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Specification

DUNE OUTER VESSEL – WEIGHT AND DIMENSION OF ALL COMPONENTS

Abstract

This report lists the components of 1 DUNE outer vessel. Each component should be lowered from the surface to the cavern by the dedicated pit elevator

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Document History

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1. VIEW OF 1 OUTER VESSEL

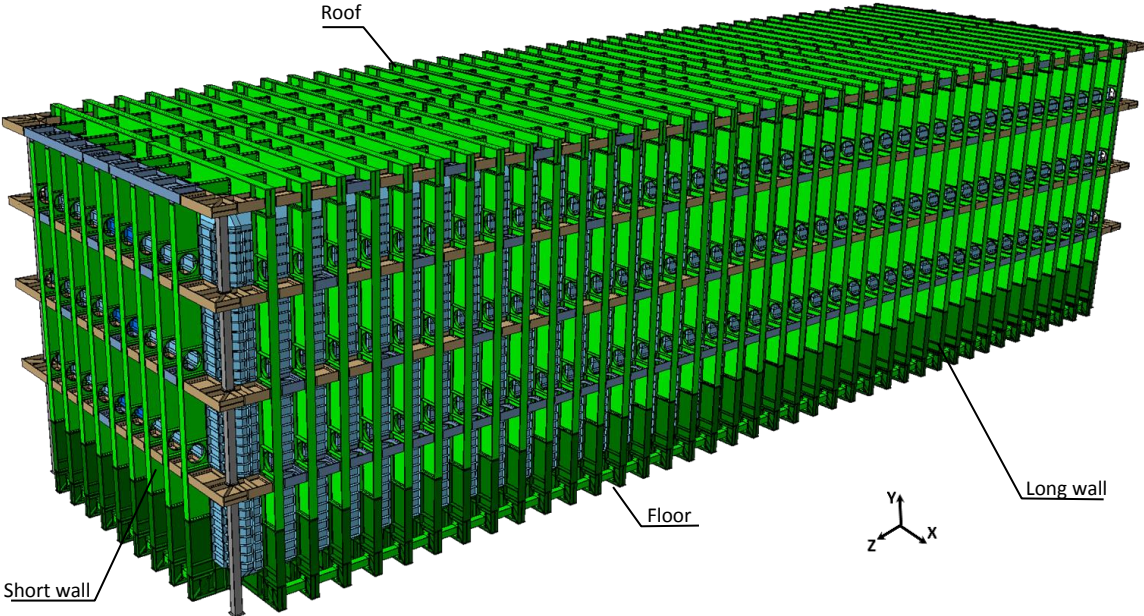


Fig1: Axonometric view of 1 outer vessel

2. LIST OF COMPONENT, DIMENSION AND WEIGHT

composed of:		Quantity	Weight (kg)/unit	Total weight (kg)
F1	Long side Corner beam , HL1100M (5.495x3.608x0.492)	78	6045	471471
F2	Central beam , HL1100M (8x1.108x0.492)	39	6071	236765
F3	Short side Corner beam , HL1100M (3.608x2.299x0.452)	18	3713	66825
F4	Portal spacer beam , HL1100M (1.108x1.108x0.402)	240	710	170280
F5	Ground bracing, long and short sides (1.148x0.775x0.4)	92	259	23782
WM-F1	12mm Warm membrane with welded ribs - central module (3.2x1.6x0.162)	34	728	24759
WM-F2	12mm Warm membrane with welded ribs -intermediate module (1.6x1.6x0.162)	68	347	23562
WM-F3	12mm Warm membrane with welded ribs -external module (4.66x1.6x0.162)	68	1053	71584
WM-F4	12mm Warm membrane with welded ribs -central for portals 2 and 3 (3.2x1.6x0.162)	8	692	5535
WM-F5	12mm Warm membrane with welded ribs -external for portals 2 and 3 (4.66x1.6x0.162)	8	1018	8140
WM-F6	12mm Warm membrane with welded ribs -central for extremity portals (3.2x0.9x0.162)	4	421	1685
WM-F7	12mm Warm membrane with welded ribs -external for extremity portals (4.66x0.9x0.162)	4	620	2482
F	Floor	1	1106870	1106870
R1	Main roof beam , HL1100M (9.46x1.108x0.402)	78	4969	387559
R2	Portal spacer beam , HEB600 (1.578x0.650x0.300)	228	447	101825
R3	Extremity beam, link to short wall toward X, HEB600 (1.40x0.650x0.300)	12	407	4884
WM-R1	12mm Warm membrane with welded ribs - central short module (3.6x1.6x0.162)	38	853	32395
WM-R2	12mm Warm membrane with welded ribs - central long module (4x1.6x0.162)	38	948	36032
WM-R3	12mm Warm membrane with welded ribs -external module (4.062x1.6x0.162)	76	960	72983
WM-R4	12mm Warm membrane with welded ribs -short central - extremity portals (3.6x0.9x0.162)	2	530	1060
WM-R5	12mm Warm membrane with welded ribs -long central - extremity portals (4x0.9x0.162)	2	591	1181
WM-R6	12mm Warm membrane with welded ribs -external for extremity portals (4.06x0.9x0.162)	4	598	2394
R	Roof	1	640312	640312
SW1	Vertical beam , HL1100M (13.637x1.133x0.492)	9	8384	75458
LW/SW2	Horiz.SpacerBeam with access hole(moment connection), HL1100M (1.108x1.108x0.402)	7	710	4967
LW/SW3	Horiz.SpacerBeam without access hole(moment connect.),HL1100M (1.108x1.108x0.402)	17	805	13688
SW4	Horizontal L Corner beam, Linked to long wall HL1100M (2.849x2.274x0.452)	6	3115	18691
SW5	Top Horizontal L Corner beam, Linked to long wall HL1100M (2.349x2.479x0.427)	2	2724	5447
SW6	Horizontal top beam link to the roof(Central), HL1100M (2.4x1.108x0.600)	1	1690	1690
SW7	Horizontal top beam link to the roof(long), HL1100M (5.946x1.108x0.600)	2	4081	8162
SW8	Vertical pillar for L corner, ground to Level 1(5.384x0.5x0.5)	2	723	1445
SW9	Vertical pillar for L corner, intermediate Levels (3.548x0.5x0.5)	4	284	1135
SW10	Vertical pillar for L corner, Level 3 to Level 4 (3.224x0.5x0.5)	2	465	931
WM-SW1	12mm Warm membrane with welded ribs-central module Gr. to level 1(4.5x1.6x0.658)	8	1062	8492
WM-SW2	12mm Warm membrane with welded ribs - central module intermediate level (4x1.6x0.162)	16	919	14696
WM-SW3	12mm Warm membrane with welded ribs - central module top level (3.12x1.6x0.658)	8	717	5738
WM-SW4	12mm Warm membrane with welded ribs-extremity module Gr. to level 1(4.5x1.2x0.658)	2	844	1687
WM-SW5	12mm Warm membrane with welded ribs-extremity module intern. level (4x1.2x0.162)	4	732	2926
WM-SW6	12mm Warm membrane with welded ribs - extremity module top level (3.12x1.2x0.658)	2	565	1131
WM-SW7	12mm Warm membrane with welded ribs - Corner SW-LW ground to level 1(3.9x1.06x0.334)	2	761	1522
WM-SW8	12mm Warm membrane with welded ribs - Corner SW-LW intermediate level (4x1.06x0.334)	4	773	3093
WM-SW9	12mm Warm membrane with welded ribs - Corner SW-LW top level (2.52x1.06x0.334)	2	495	990
WM-SW10	12mm Warm membrane with welded ribs - Corner SW-LW-Floor/Roof (1.06x0.7x0.6)	4	70	282
SW	Short wall without opening	1	172171	172171

composed of:		Quantity	Weight (kg)/unit	Total weight (kg)
SW1	Vertical beam , HL1100M (13.637x1.133x0.492)	9	8384	75458
LW/SW2	Horizontal spacer beam with access hole (moment connection), HL1100M (1.108x1.108x0.402)	7	710	4967
LW/SW3	Horizontal spacer beam without access hole (moment connect.), HL1100M (1.108x1.108x0.402)	17	805	13688
SW4	Horizontal L Corner beam, Linked to long wall HL1100M (2.849x2.274x0.452)	6	3115	18691
SW5	Top Horizontal L Corner beam, Linked to long wall HL1100M (2.349x2.479x0.427)	2	2724	5447
SW6	Horizontal top beam link to the roof(Central), HL1100M (2.4x1.108x0.600)	1	1690	1690
SW7	Horizontal top beam link to the roof(long), HL1100M (5.946x1.108x0.600)	2	4081	8162
SW8	Vertical pillar for L corner, ground to Level 1(5.384x0.5x0.5)	2	723	1445
SW9	Vertical pillar for L corner, intermediate Levels (3.548x0.5x0.5)	4	284	1135
SW10	Vertical pillar for L corner, Level 3 to Level 4 (3.224x0.5x0.5)	2	465	931
SW11	Removable structure for warm membrane, IPE220 (1.54x0.22x0.11)	38	41	1547
WM-LW/SW1	12mm Warm membrane with welded ribs - central module ground to level 1(4.5x16x0.658)	4	1062	4246
WM-LW/SW2	12mm Warm membrane with welded ribs - central module intermediate level (4x16x0.162)	8	919	7348
WM-LW/SW3	12mm Warm membrane with welded ribs - central module top level (3.12x16x0.658)	4	717	2869
WM-SW4	12mm Warm membrane with welded ribs - extremity module ground to level 1(4.5x12x0.658)	2	844	1687
WM-SW5	12mm Warm membrane with welded ribs - extremity module intermediate level (4x12x0.162)	4	732	2926
WM-SW6	12mm Warm membrane with welded ribs - extremity module top level (3.12x12x0.658)	2	565	1131
WM-SW11	12mm Warm membrane with welded ribs - larger module ground to level 1(4.5x186x0.658)	2	1129	2257
WM-SW12	12mm Warm membrane with welded ribs - larger module intermediate level (4x186x0.162)	4	1037	4149
WM-SW13	12mm Warm membrane with welded ribs - larger module top level (3.12x186x0.658)	2	813	1626
WM-SW14	12mm Warm membrane with welded ribs - under removable,floor_top L beam (2.72x3.08x0.658)	1	1268	1268
WM-SW15	12mm Warm membrane - removable, bottom (up to level 1) (1.82x2.68x0.02)	1	507	507
WM-SW16	12mm Warm membrane - removable, intermediate level (4.02x2.68x0.012)	2	1117	2233
WM-SW17	12mm Warm membrane - removable, top (2.5x2.68x0.02)	1	693	693
WM-SW18	12mm Warm membrane -over removable,Small wall to roof (2.68x0.799x0.115)	1	235	235
WM-SW7	12mm Warm membrane with welded ribs - Corner SW-LW ground to level 1(3.9x1.06x0.334)	2	761	1522
WM-SW8	12mm Warm membrane with welded ribs - Corner SW-LW intermediate level (4x1.06x0.334)	4	773	3093
WM-SW9	12mm Warm membrane with welded ribs - Corner SW-LW top level (2.52x1.06x0.334)	2	495	990
WM-SW10	12mm Warm membrane with welded ribs - Corner SW-LW-Floor/Roof (1.06x0.7x0.6)	4	70	282
SW	Short wall with opening	1	172224	172224
LW1	Vertical beam , HL1100M (13.124x1.158x0.492)	39	8250	321750
LW/SW2	Horizontal spacer beam with access hole (moment connection), HL1100M (1.108x1.108x0.402)	8	710	5676
LW/SW3	Horizontal spacer beam without access hole (moment connect.), HL1100M (1.108x1.108x0.402)	4	805	3221
LW4	Horizontal spacer beam with access hole (pinned connection), HL1100M (1.1518x1.108x0.402)	68	497	33810
LW5	Horizontal spacer beam without access hole (pinned connection), HL1100M (1.1518x1.108x0.402)	72	593	42689
WM-LW/SW1	12mm Warm membrane with welded ribs - central module ground to level 1(4.5x16x0.658)	38	1062	40337
WM-LW/SW2	12mm Warm membrane with welded ribs - central module intermediate level (4x16x0.162)	76	919	69806
WM-LW/SW3	12mm Warm membrane with welded ribs - central module top level (3.12x16x0.658)	38	717	27254
WM-LW4	12mm Warm membrane with welded ribs - extremity module ground to level 1(4.5x0.66x0.658)	2	488	977
WM-LW5	12mm Warm membrane with welded ribs - extremity module intermediate level (4x0.66x0.162)	4	426	1703
WM-LW6	12mm Warm membrane with welded ribs - extremity module top level (3.12x0.66x0.658)	2	325	649
LW	Long wall	2	547870	1095741
Metallic structure				3187317

