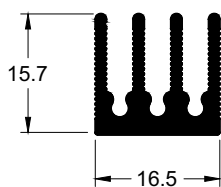
DIS-467
1.093 Kg/m



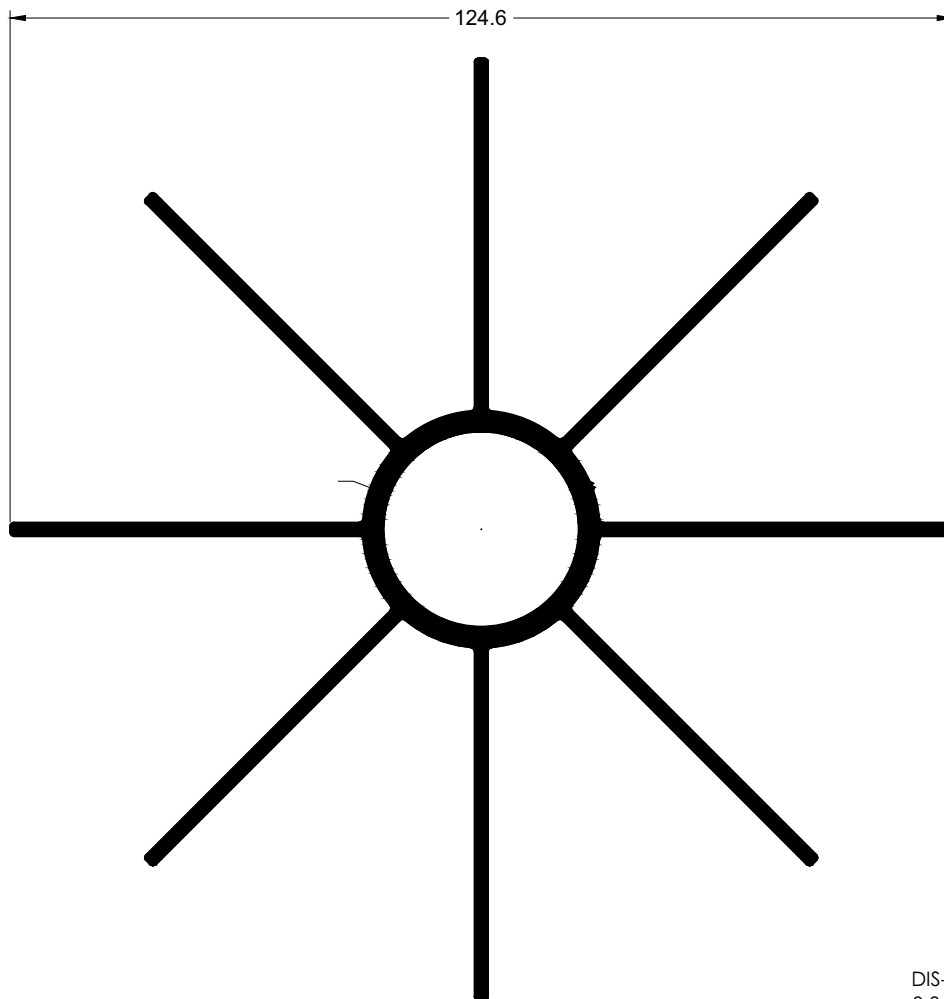
DIS-027
4.011 Kg/m



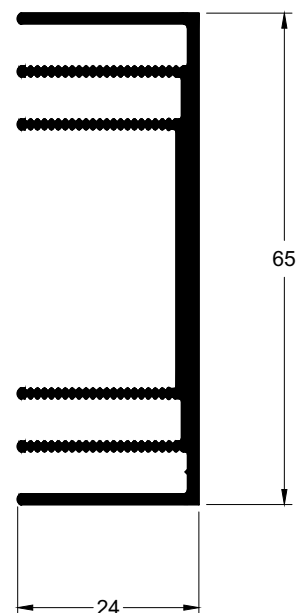
DIS-067
0.345 Kg/m



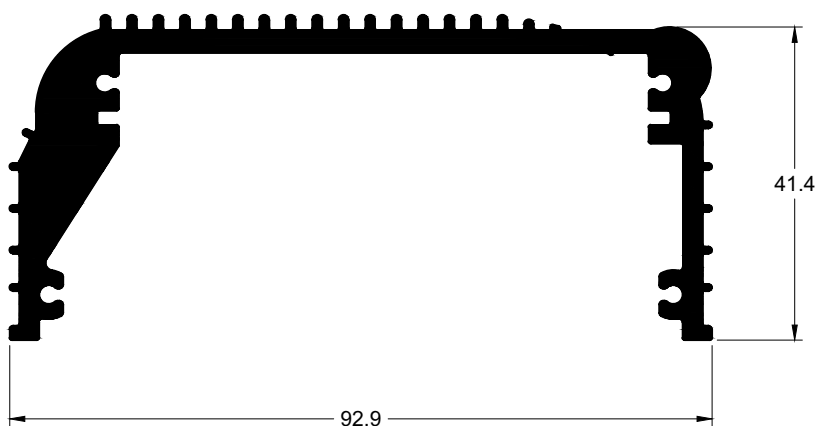
DIS-518
2.500 Kg/m