3. FLOOR COMPONENT

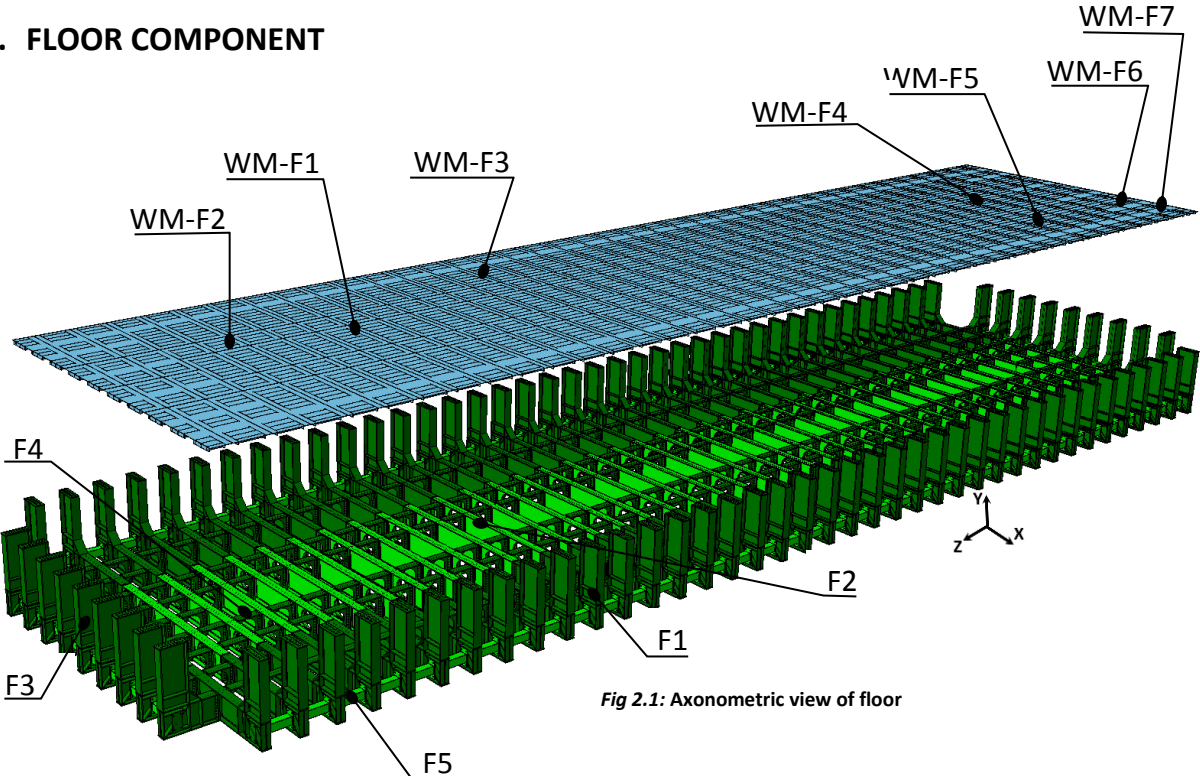


Fig 2.1: Axonometric view of floor

4. ROOF COMPONENT

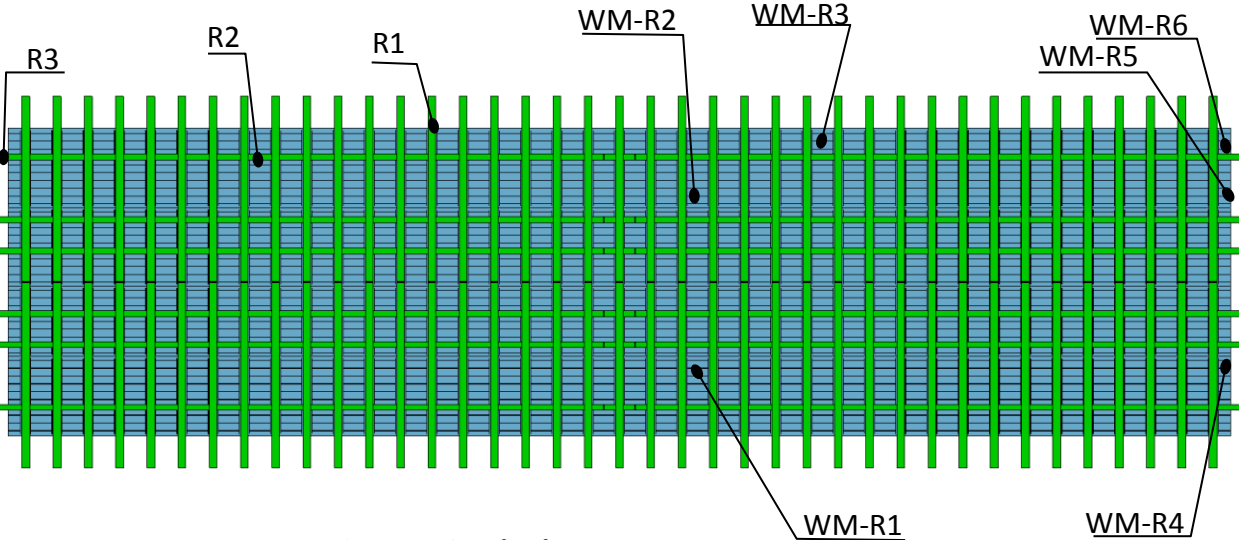


Fig 3.1: Top view of roof

5. SHORT WALL COMPONENT

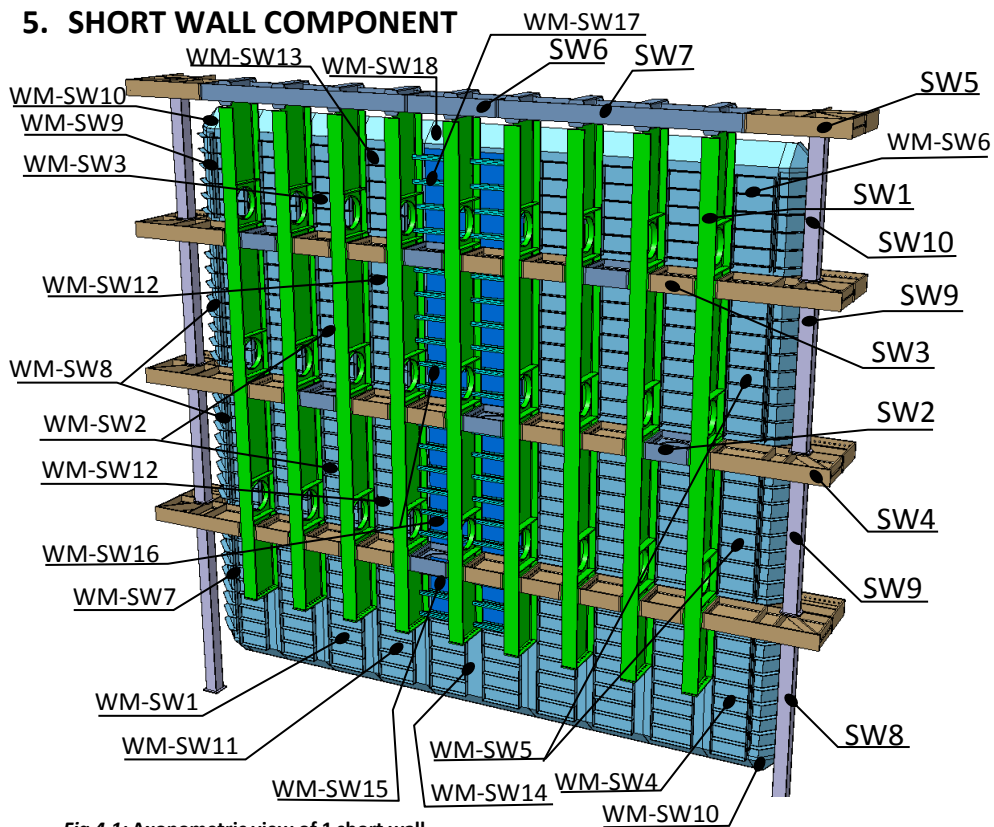


Fig 4.1: Axonometric view of 1 short wall

6. LONG WALL COMPONENT

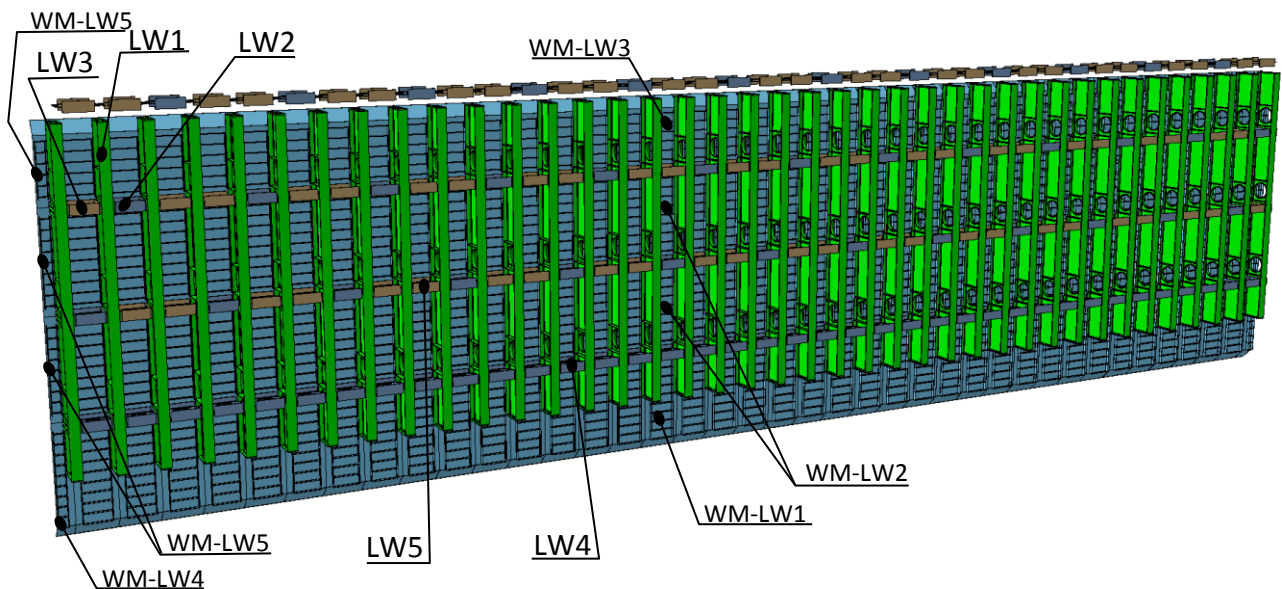
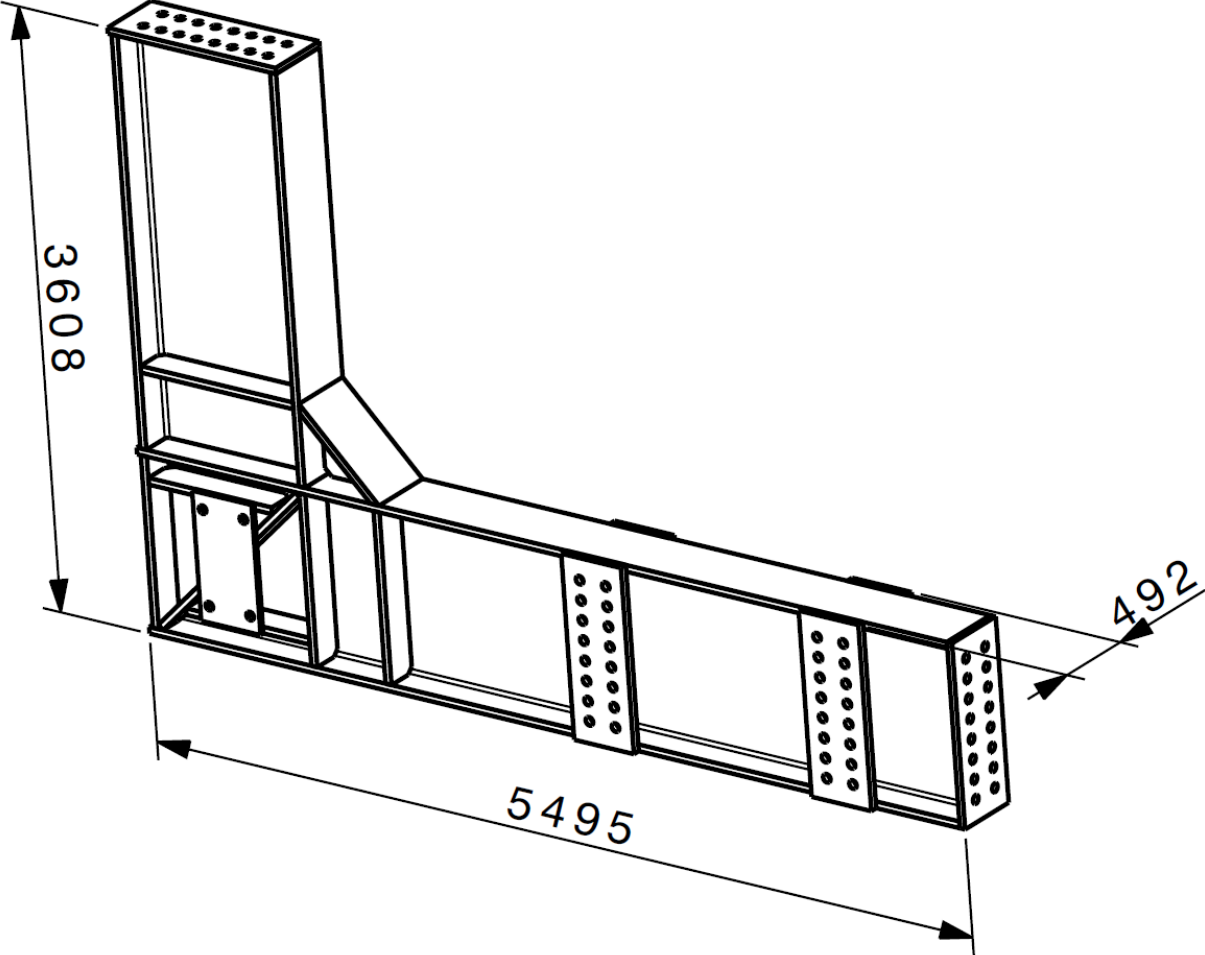
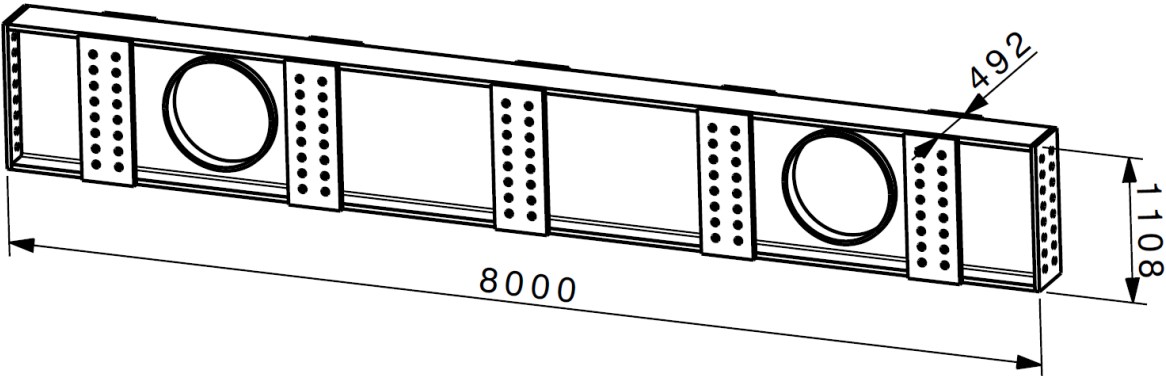


Fig 5.1: Axonometric view of 1 long wall

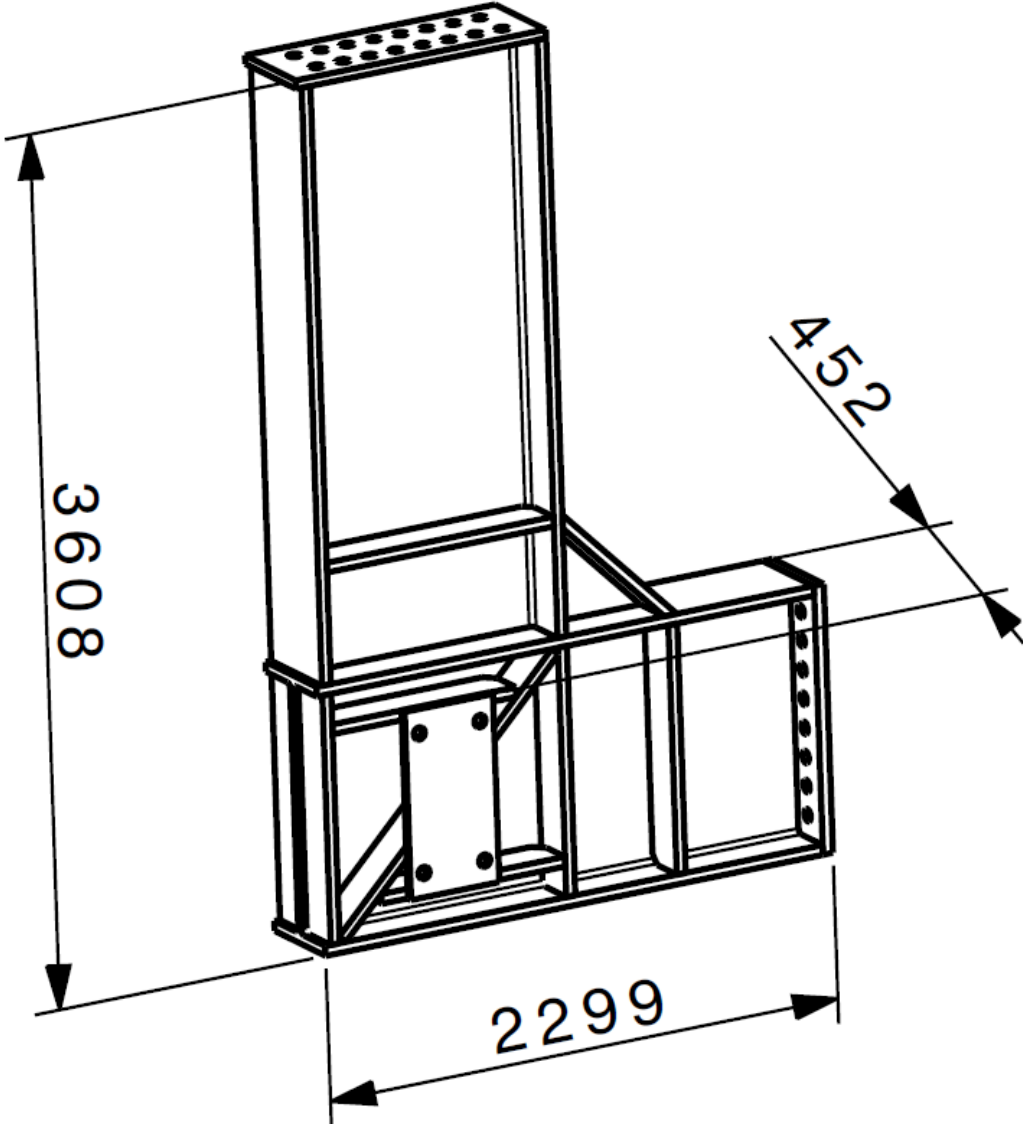
7. COMPONENT DIMENSION



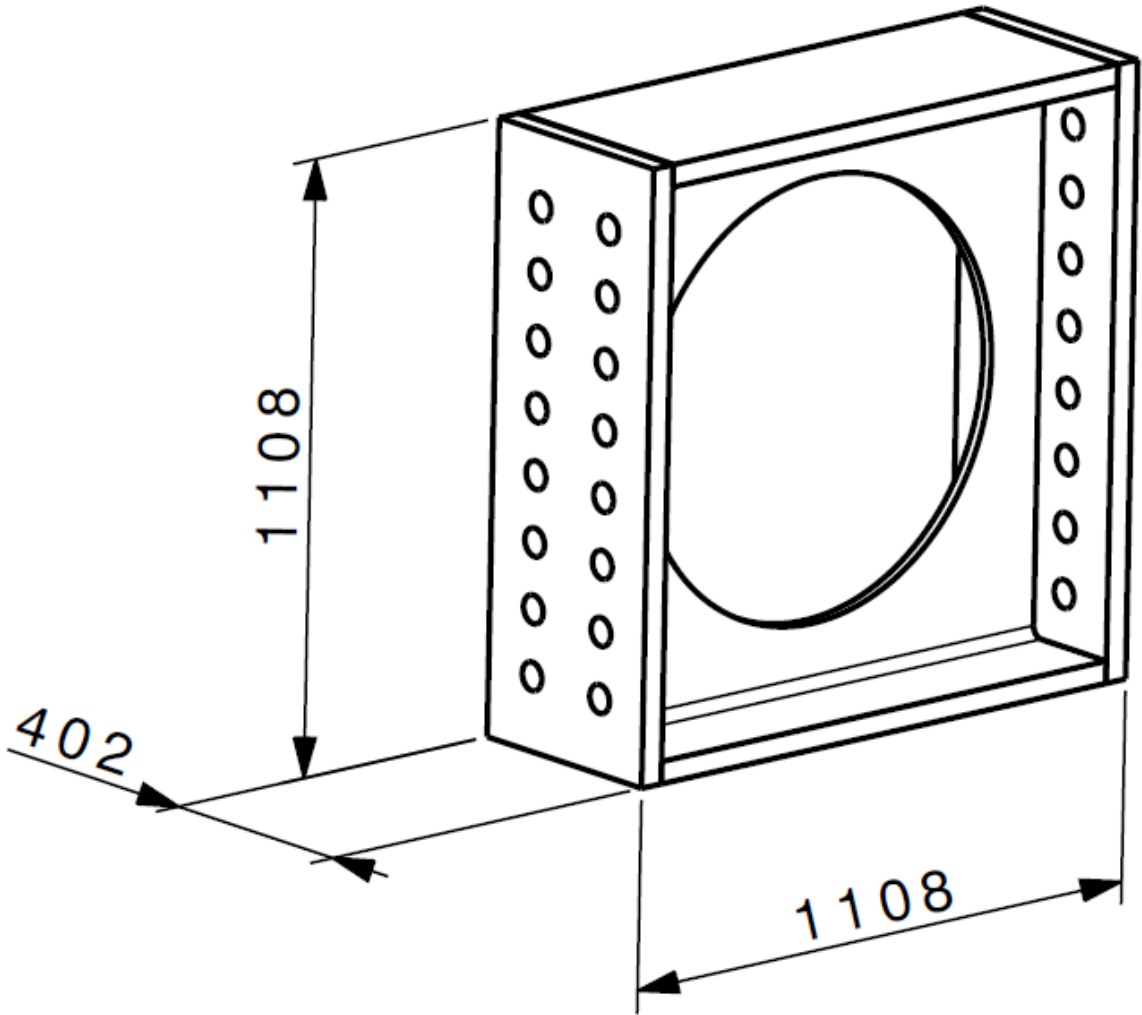
		Quantity	Weight (kg)/unit
F1	Long side Corner beam , HL1100M (5.495x3.608x0.492)	78	6045



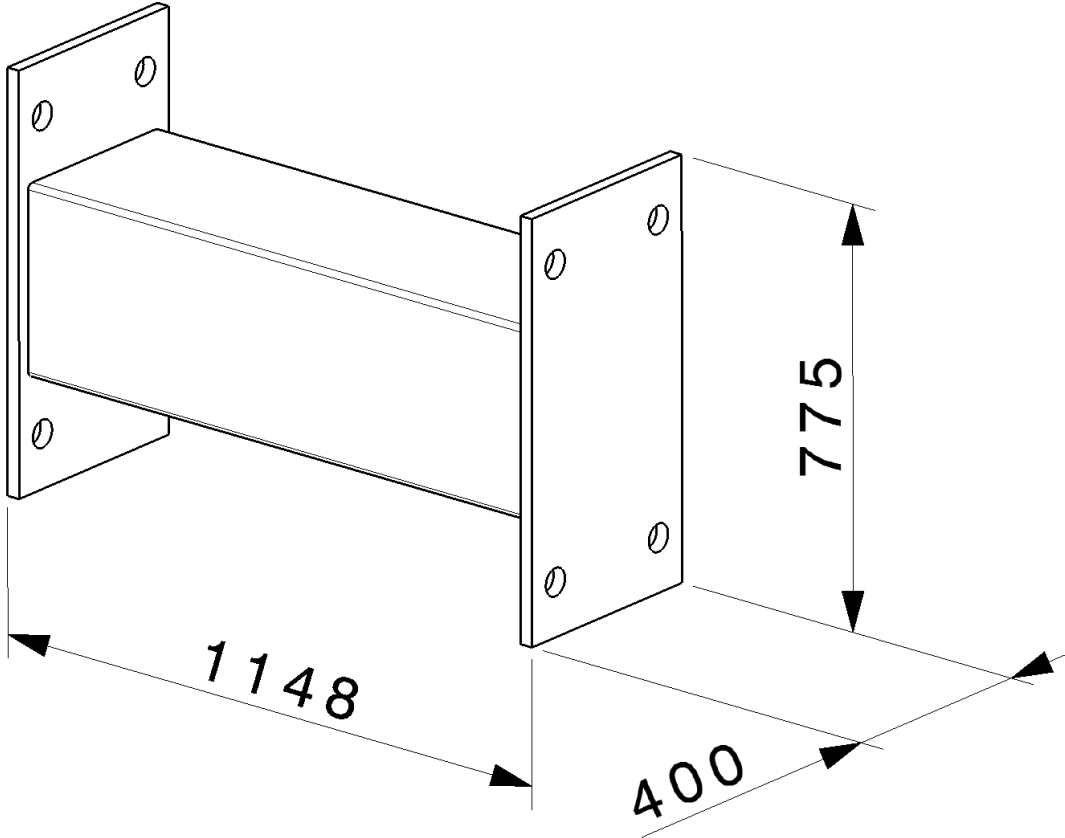
		Quantity	Weight (kg)/unit
F2	Central beam , HL100M (8x1.108x0.492)	39	6071



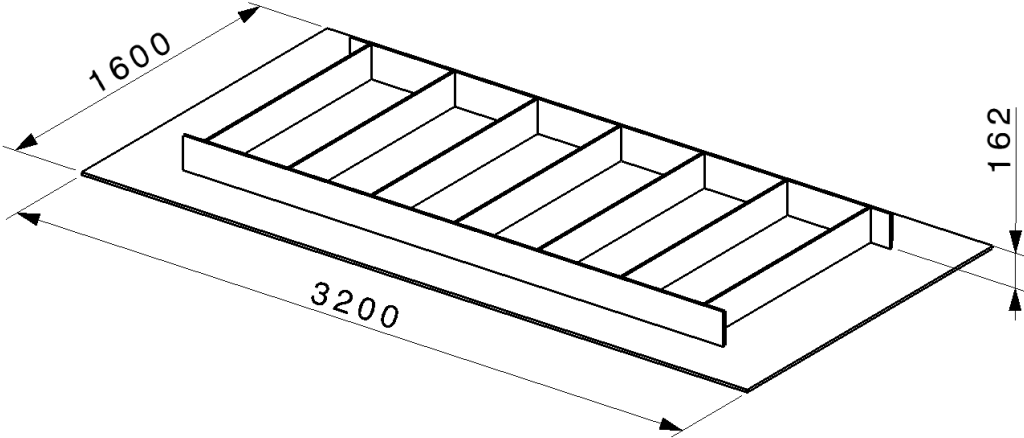
		Quantity	Weight (kg)/unit
F3	Short side Corner beam , HL1100M (3.608x2.299x0.452)	18	3713



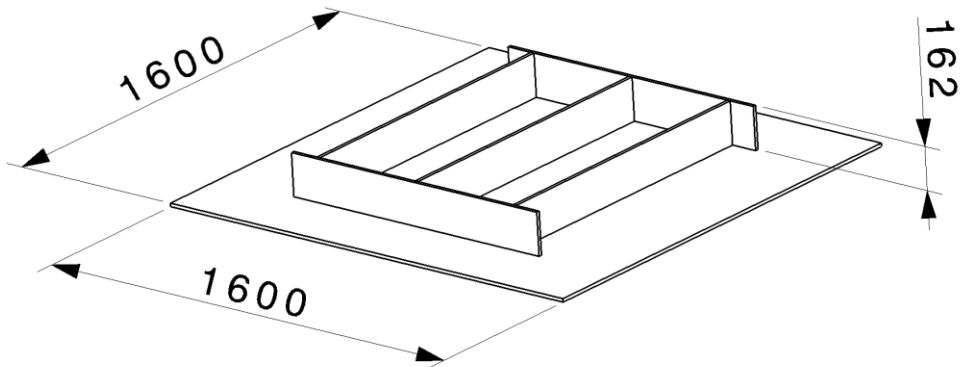
		Quantity	Weight (kg)/unit
F4	Portal spacer beam , HL1100M (1.108x1.108x0.402)	240	710
SW2	Horizontal spacer beam with access hole,	14	
LW2	(moment connection), HL1100M (1.108x1.108x0.402)	16	



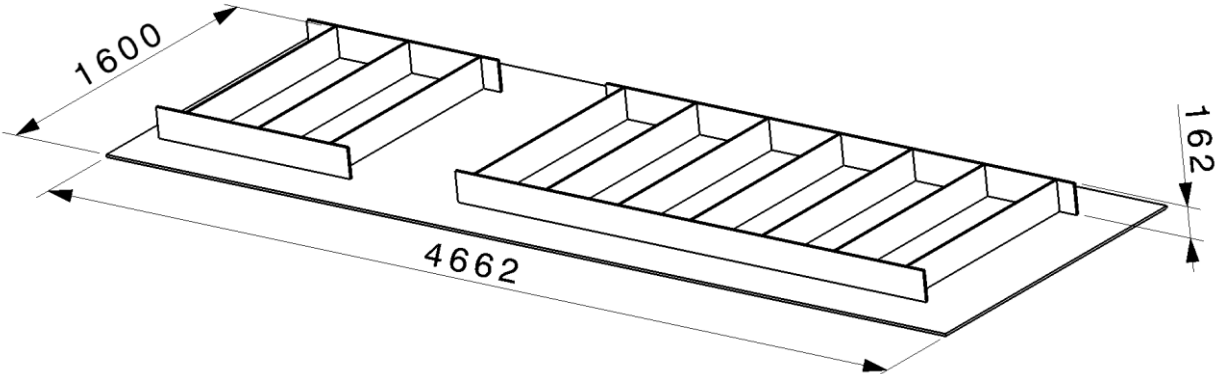
		Quantity	Weight (kg)/unit
F5	Ground bracing, long and short sides (1.148x0.775x0.4)	92	259



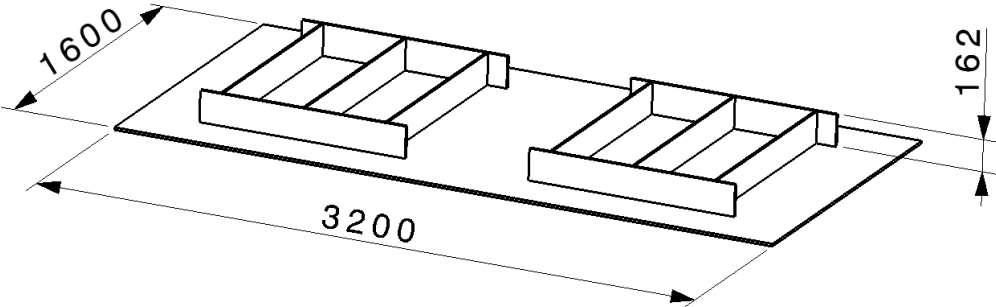
		Quantity	Weight (kg)/unit
WM-F1	12mm Warm membrane with welded ribs - central module (3.2x1.6x0.162)	34	728



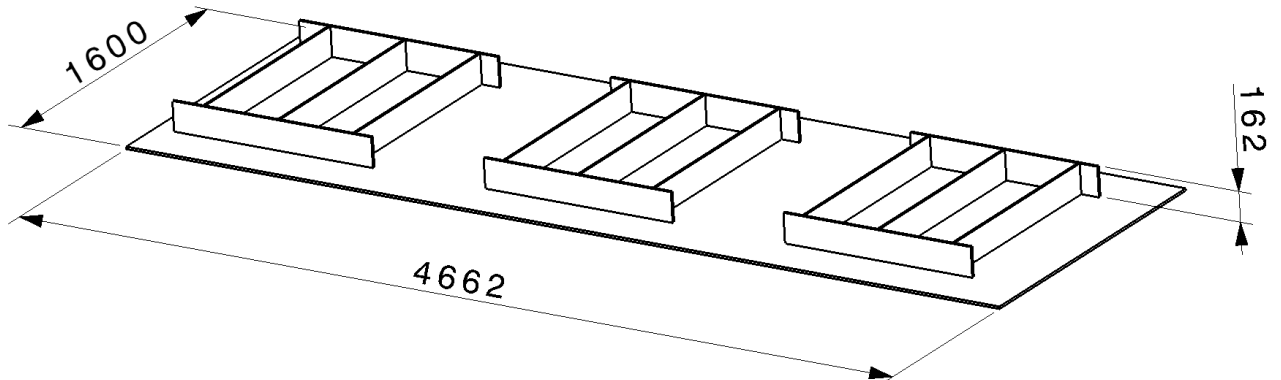
		Quantity	Weight (kg)/unit
WM-F2	12mm Warm membrane with welded ribs - intermediate module (1.6x1.6x0.162)	68	347



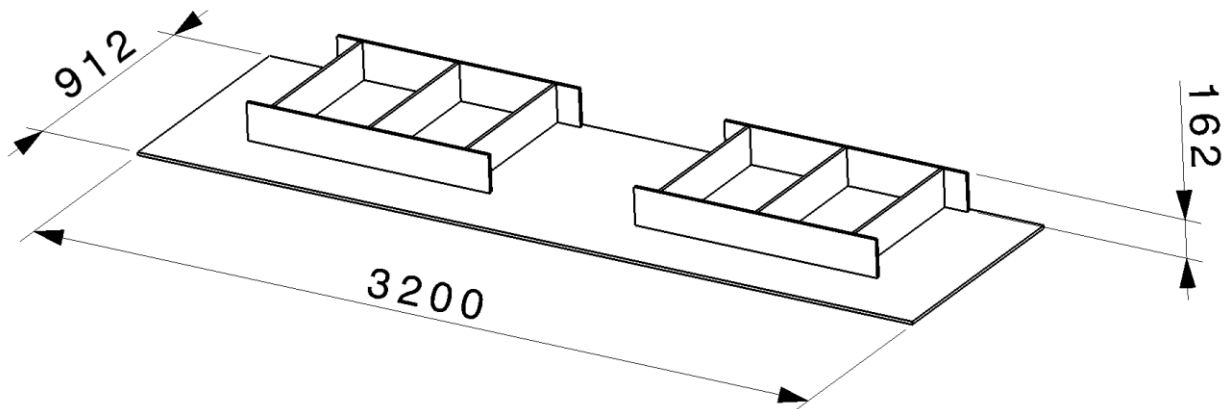
		Quantity	Weight (kg)/unit
WM-F3	12mm Warm membrane with welded ribs - external module (4.66x1.6x0.162)	68	1053



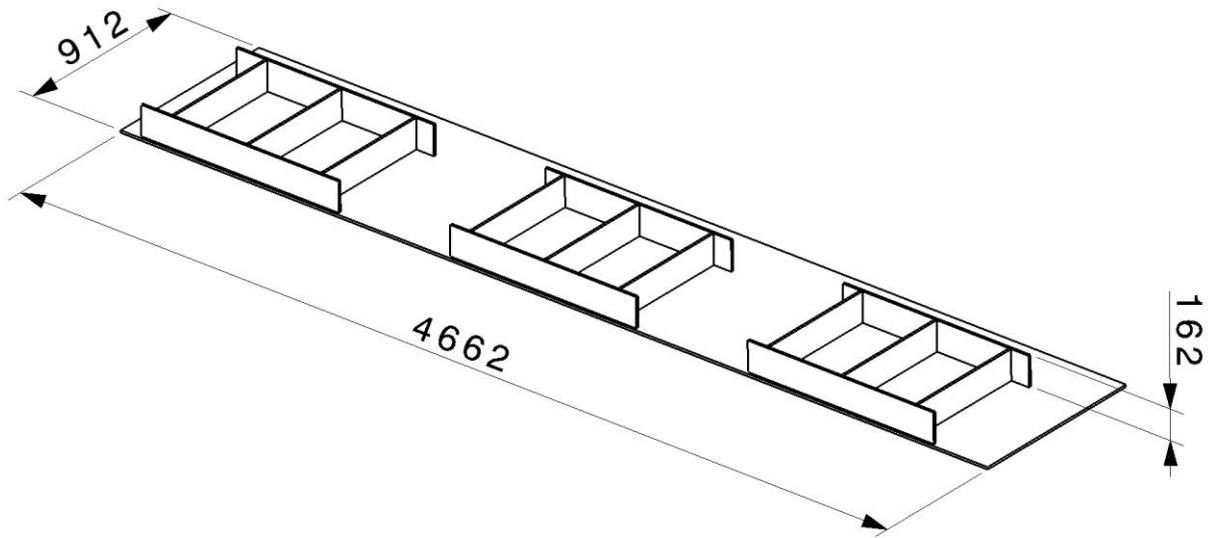
		Quantity	Weight (kg)/unit
WM-F4	12mm Warm membrane with welded ribs - central for portals 2 and 3 (3.2x1.6x0.162)	8	692



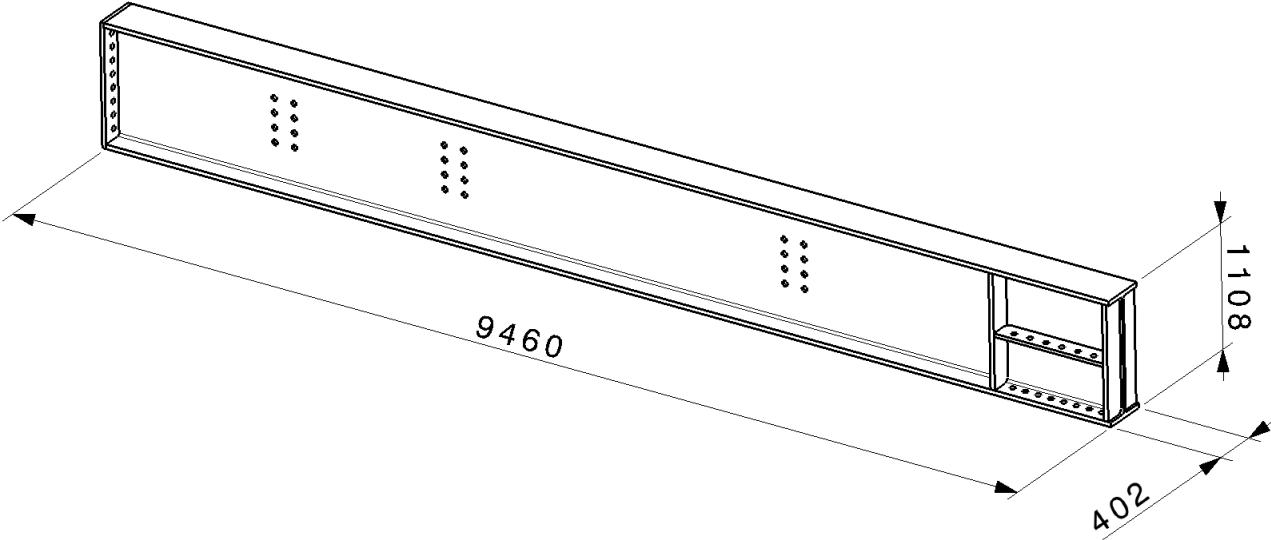
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WM-F5	12mm Warm membrane with welded ribs - external for portals 2 and 3 (4.66x1.6x0.162)	8	1018



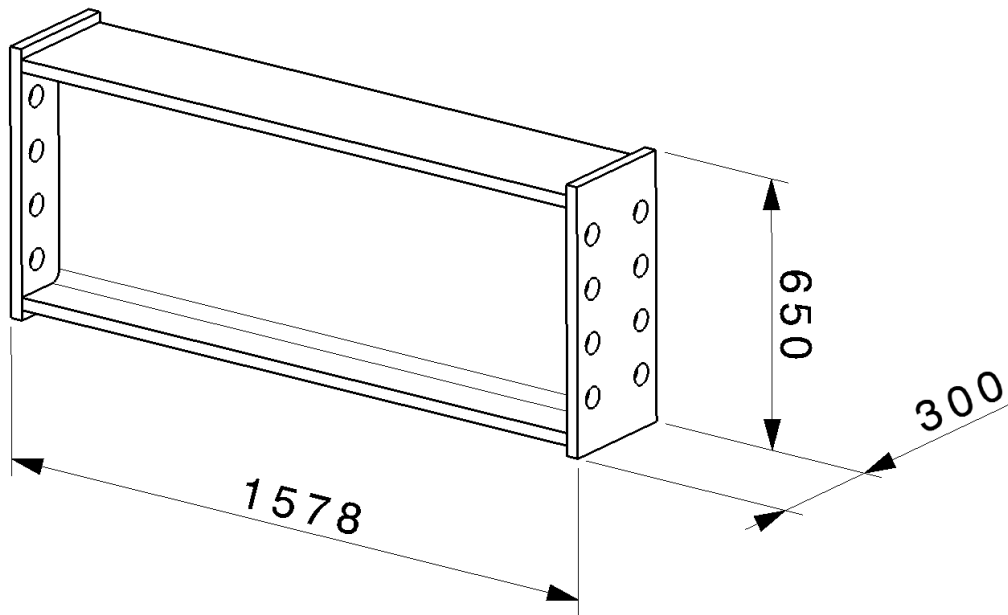
		Quantity	Weight (kg)/unit
WM-F6	12mm Warm membrane with welded ribs - central for extremity portals (3.2x0.91x0.162)	4	421



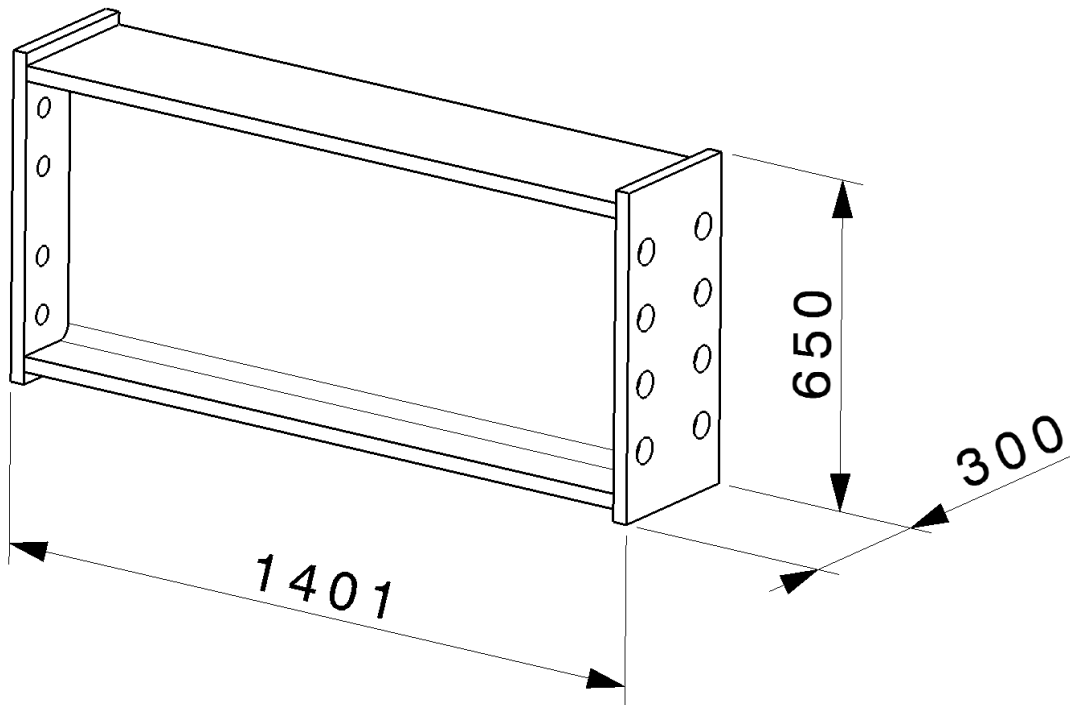
		Quantity	Weight (kg)/unit
WM-F7	12mm Warm membrane with welded ribs - external for extremity portals (4.66x0.91x0.162)	4	620



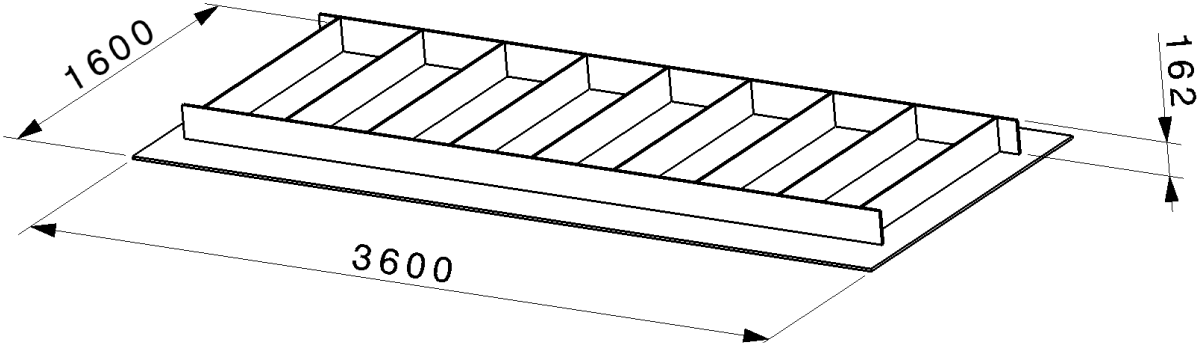
		Quantity	Weight (kg)/unit
R1	Main roof beam , HL1100M (9.46x1.108x0.402)	78	4969



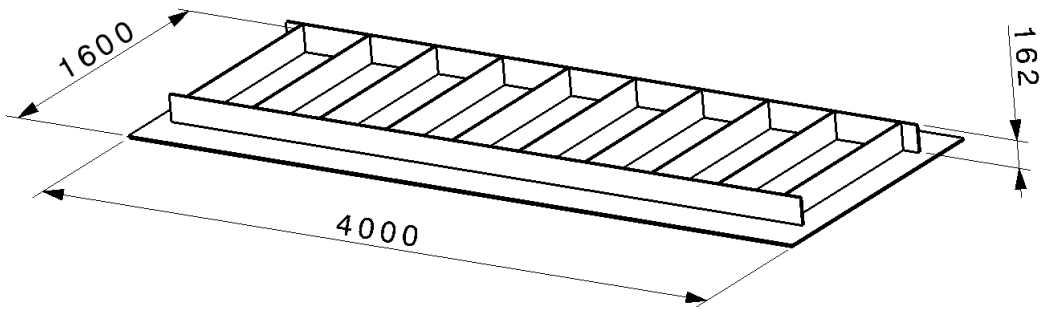
		Quantity	Weight (kg)/unit
R2	Portal spacer beam , HEB600 (1.578x0.650x0.300)	228	447



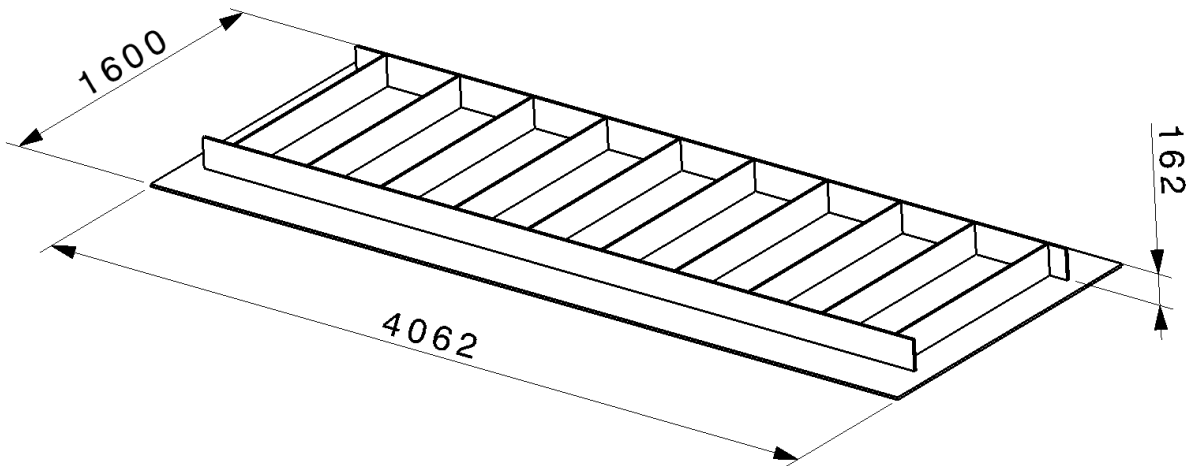
		Quantity	Weight (kg)/unit
R3	Extremity beam, link to short wall toward X, HEB600 (1.401x0.650x0.300)	12	407