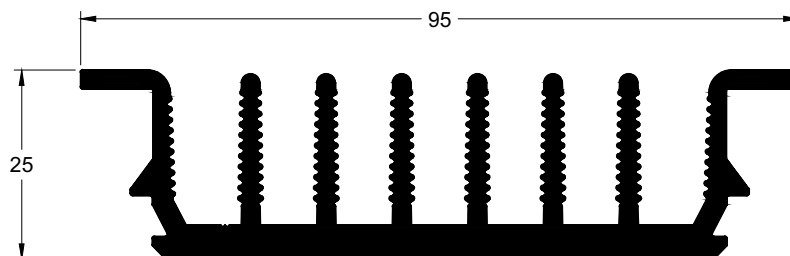
DIS-068
0.866 Kg/m



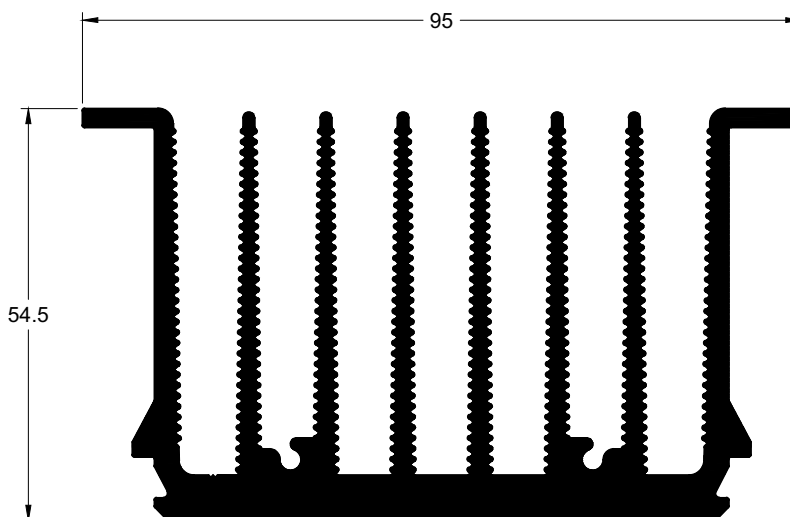
DIS-011
2.035 Kg/m



DIS-055
2.125 Kg/m



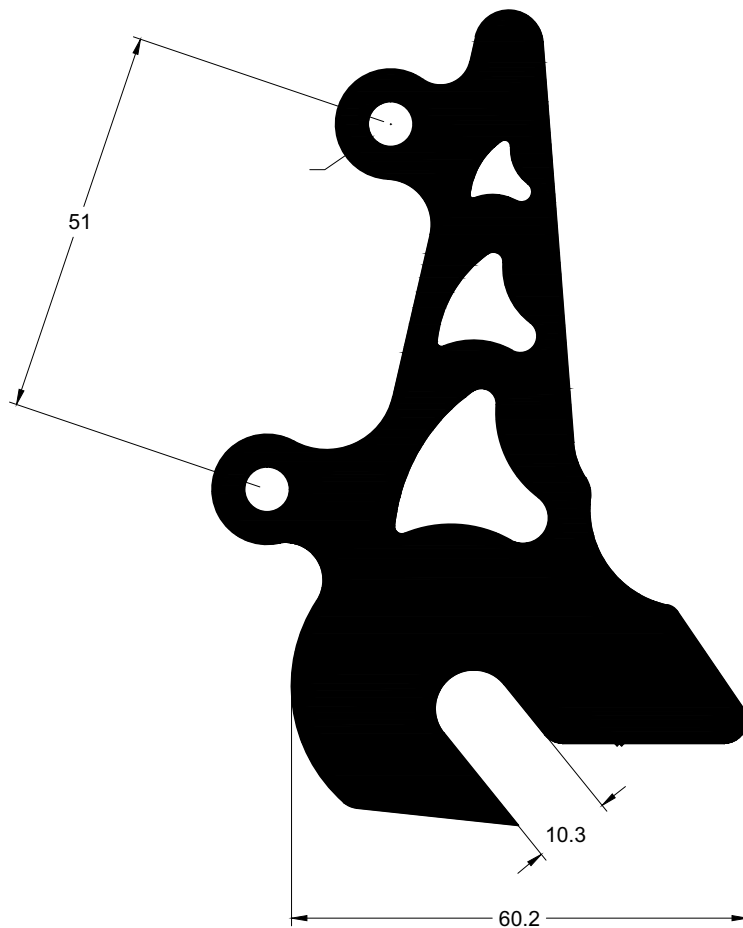
DIS-062
3.943 Kg/m



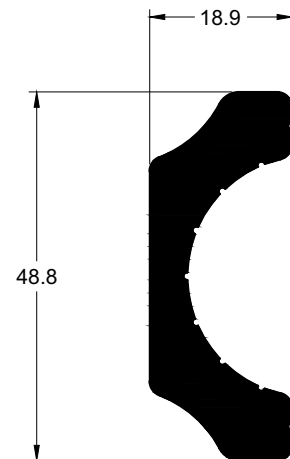
DIS-031
2.311 Kg/m