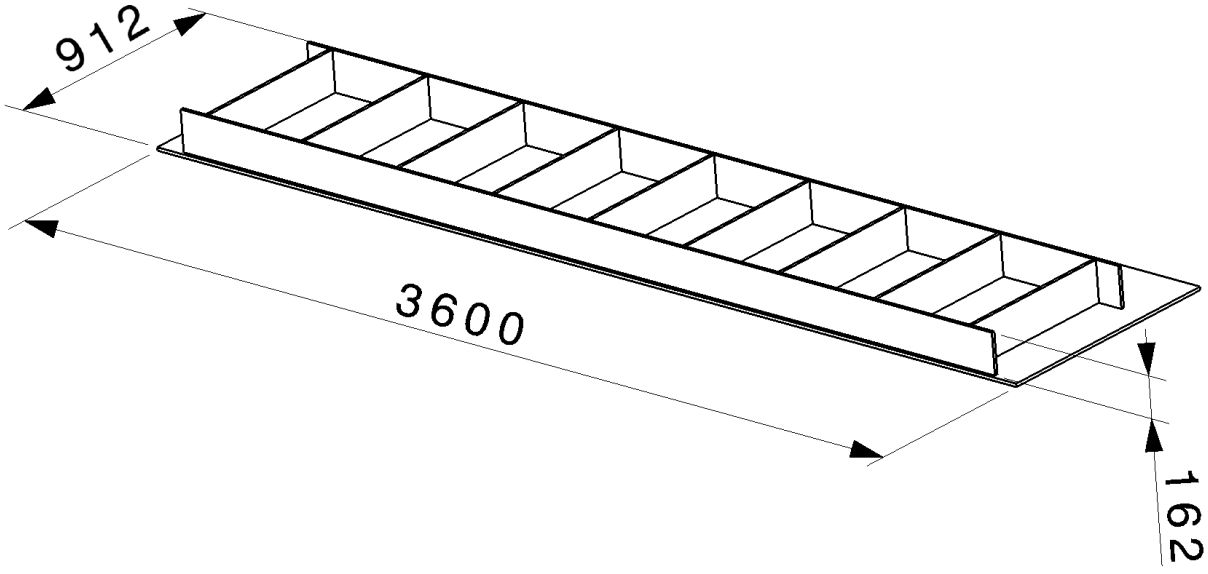
		Quantity	Weight (kg)/unit
WM-R1	12mm Warm membrane with welded ribs - central short module (3.6x1.6x0.162)	38	853



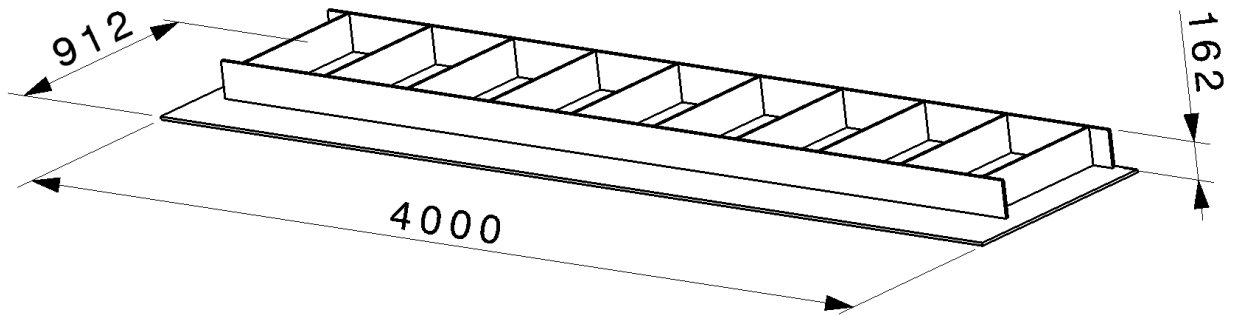
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WM-R2	12mm Warm membrane with welded ribs - central long module (4x1.6x0.162)	38	948



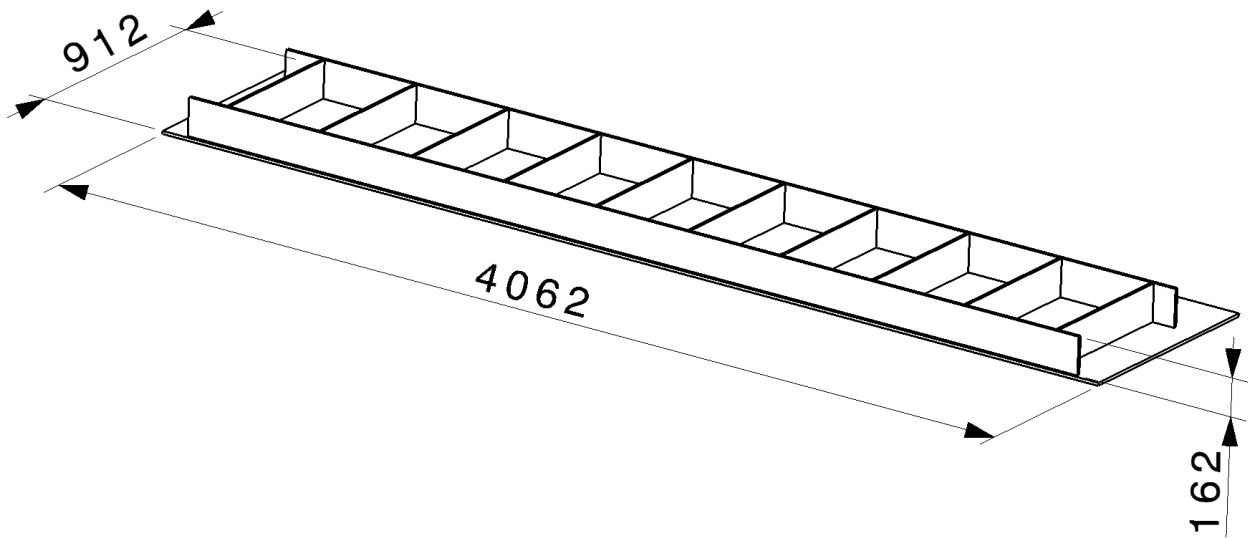
		Quantity	Weight (kg)/unit
WM-R3	12mm Warm membrane with welded ribs - external module (4.062x1.6x0.162)	76	960



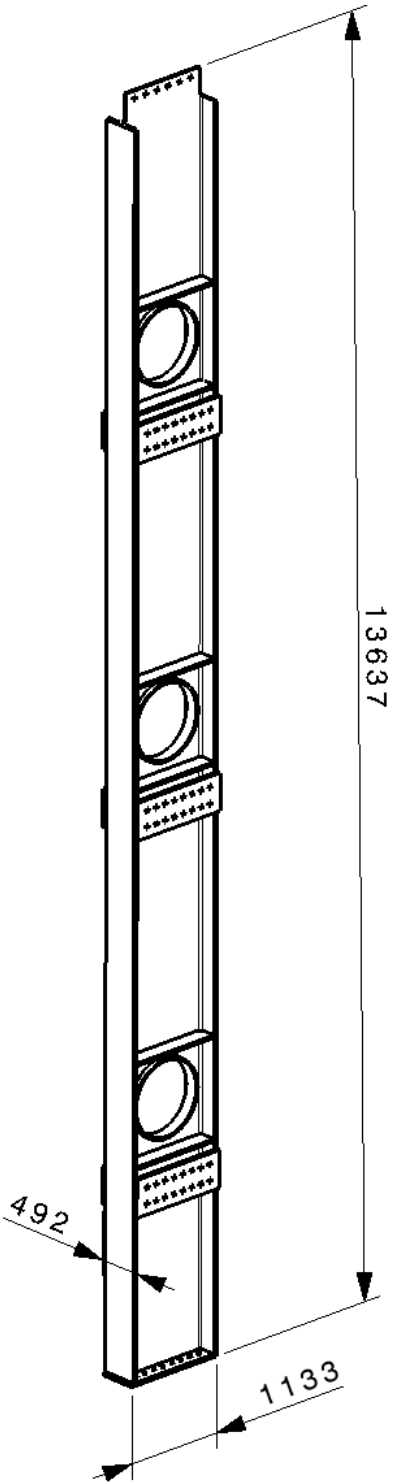
		Quantity	Weight (kg)/unit
WM-R4	12mm Warm membrane with welded ribs -short central for extremity portals (3.6x0.91x0.162)	2	530



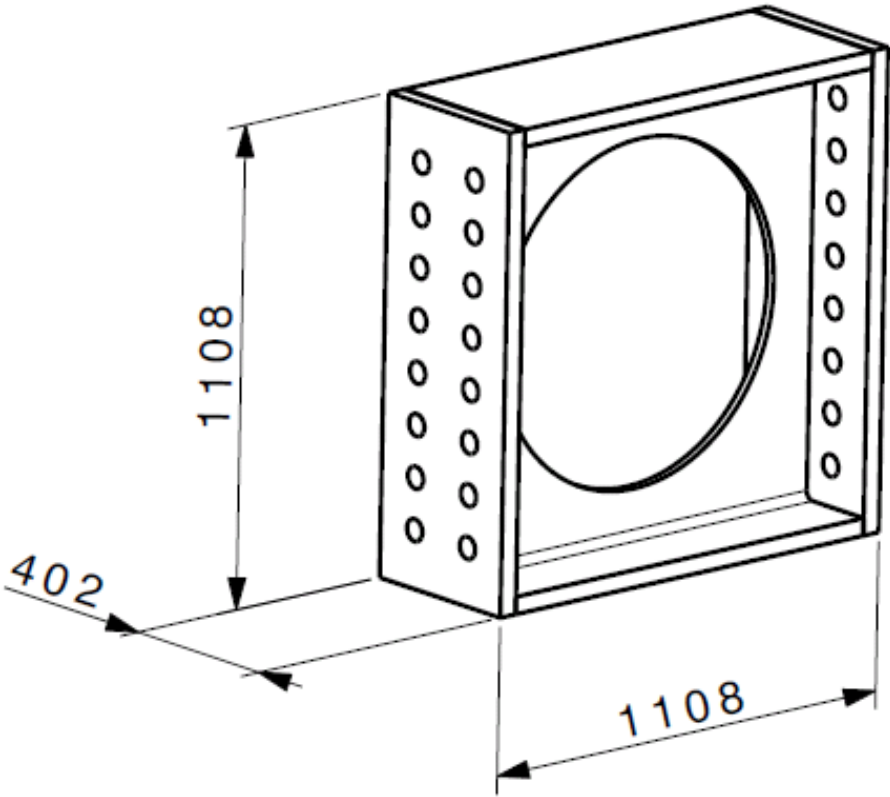
		Quantity	Weight (kg)/unit
WM-R5	12mm Warm membrane with welded ribs -long central for extremity portals (4x0.91x0.162)	2	591



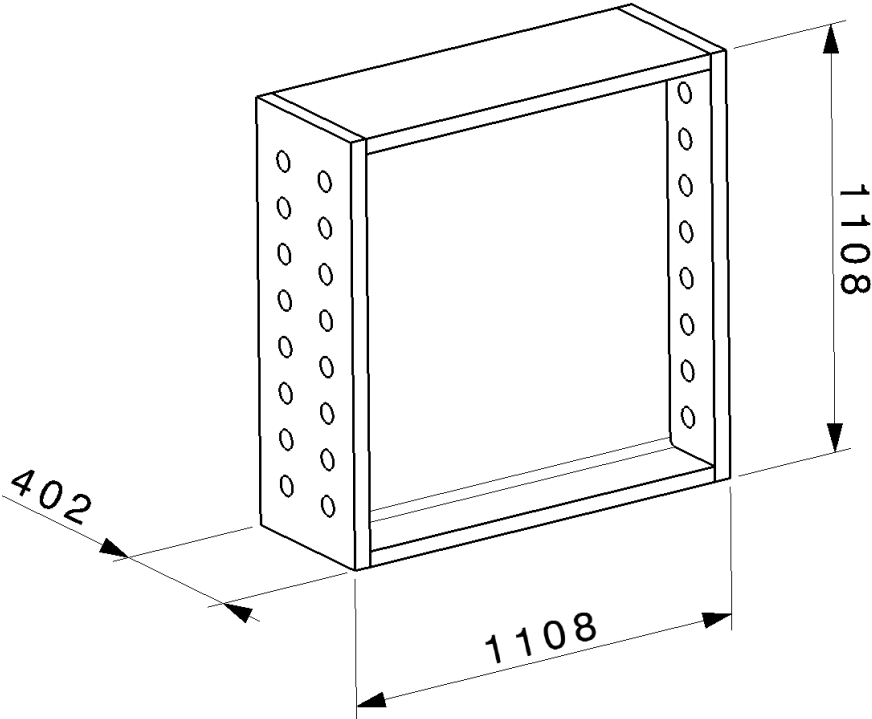
		Quantity	Weight (kg)/unit
WM-R6	12mm Warm membrane with welded ribs - external for extremity portals (4.06x0.91x0.162)	4	598



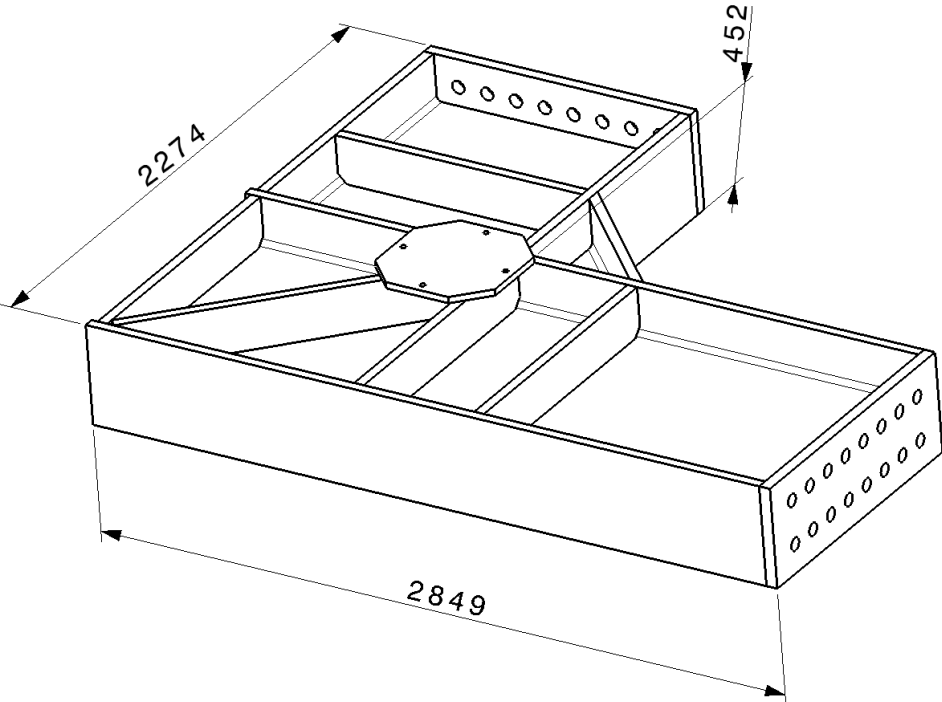
		Quantity	Weight (kg)/unit
SW1	Vertical beam , HL1100M (13.637x1.133x0.492)	18	8384



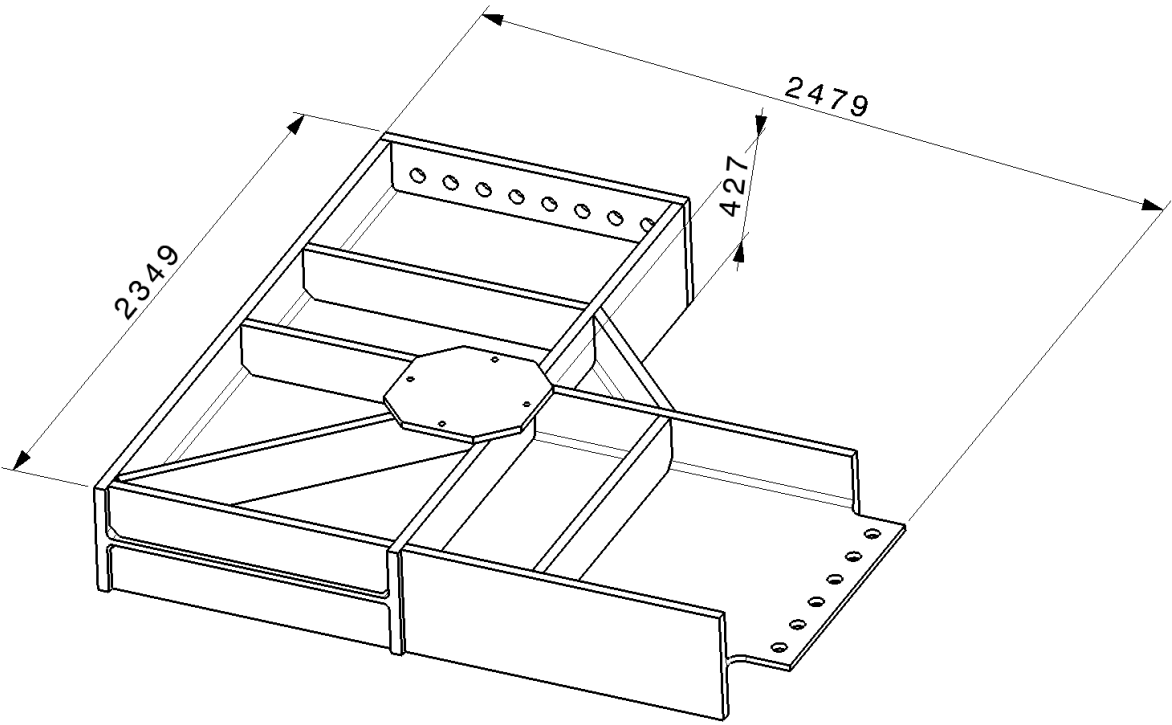
		Quantity	Weight (kg)/unit
SW2	Horizontal spacer beam with access hole (moment connection), HL1100M (1.108x1.108x0.402)	14	710
LW2		16	



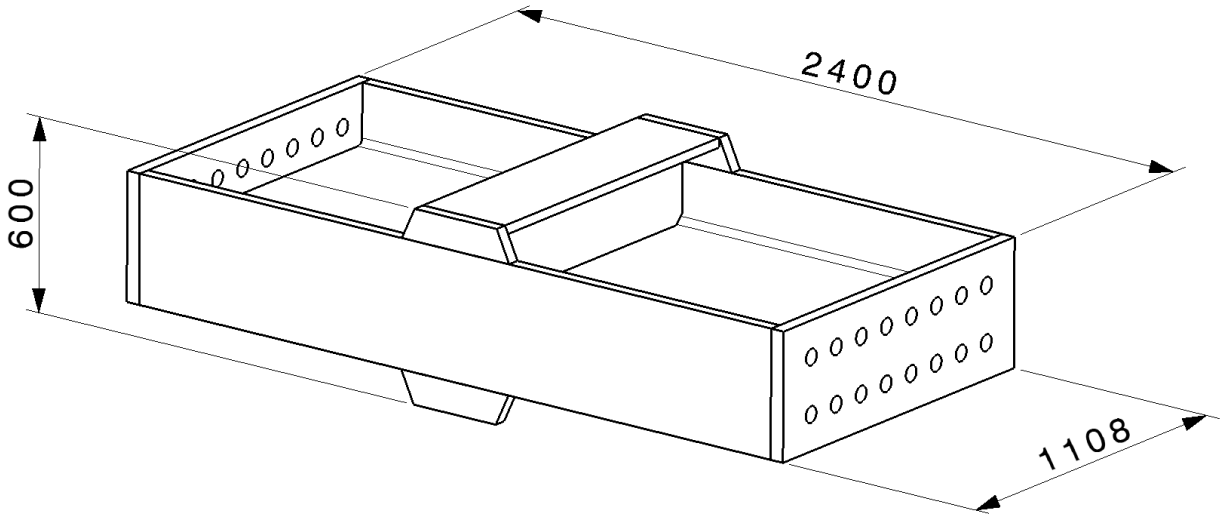
		Quantity	Weight (kg)/unit
SW3	Horizontal spacer beam without access hole (moment connection), HL1100M (1.108x1.108x0.402)	34	805
LW3		8	



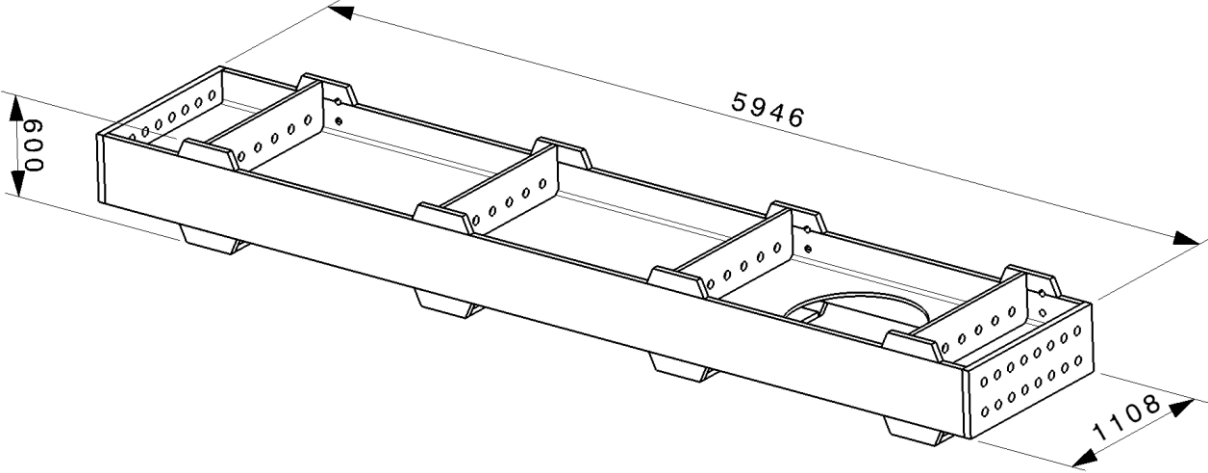
		Quantity	Weight (kg)/unit
SW4	Horizontal L Corner beam, Linked to long wall HL1100M (2.849x2.274x0.452)	12	3115



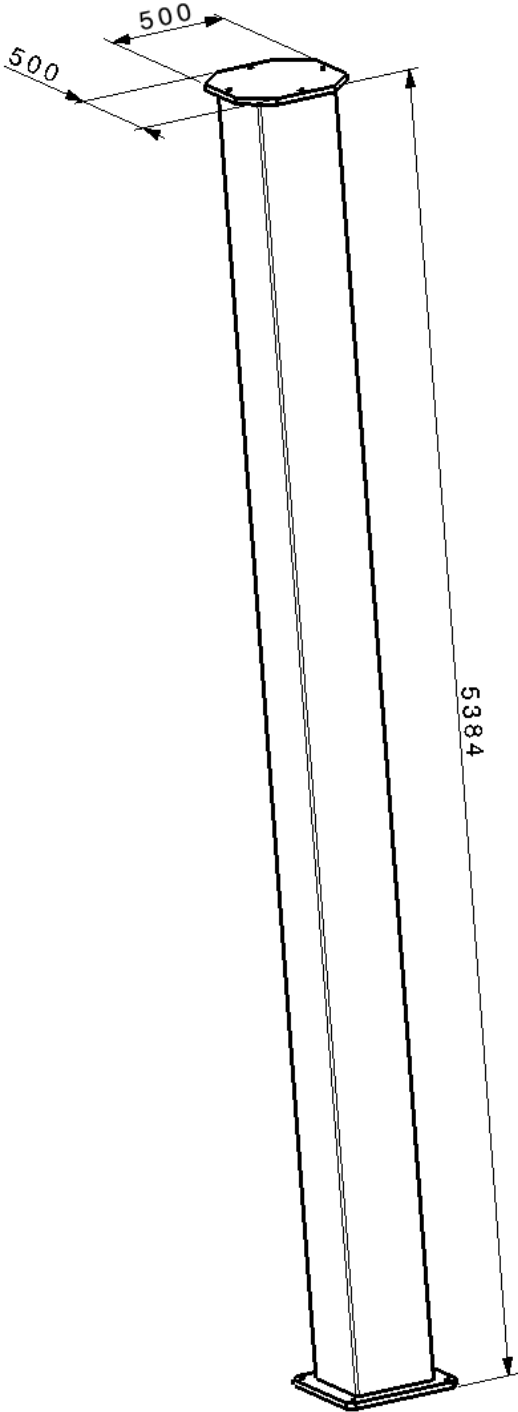
		Quantity	Weight (kg)/unit
SW5	Top Horizontal L Corner beam, Linked to long wall HL1100M (2.349x2.479x0.427)	4	2724



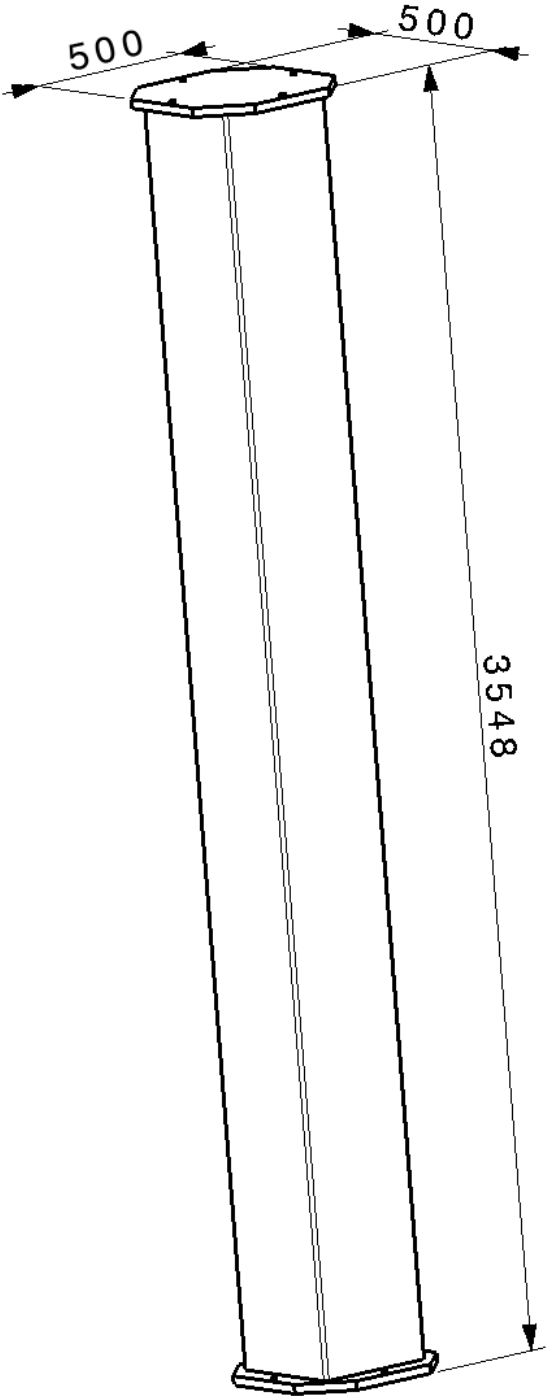
		Quantity	Weight (kg)/unit
SW6	Horizontal top beam link to the roof(Central), HL1100M (2.4x1.108x0.600)	2	1690



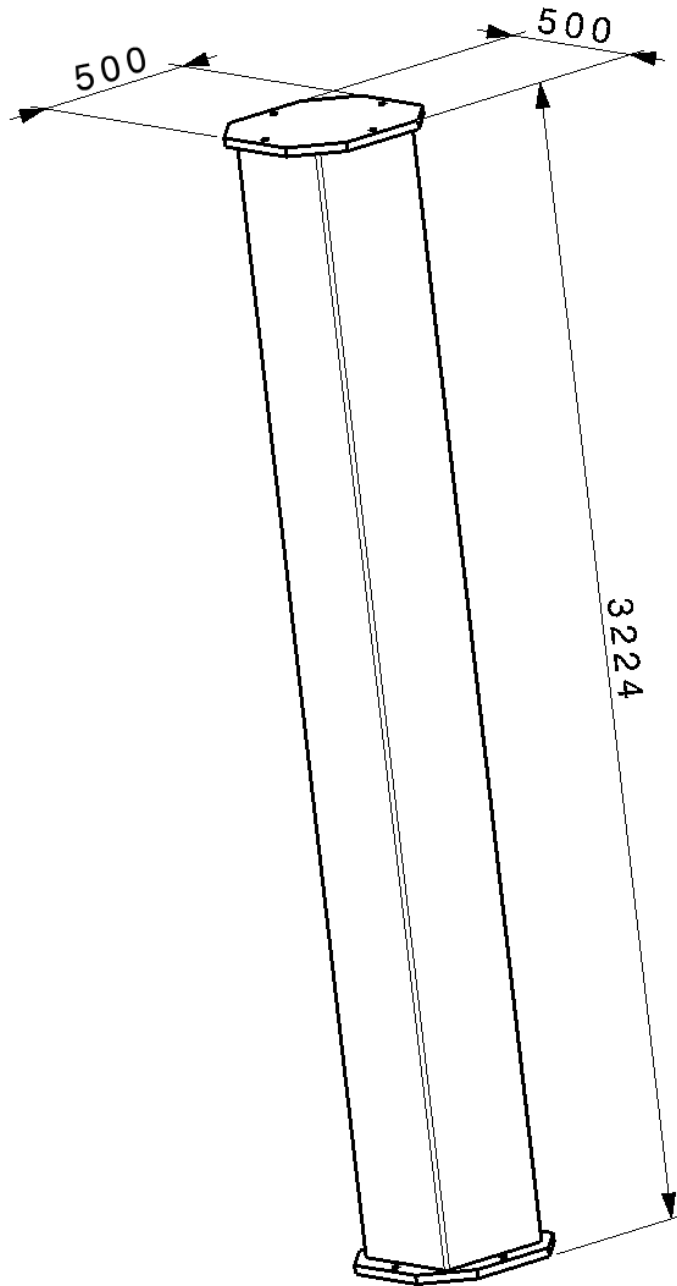
		Quantity	Weight (kg)/unit
SW7	Horizontal top beam link to the roof(long), HL1100M (5.946x1.108x0.600)	4	4081



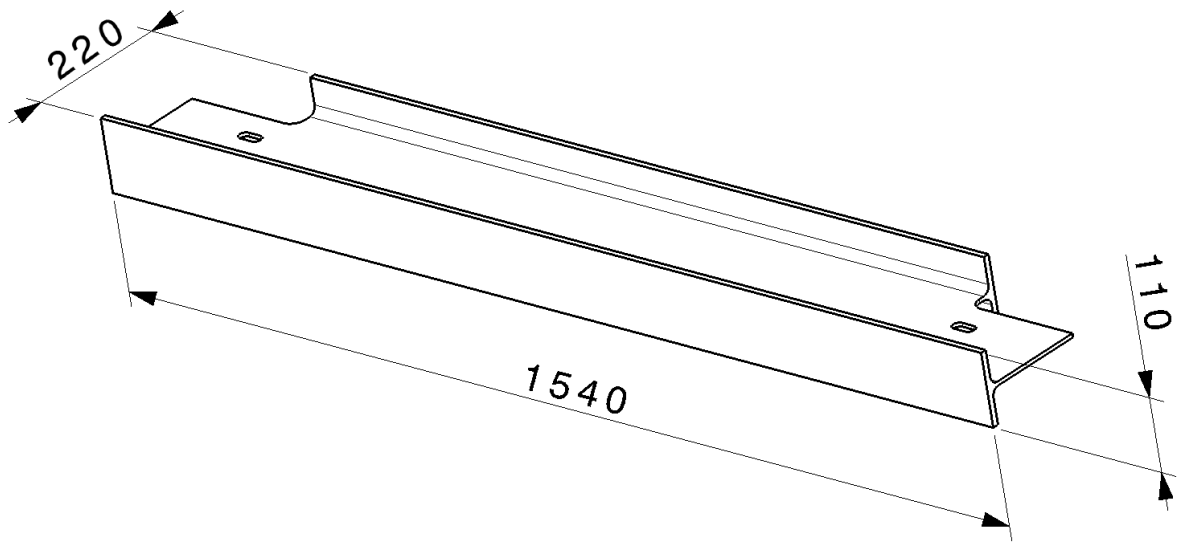
		Quantity	Weight (kg)/unit
SW8	Vertical pillar for L corner, ground to Level 1 (5.384x0.5x0.5)	4	723



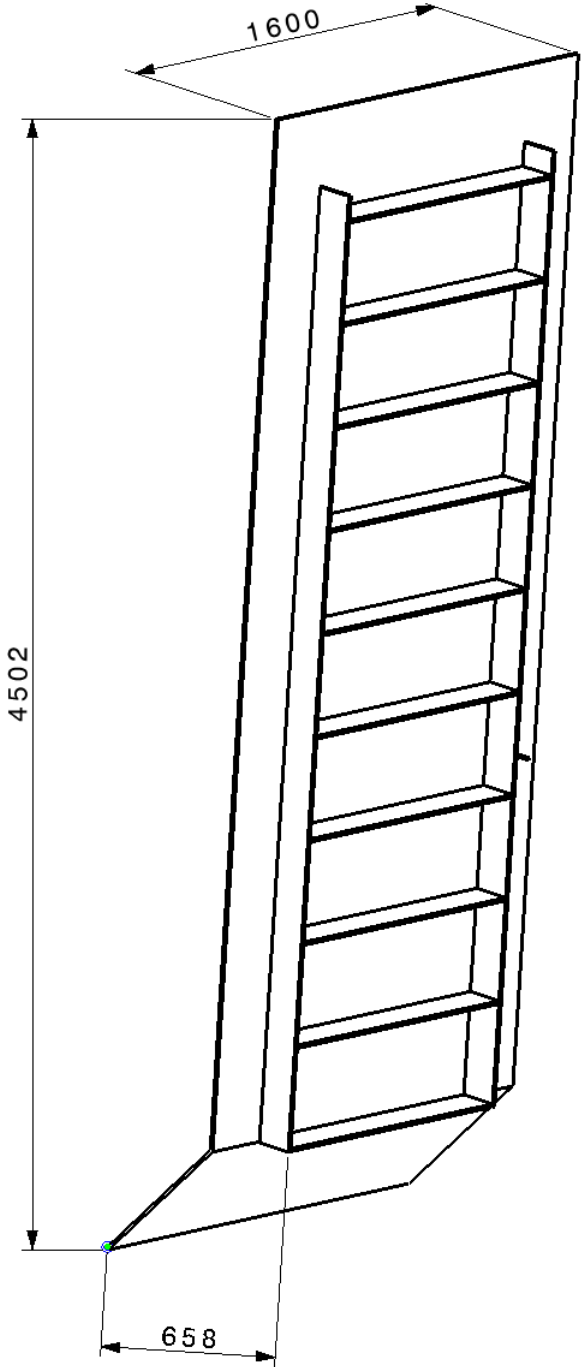
		Quantity	Weight (kg)/unit
SW9	Vertical pillar for L corner, intermediate Levels (3.548x0.5x0.5)	8	284



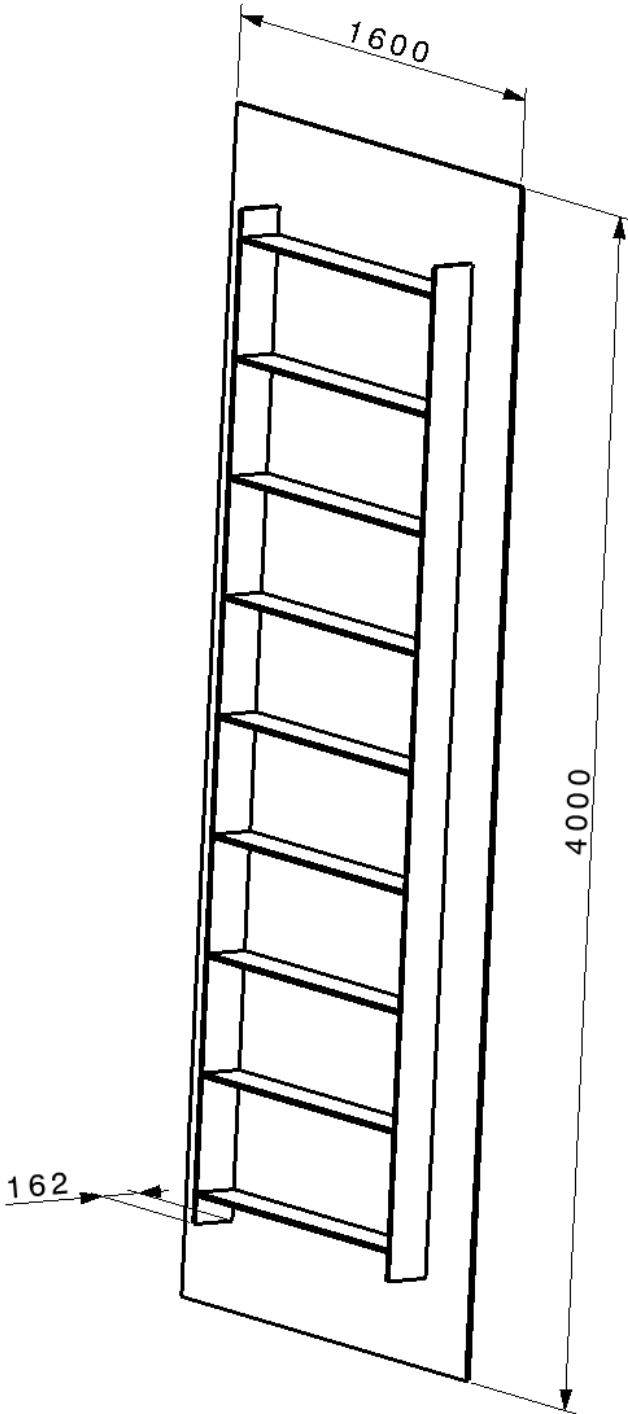
		Quantity	Weight (kg)/unit
SW10	Vertical pillar for L corner, Level 3 to Level 4 (3.224x0.5x0.5)	4	465



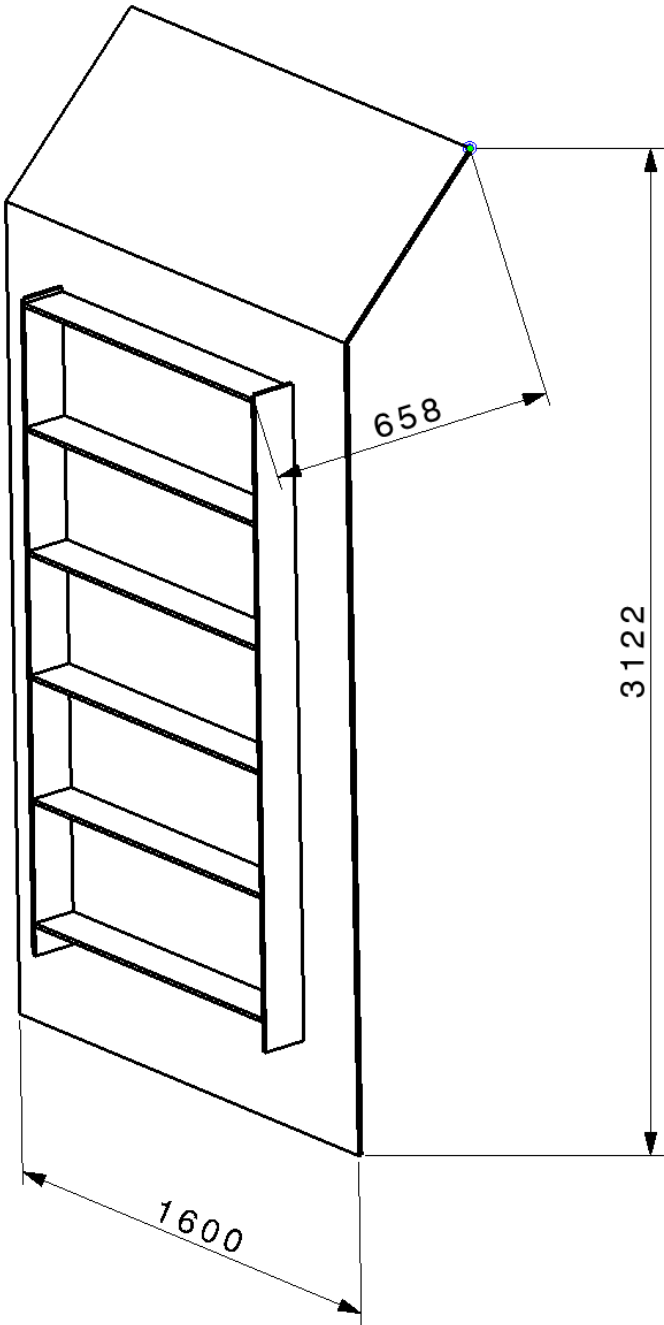
		Quantity	Weight (kg)/unit
SW11	Removable structure for warm membrane, IPE220 (1.54x0.22x0.11)	38	41