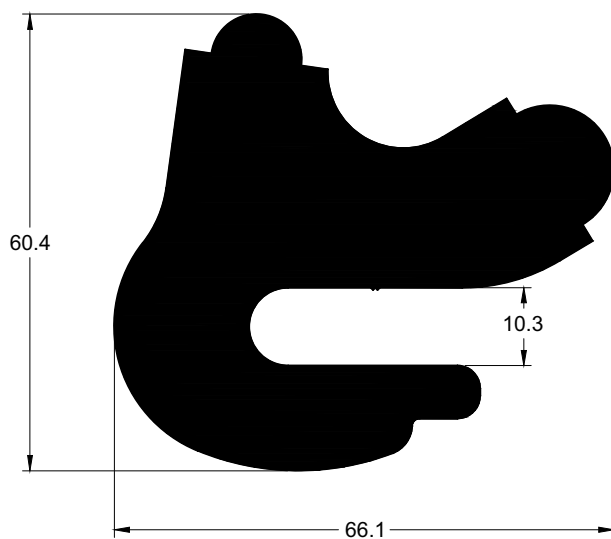
TB-0002
7.574 Kg/m



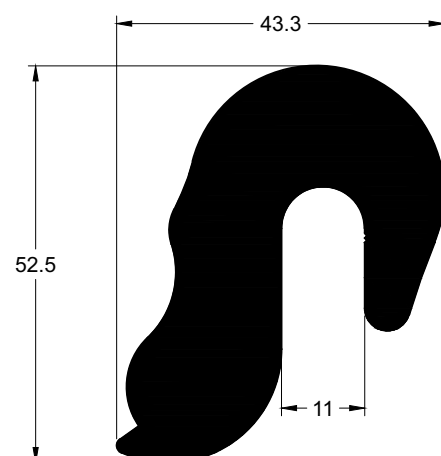
TB-0005
1.247 Kg/m



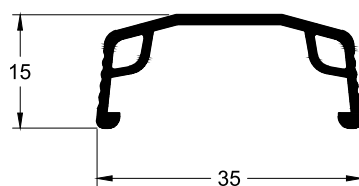
TB-0001
5.858 Kg/m



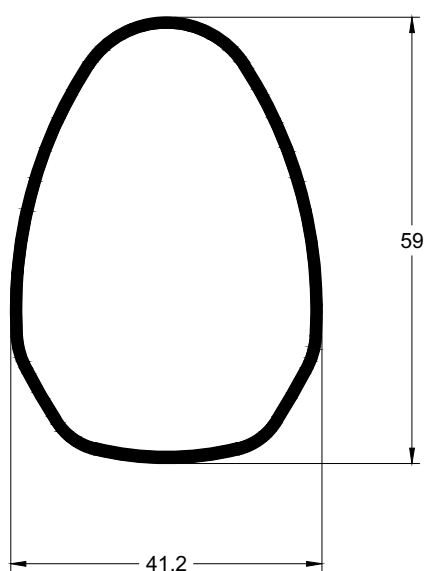
TB-0006
3.143 Kg/m



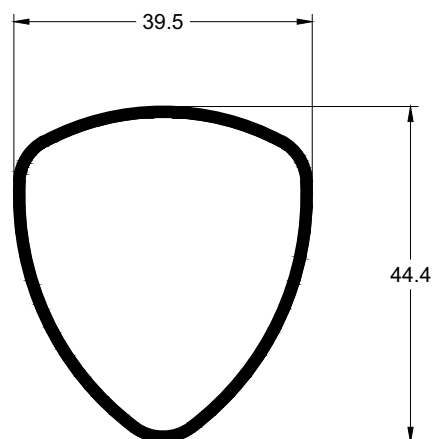