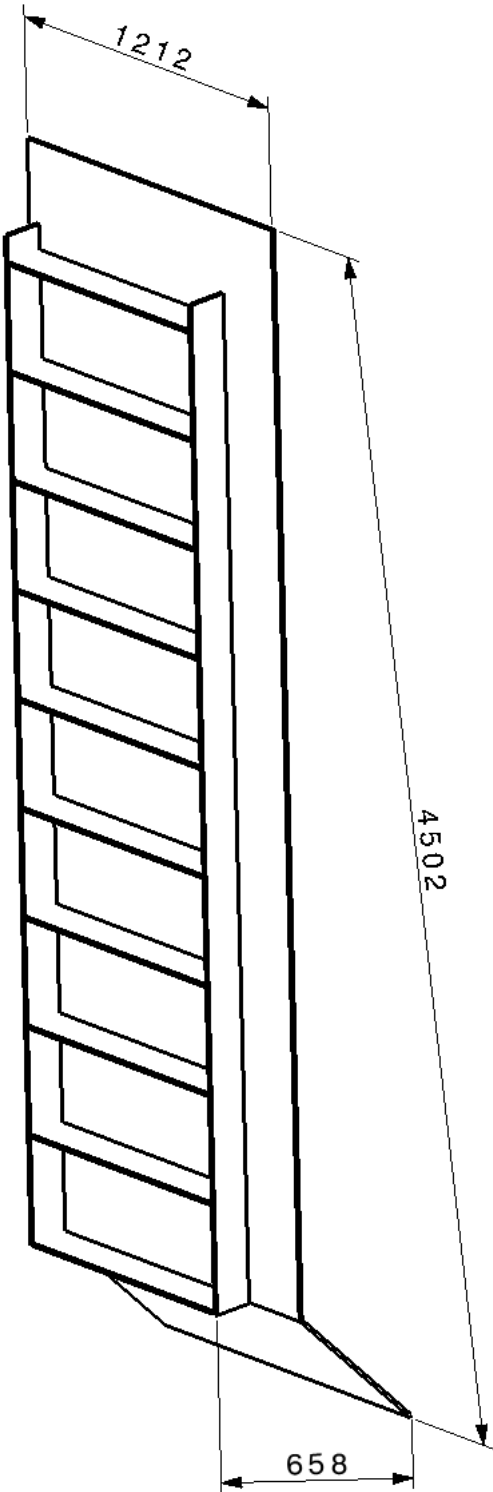
		Quantity	Weight (kg)/unit
WM-SW1	12mm Warm membrane with welded ribs - central module ground to level 1 (4.5x1.6x0.658)	12	1062
WM-LW1		76	



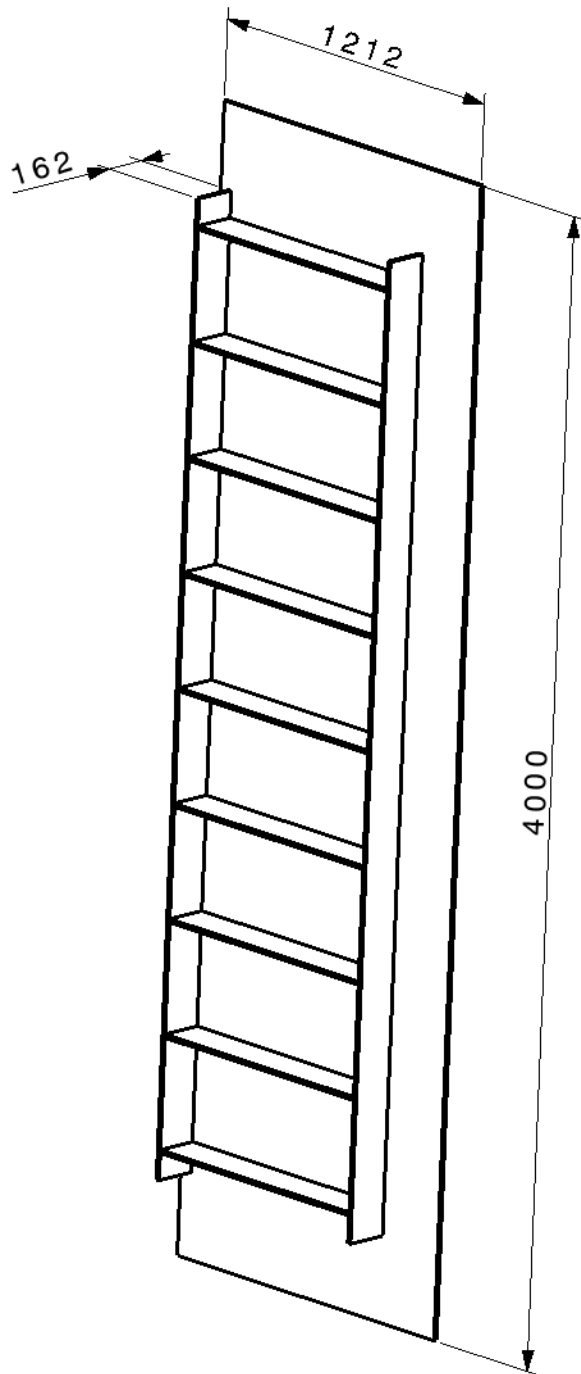
WM-SW2	12mm Warm membrane with welded ribs - central module intermediate level (4x1.6x0.162)	24	919
WM-LW2		152	



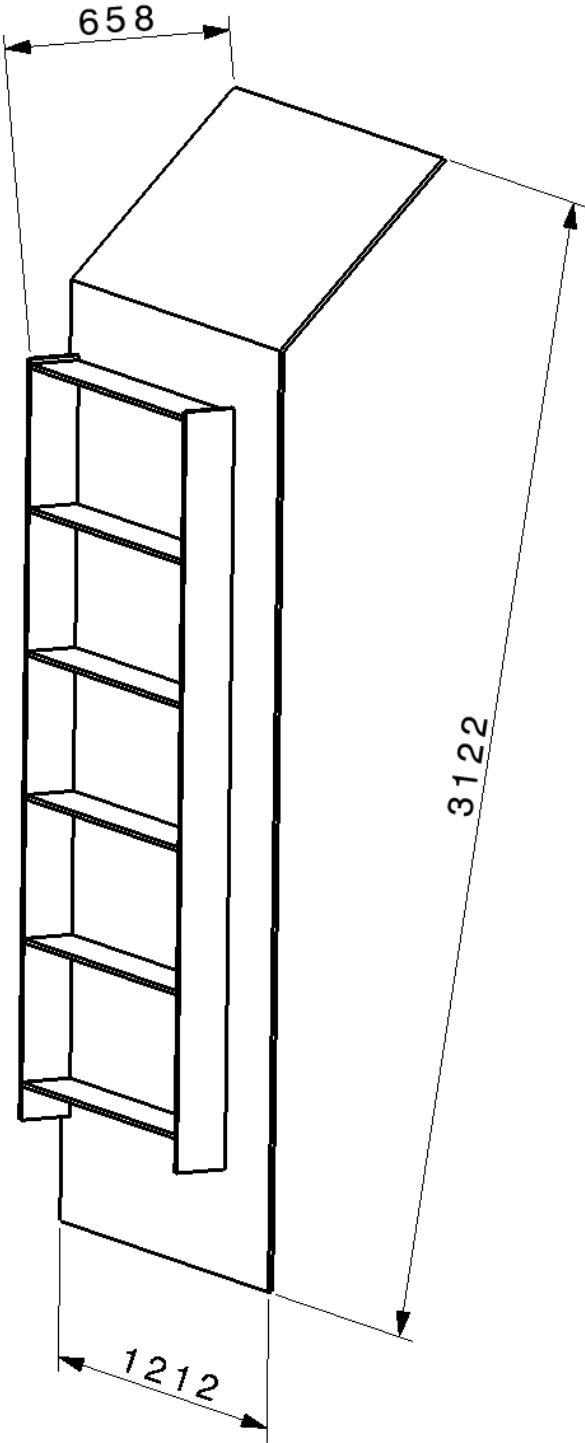
WM-SW3	12mm Warm membrane with welded ribs - central module top level (3.12x1.6x0.658)	12	717
WM-LW3		76	



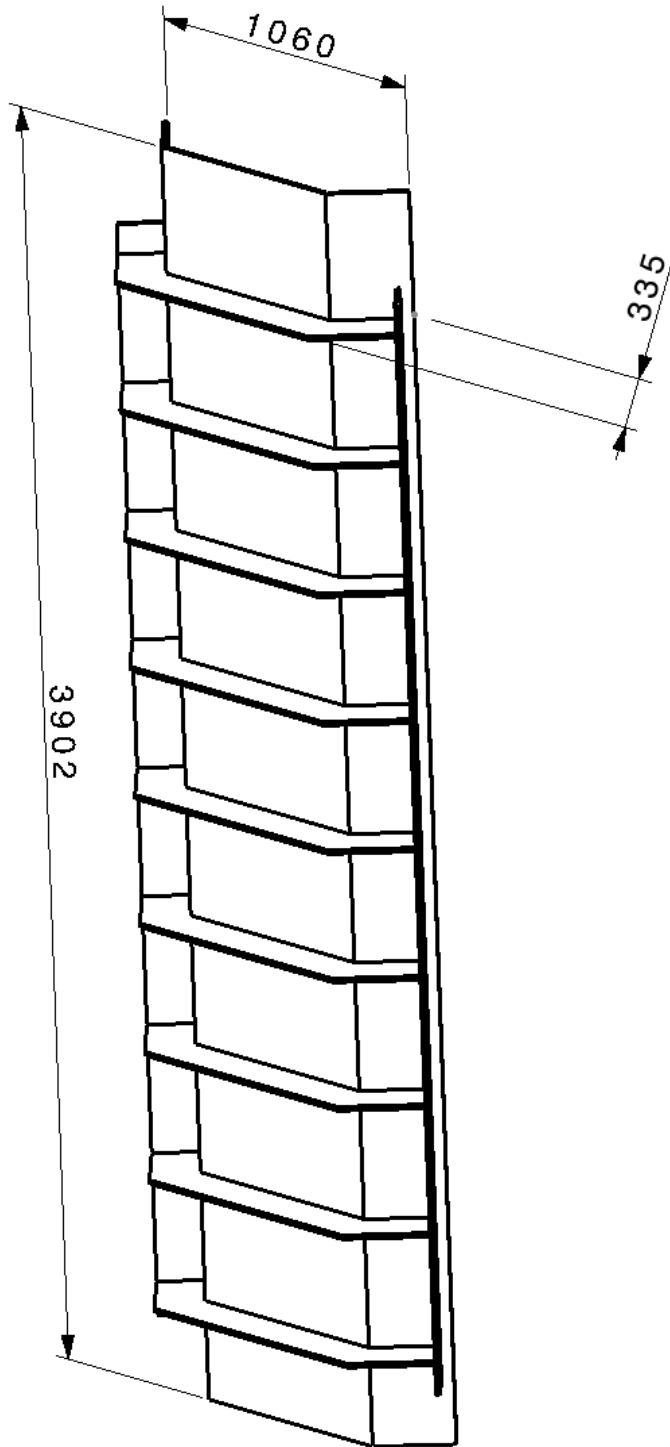
		Quantity	Weight (kg)/unit
WM-SW4	12mm Warm membrane with welded ribs - extremity module ground to level 1 (4.5x1.21x0.658)	4	844



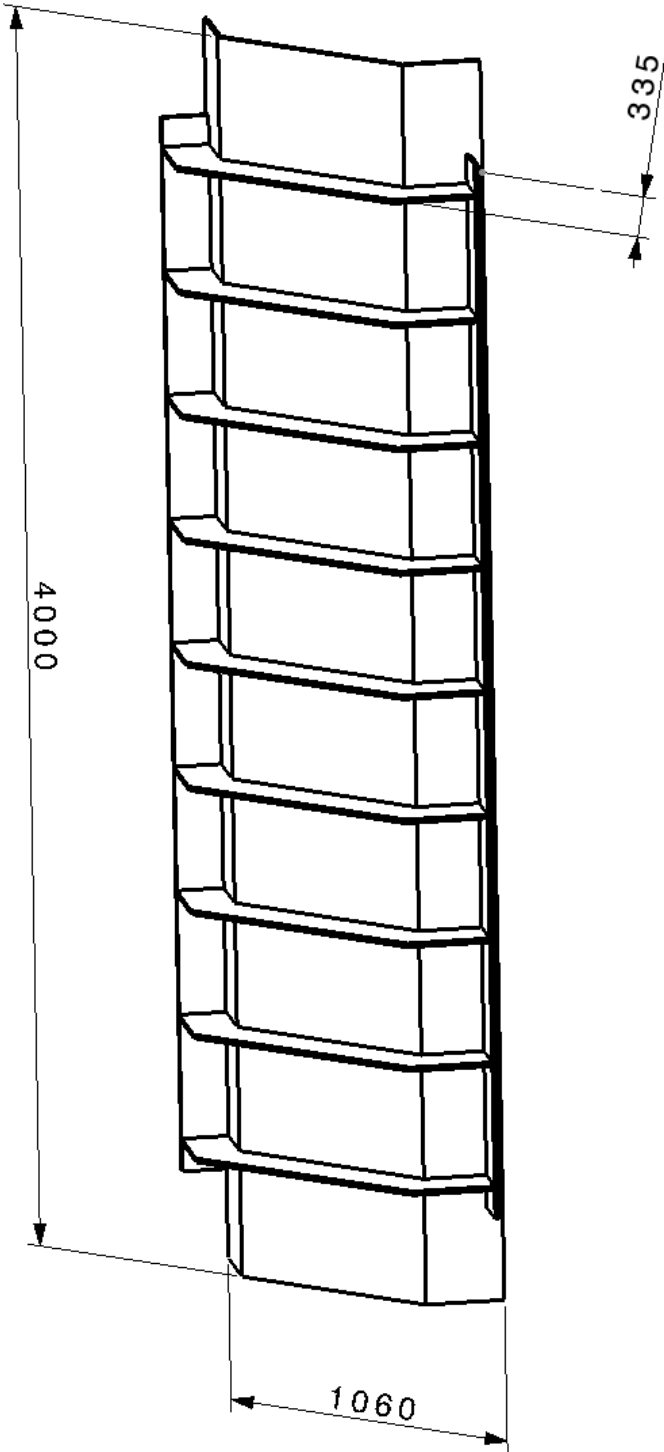
		Quantity	Weight (kg)/unit
WM-SW5	12mm Warm membrane with welded ribs - extremity module intermediate level (4x1.21x0.162)	8	732



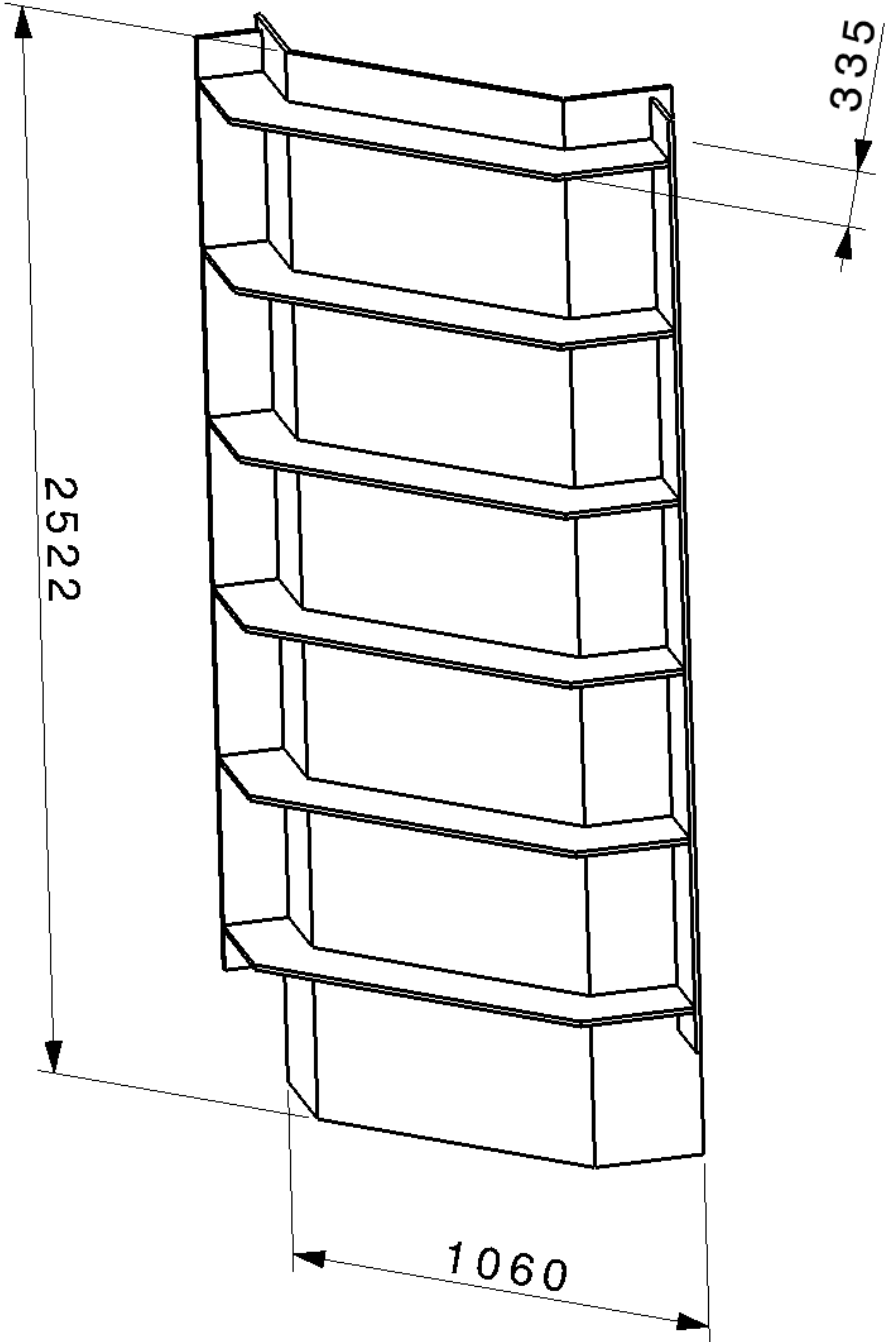
		Quantity	Weight (kg)/unit
WM-SW6	12mm Warm membrane with welded ribs - extremity module top level (3.12x1.21x0.658)	4	565



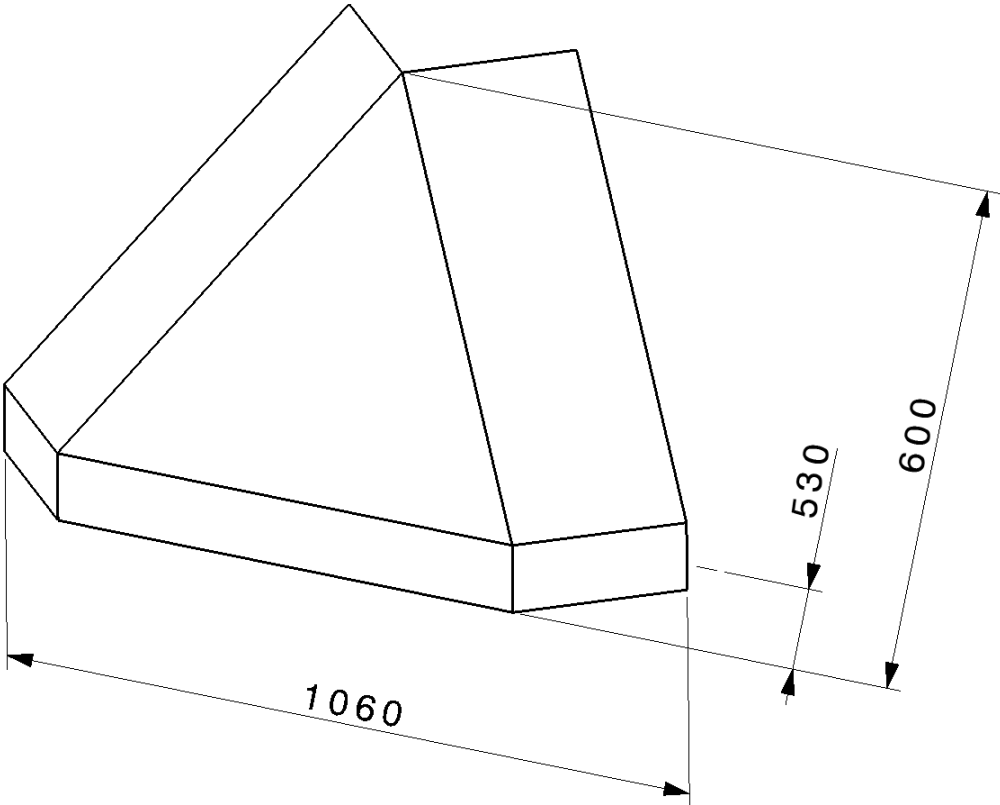
		Quantity	Weight (kg)/unit
WM-SW7	12mm Warm membrane with welded ribs - Corner SW-LW ground to level 1 (3.9x1.06x0.334)	4	761



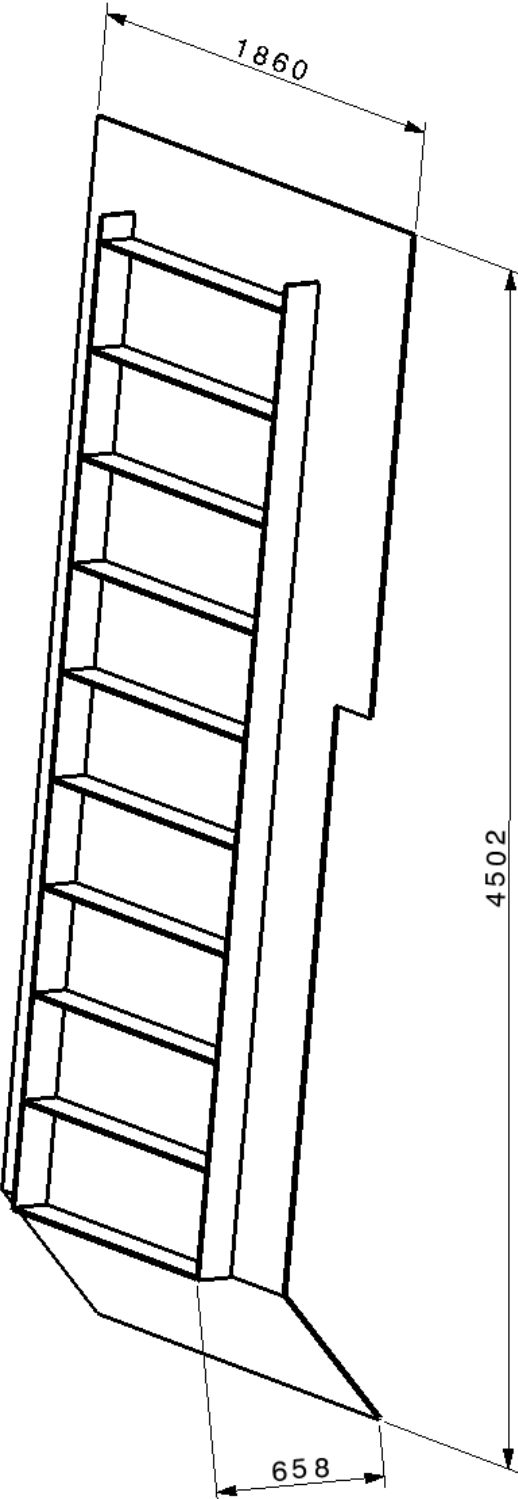
		Quantity	Weight (kg)/unit
WM-SW8	12mm Warm membrane with welded ribs - Corner SW-LW intermediate level (4x1.06x0.334)	8	773



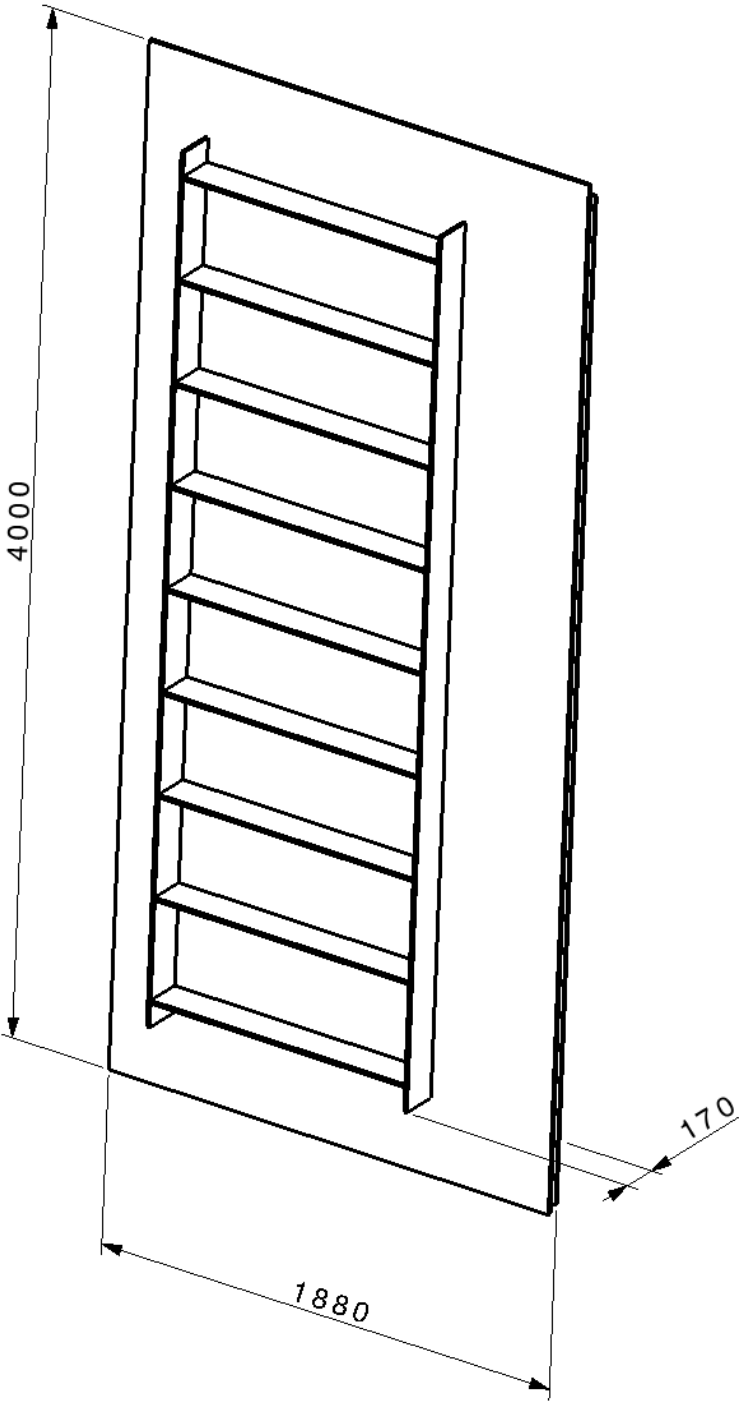
		Quantity	Weight (kg)/unit
WM-SW9	12mm Warm membrane with welded ribs - Corner SW-LW top level (2.52x1.06x0.334)	4	495



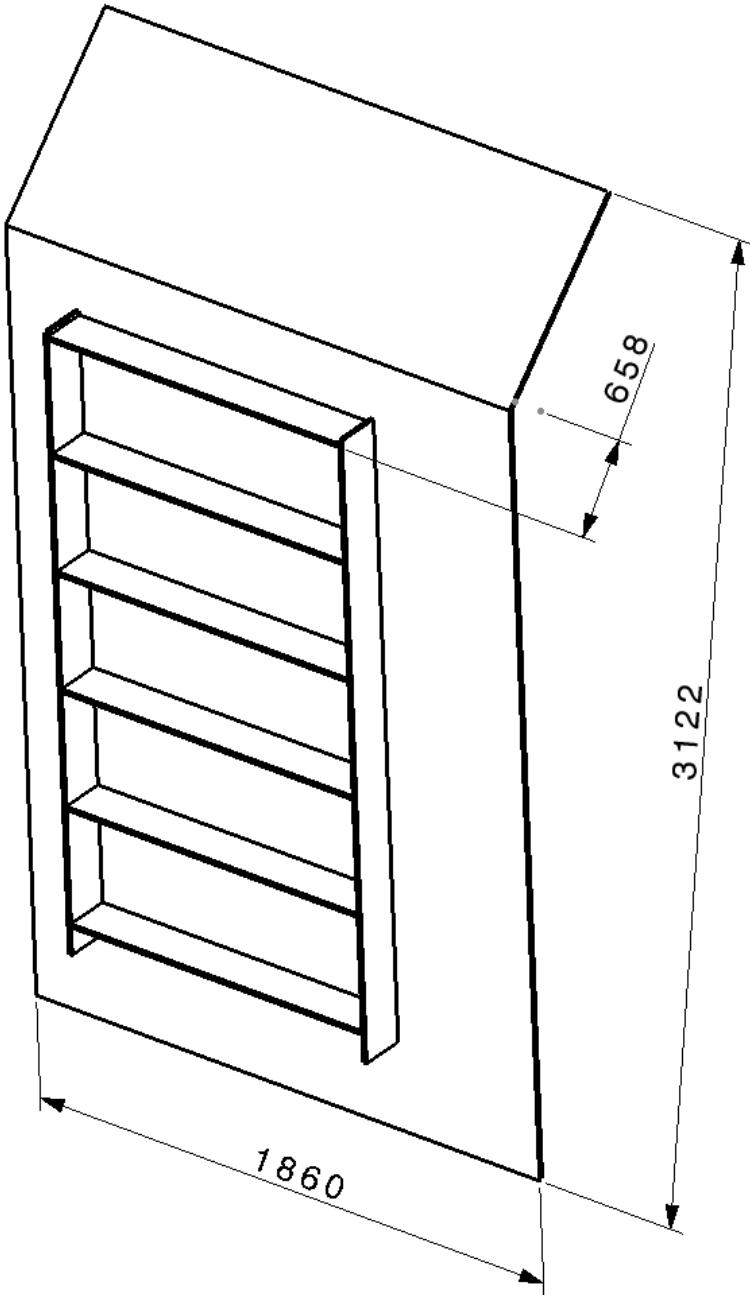
		Quantity	Weight (kg)/unit
WM-SW10	12mm Warm membrane with welded ribs - Corner SW-LW-Floor/Roof (1.06x0.7x0.6)	8	70



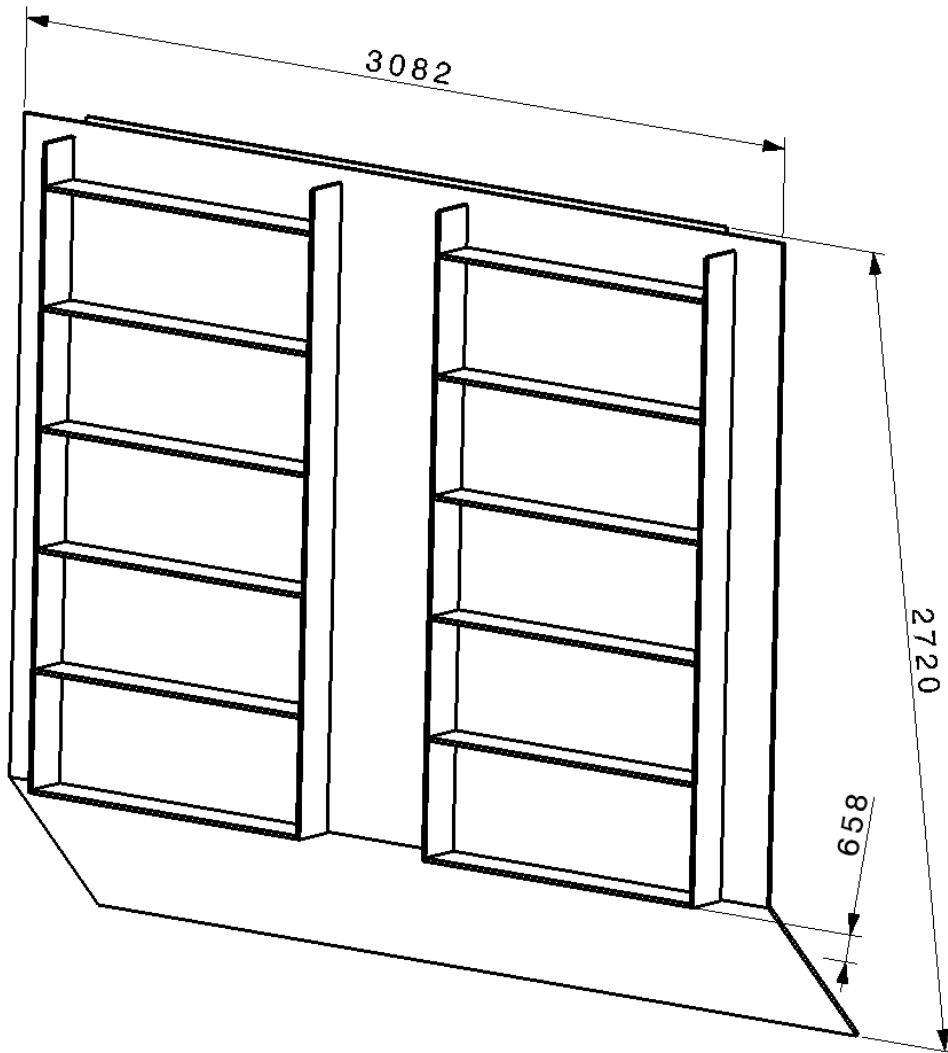
		Quantity	Weight (kg)/unit
WM-SW11	12mm Warm membrane with welded ribs - larger module ground to level 1 (4.5x1.86x0.658)	2	1129



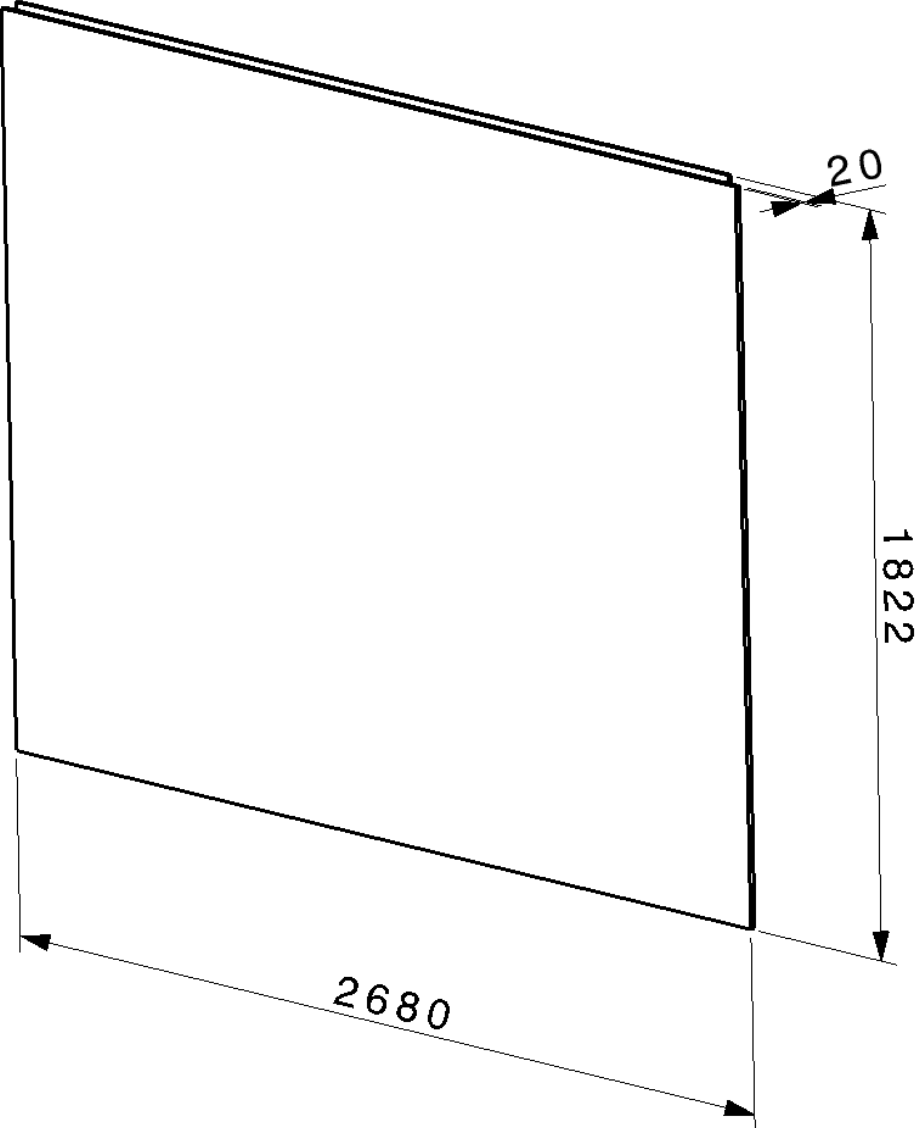
		Quantity	Weight (kg)/unit
WM-SW12	12mm Warm membrane with welded ribs - larger module intermediate level (4x1.86x0.162)	4	1037



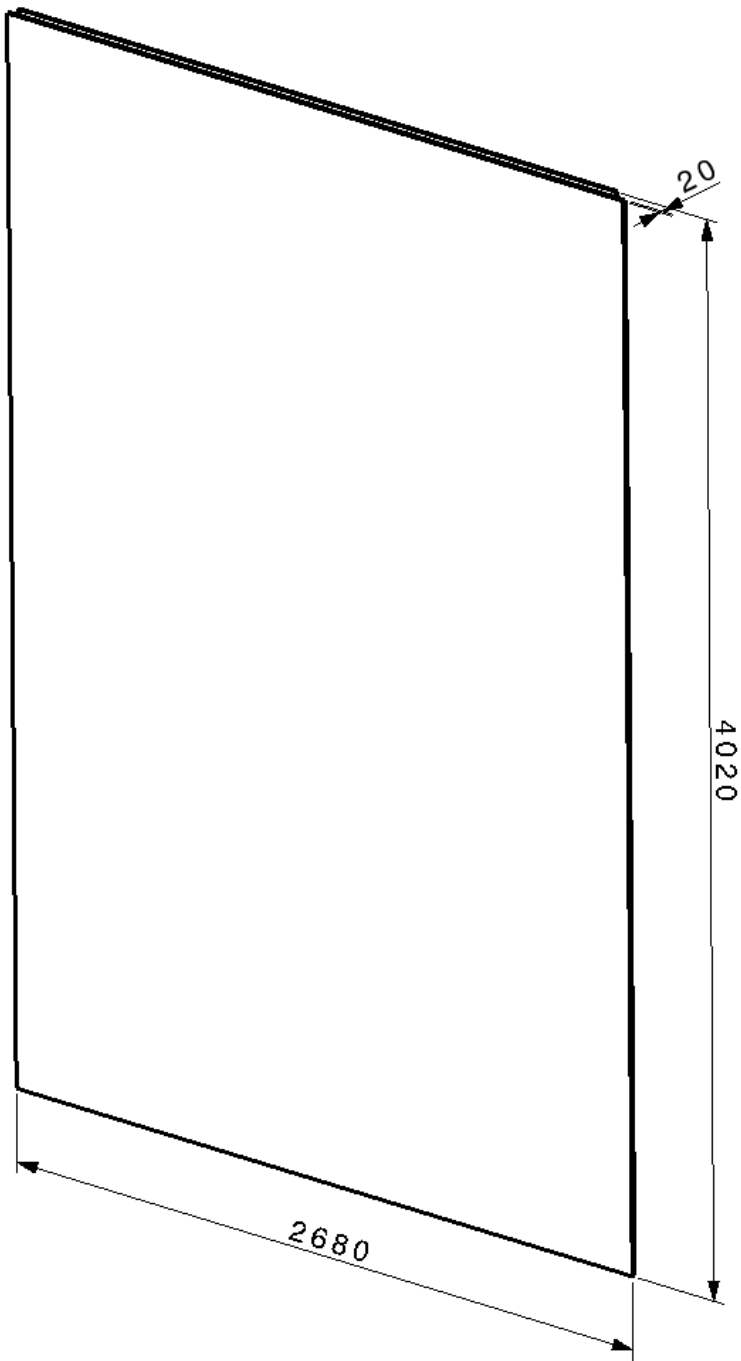
		Quantity	Weight (kg)/unit
WM-SW13	12mm Warm membrane with welded ribs - larger module top level (3.12x1.86x0.658)	2	813