TP - 0222
0.242 Kg/m



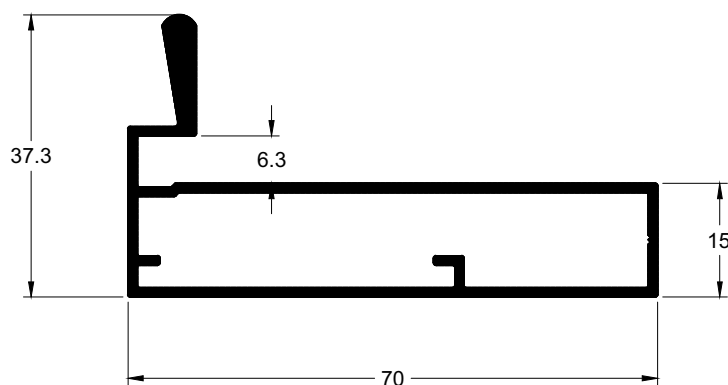
TB-0003
0.602 Kg/m



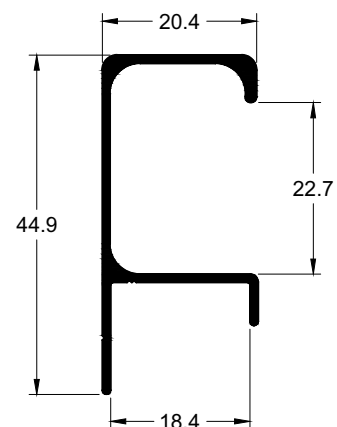
TB-0004
0.487 Kg/m



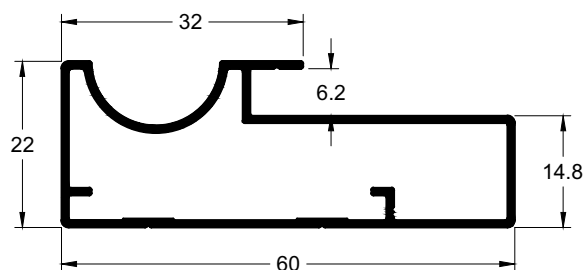
TDP-596
0.756 Kg/m



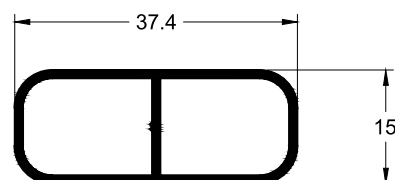
TDP-573