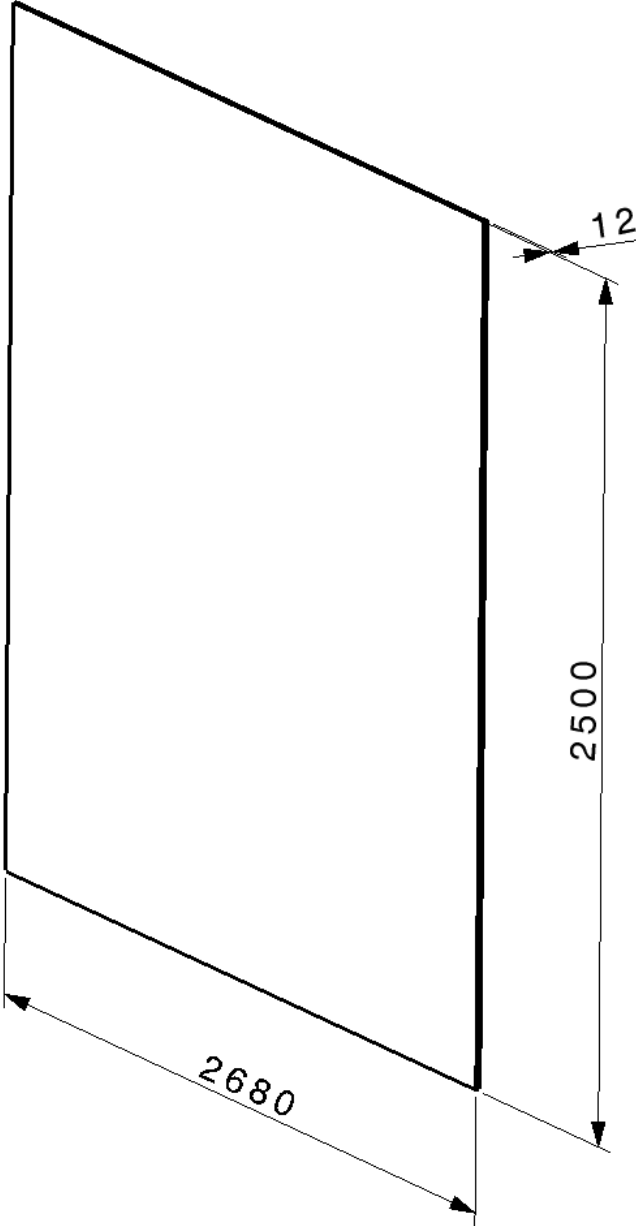
		Quantity	Weight (kg)/unit
WM-SW14	12mm Warm membrane with welded ribs - under removable, floor to top L beam (2.72x3,08x0.658)	1	1268



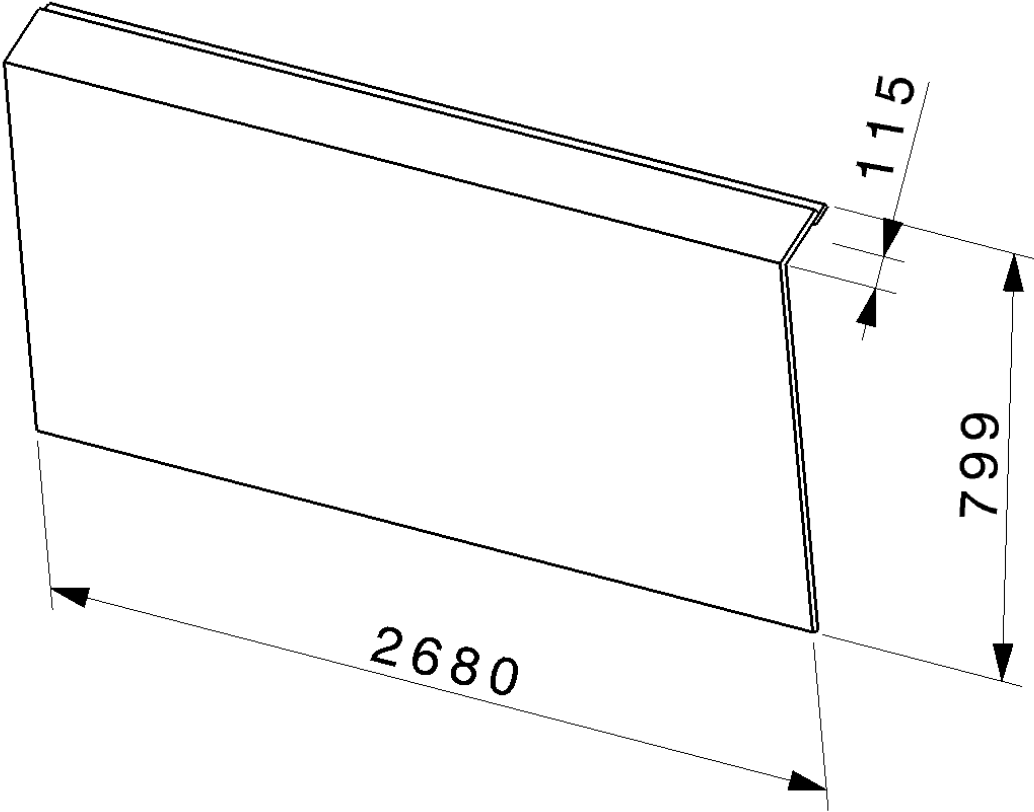
		Quantity	Weight (kg)/unit
WM-SW15	12mm Warm membrane - removable, bottom (up to level 1) (1.82x2.68x0.02)	1	507



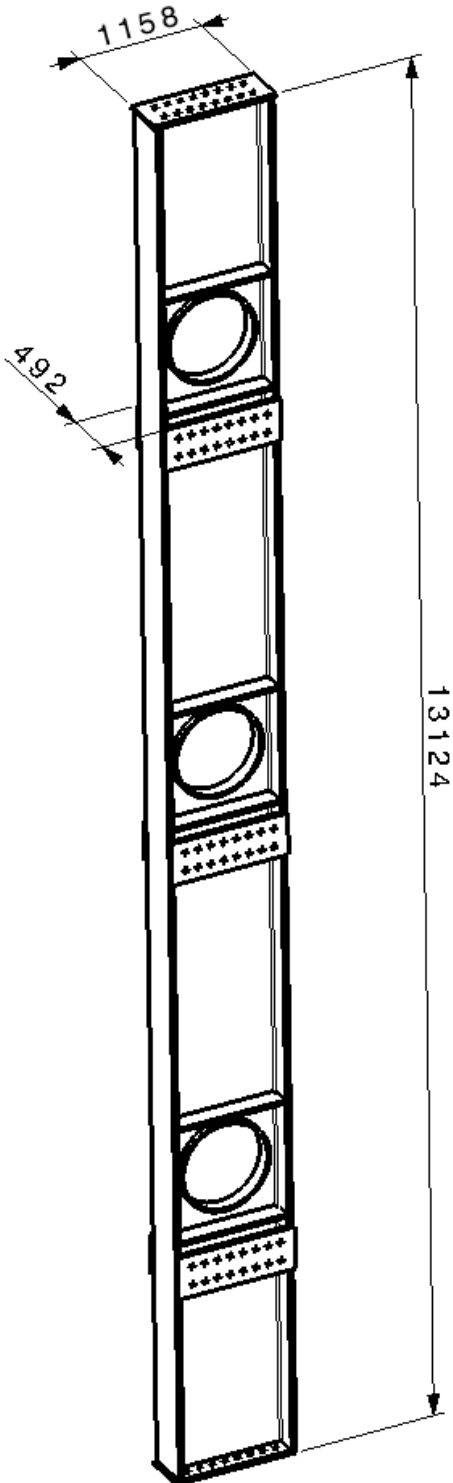
		Quantity	Weight (kg)/unit
WM-SW16	12mm Warm membrane - removable, intermediate level (4.02x2.68x0.02)	2	1117



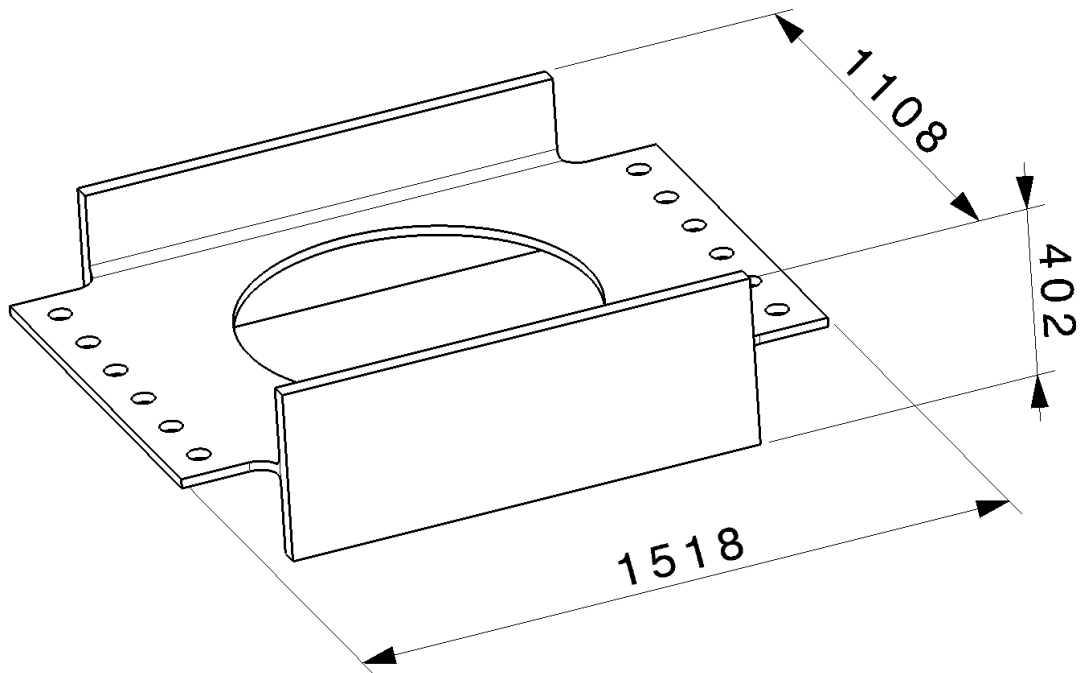
		Quantity	Weight (kg)/unit
WM-SW17	12mm Warm membrane - removable, top (2,5x2.68x0.012)	1	693



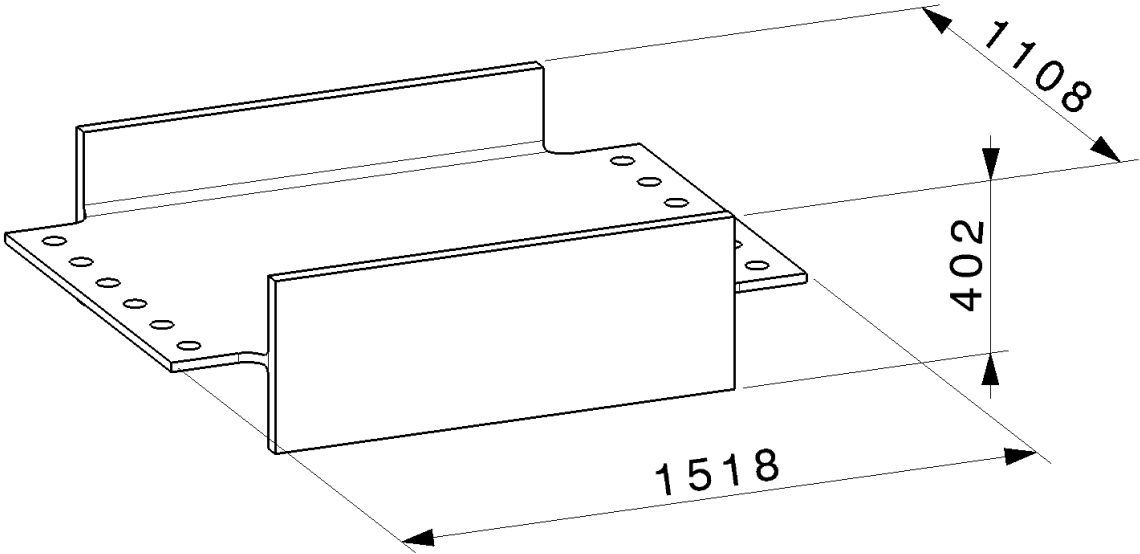
		Quantity	Weight (kg)/unit
WM-SW18	12mm Warm membrane -over removable,Small wall to roof (2.68x0,799x0.115)	1	235



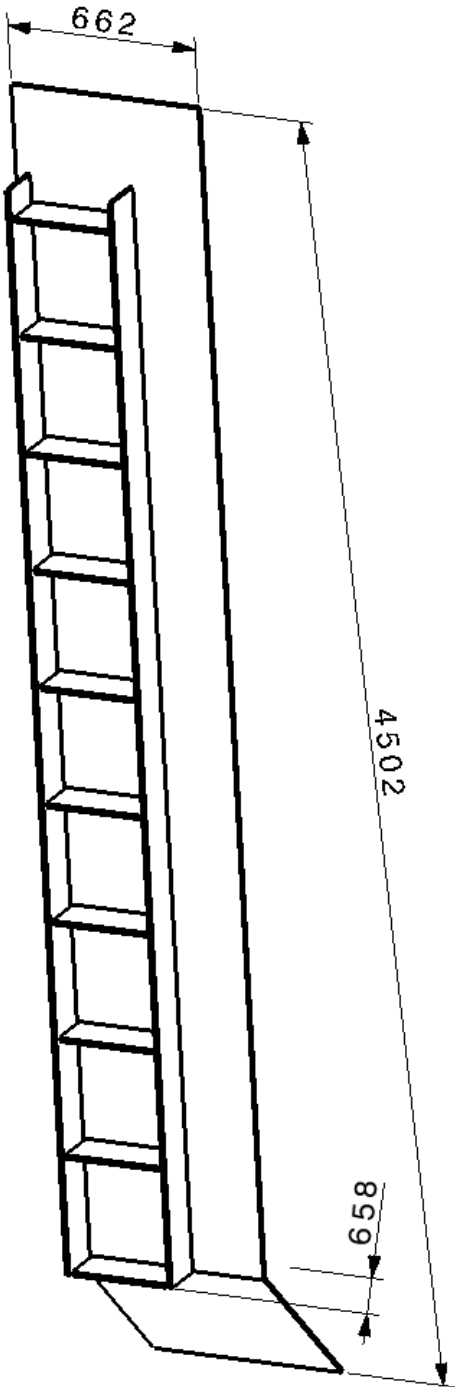
LW1	Vertical beam , HL1100M (13.124x1.158x0.492)	78	8250
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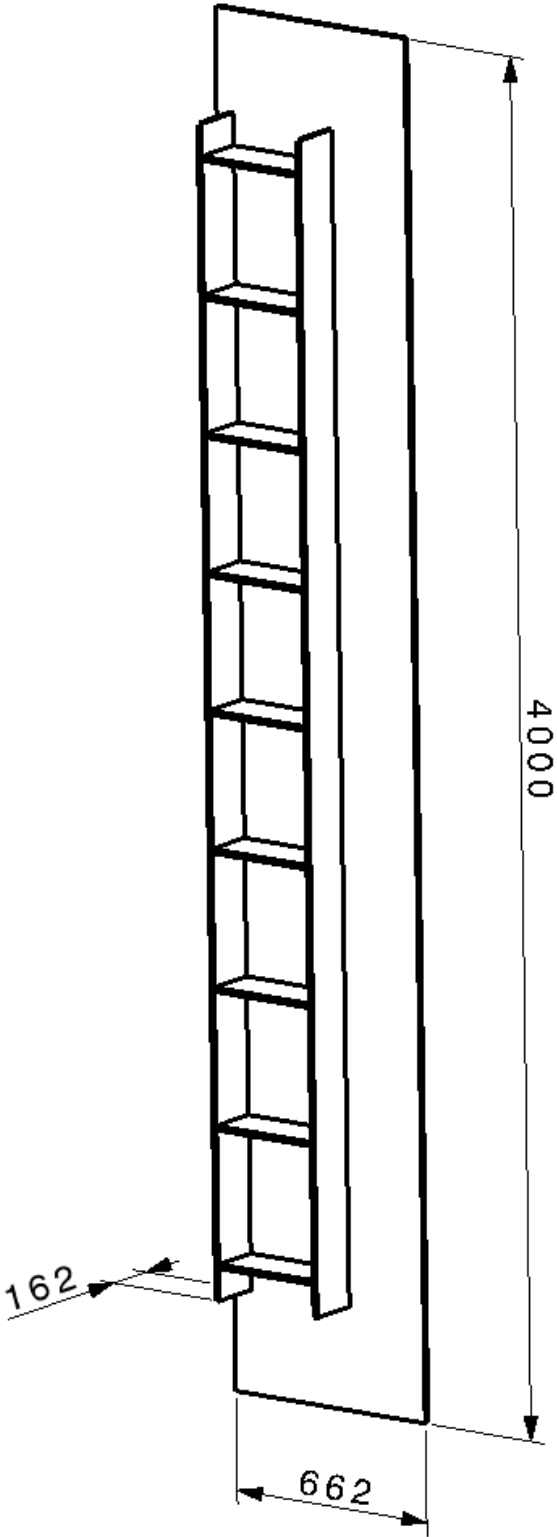
		Quantity	Weight (kg)/unit
LW4	Horizontal spacer beam with access hole (pinned connection), HL1100M (1.518x1.108x0.402)	136	497



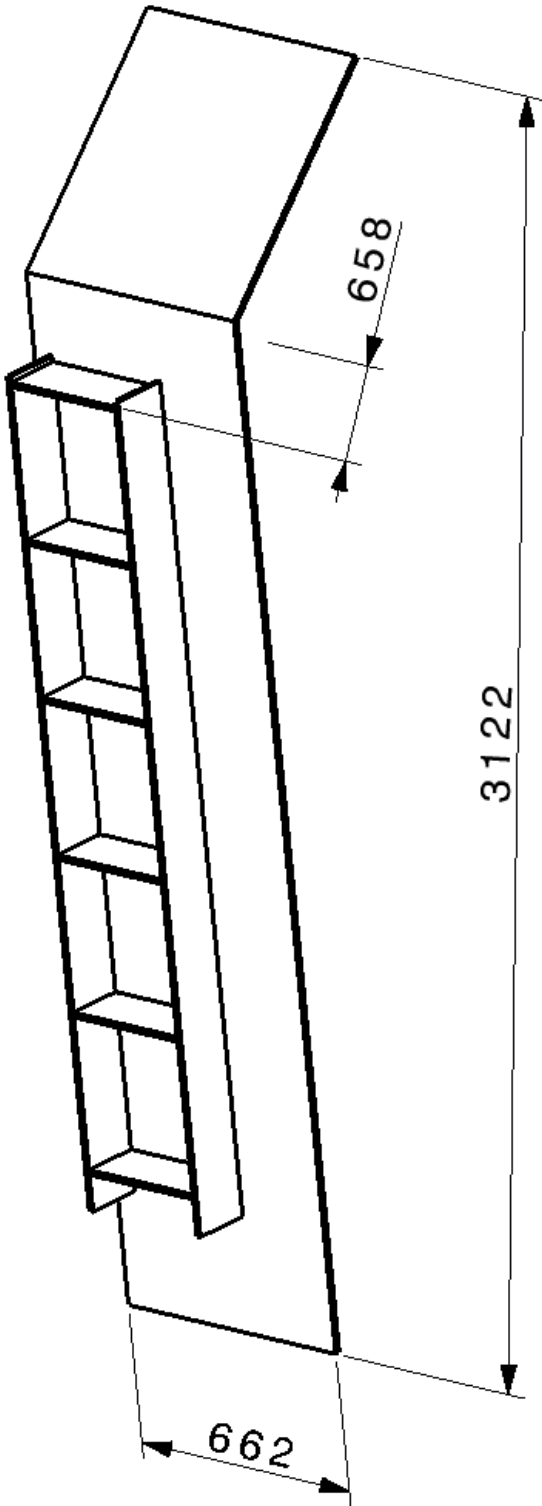
		Quantity	Weight (kg)/unit
LW5	Horizontal spacer beam without access hole (pinned connection), HL1100M (1.518x1.108x0.402)	144	593



		Quantity	Weight (kg)/unit
WM-LW4	12mm Warm membrane with welded ribs - extremity module ground to level 1 (4.5x0.66x0.658)	4	488



		Quantity	Weight (kg)/unit
WM-LW5	12mm Warm membrane with welded ribs - extremity module intermediate level (4x0.66x0.162)	8	426



		Quantity	Weight (kg)/unit
WM-LW6	12mm Warm membrane with welded ribs - extremity module top level (3.12x0.66x0.658)	4	325