0.300 Kg/m



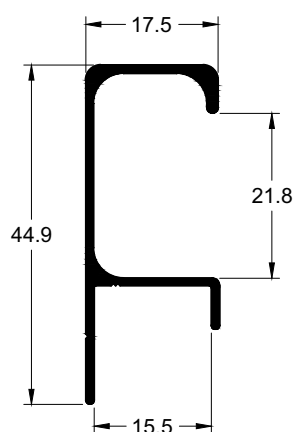
TDP-614
0.506 Kg/m



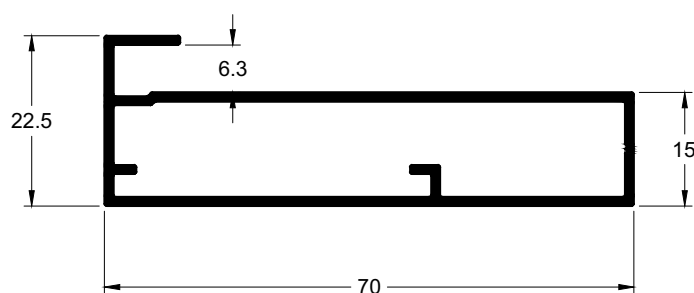
TM-0775
0.314 Kg/m



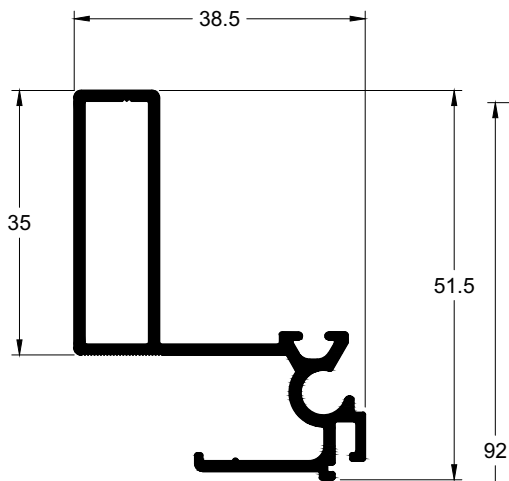
TDP-572
0.279 Kg/m



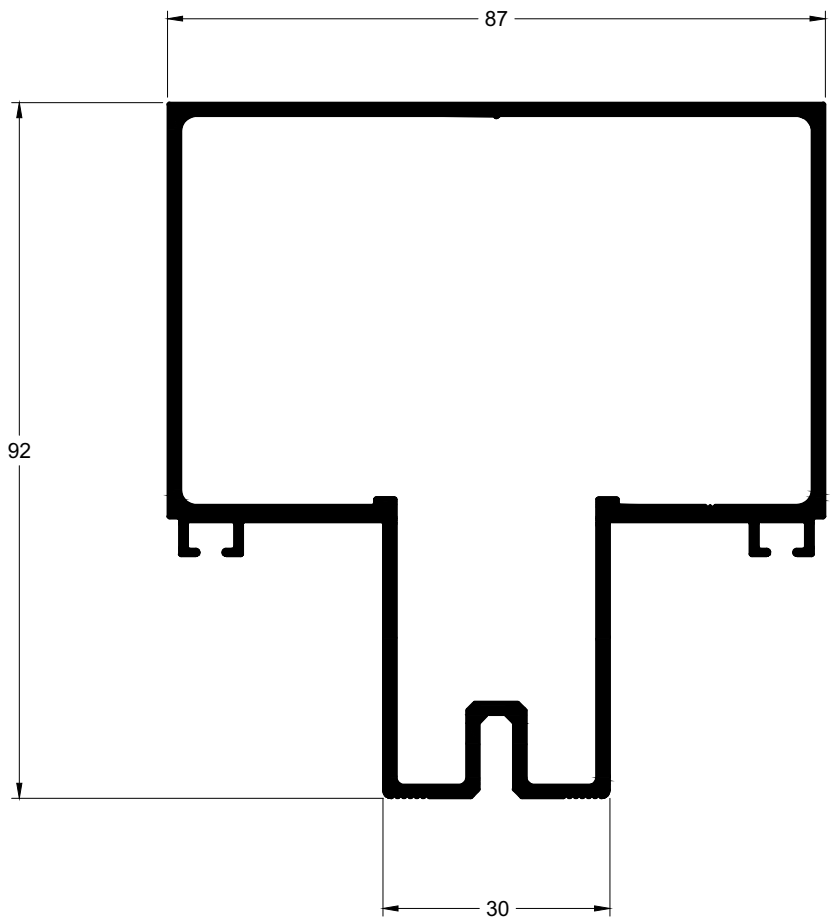
TDP-595
0.622 Kg/m



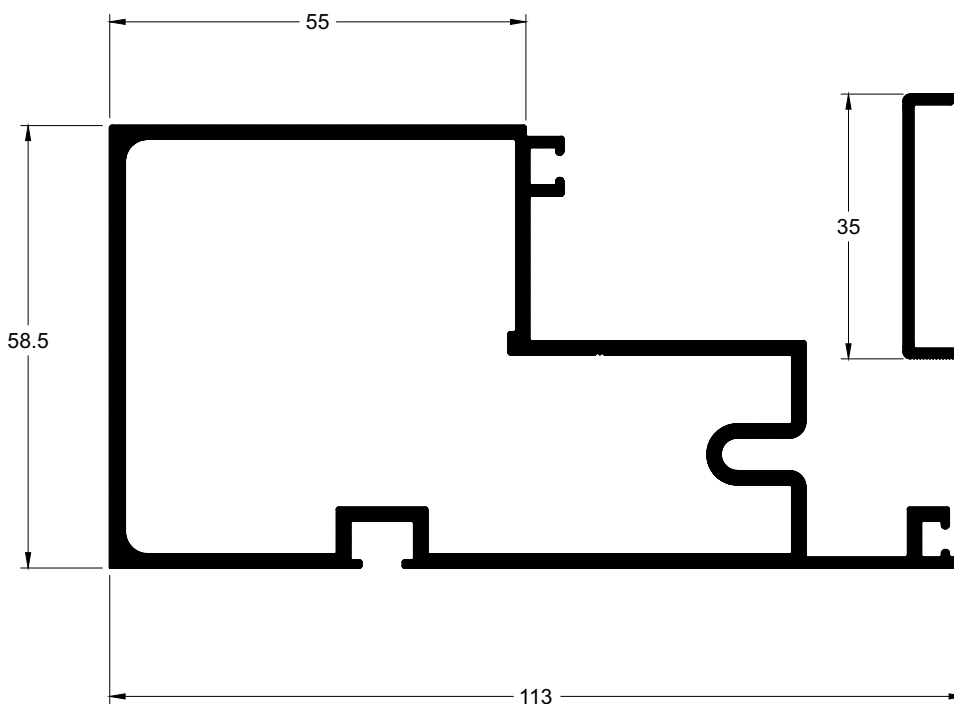
TFA-403
0.631 Kg/m



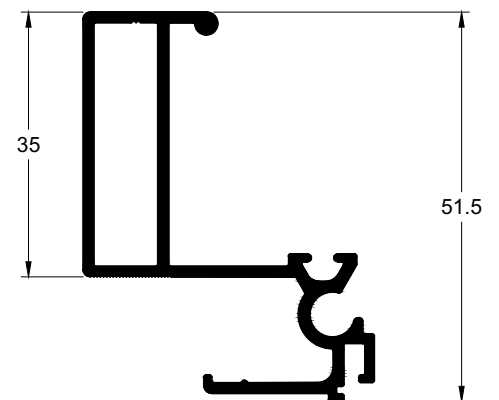
TFA-200
1.986 Kg/m



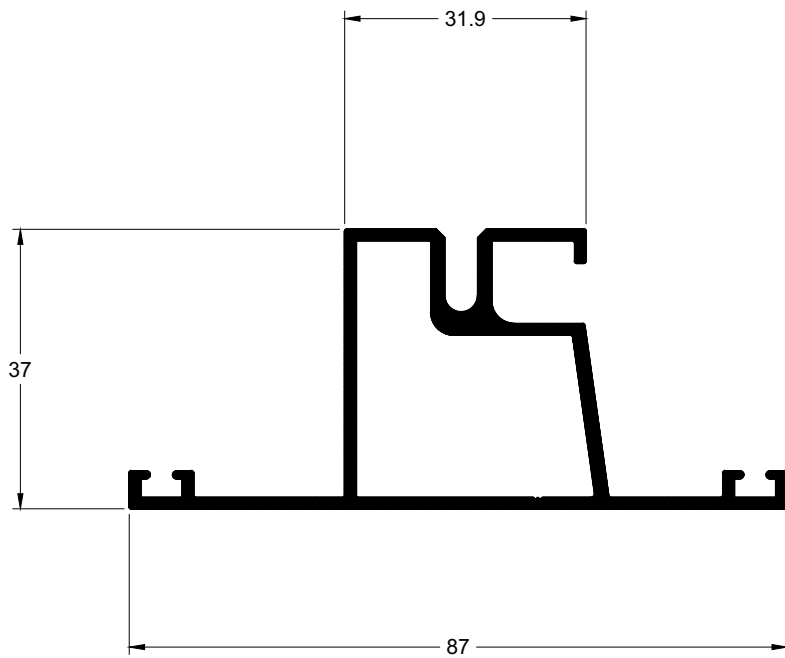
TFA-201
1.817 Kg/m



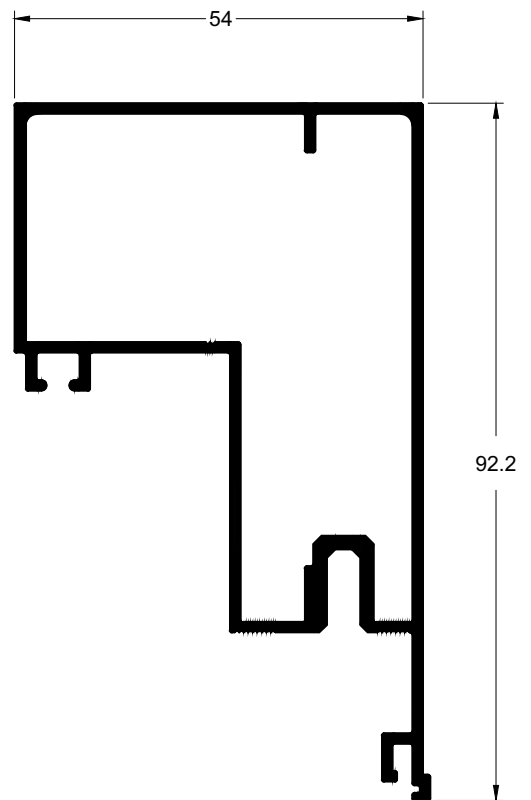
TFA-405
0.666 Kg/m



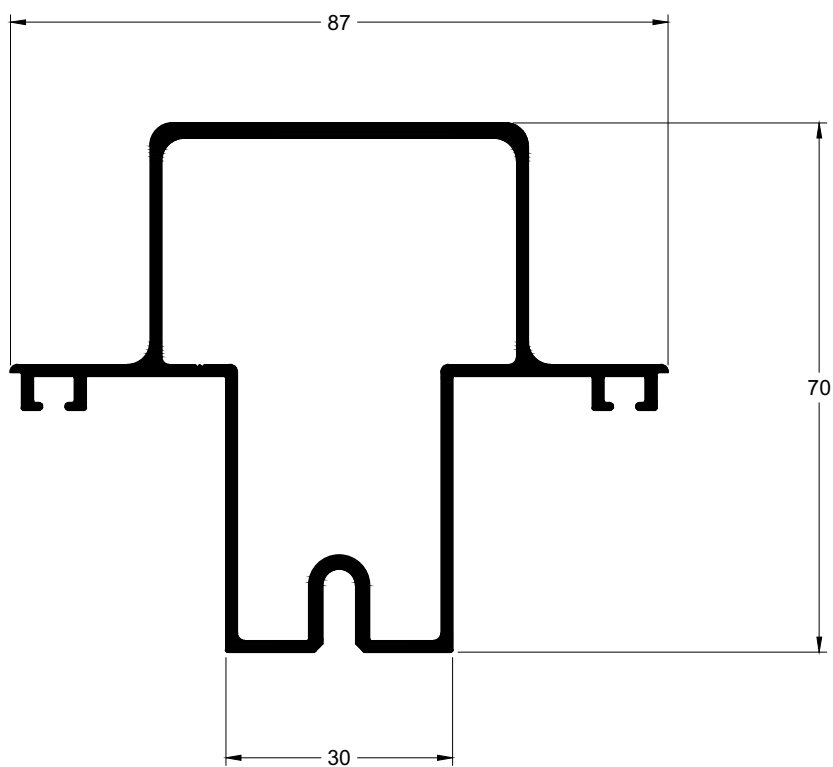
TFA-211
0.999 Kg/m



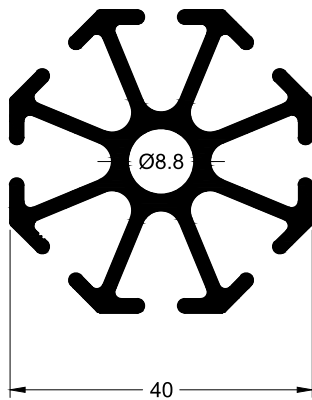
TFA-347
1.255 Kg/m



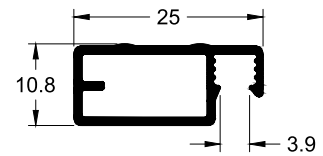
TFA-242
1.355 Kg/m



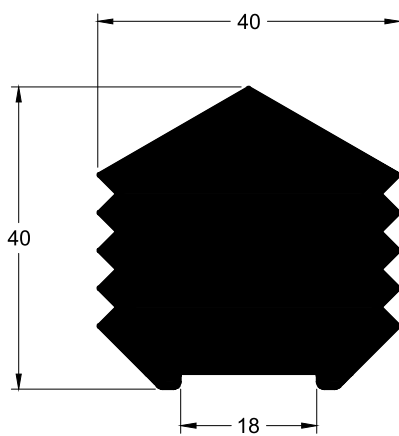
TSD-001
1.150 Kg/m



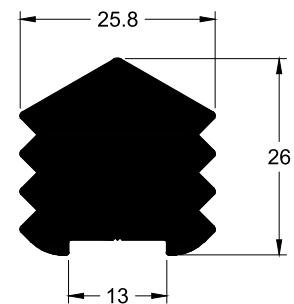
TP-7132
0.205 Kg/m



TP-0193
3.311 Kg/m



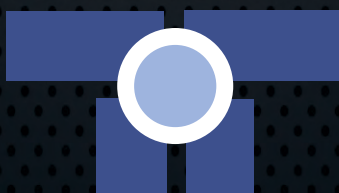
TP-0192
1.379 Kg/m





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Tecnologia em extrusão de alumínio



Tecnoperfil

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