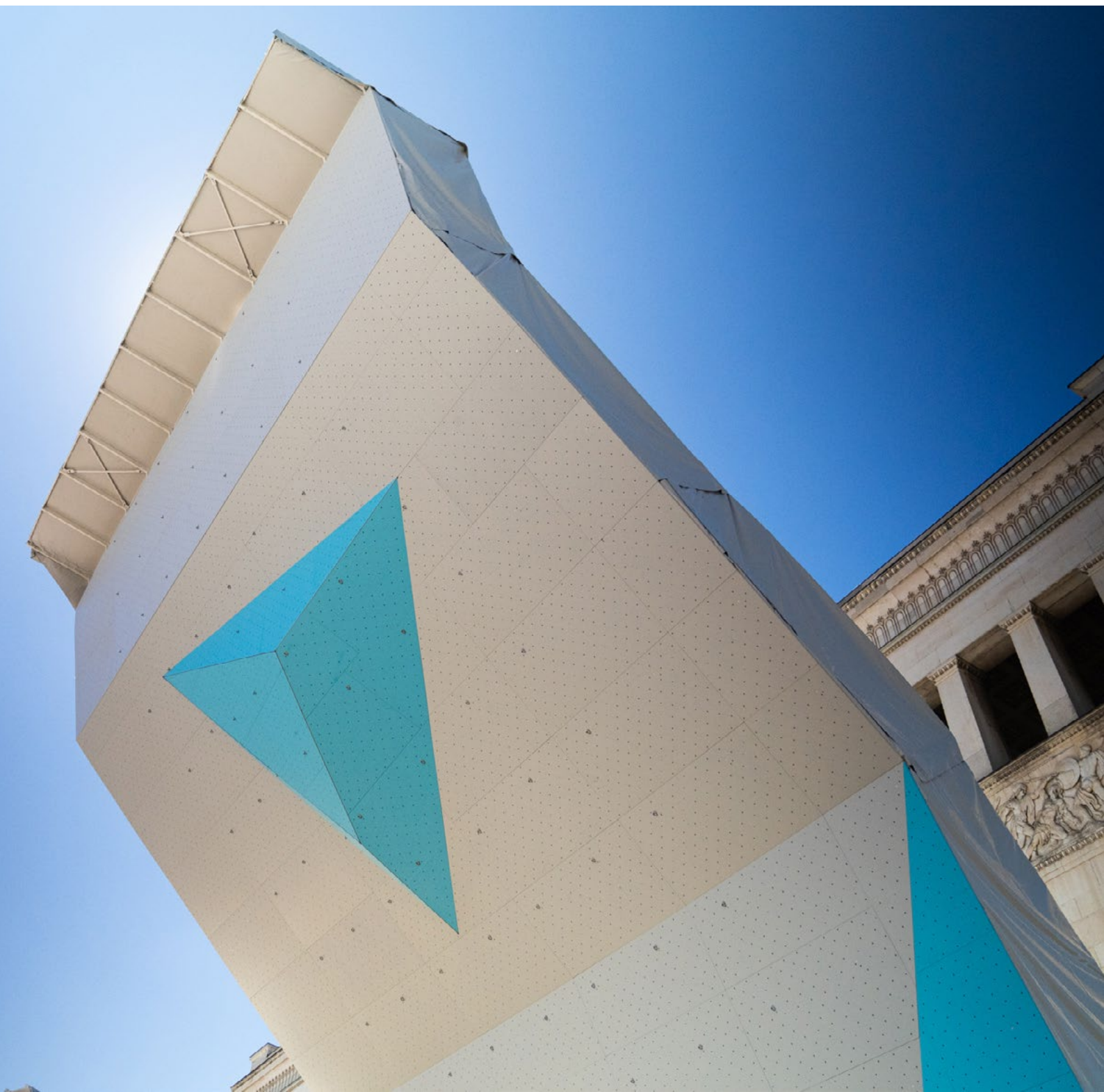


WALLTOPIA

OUTDOOR PREMIUM PANELS

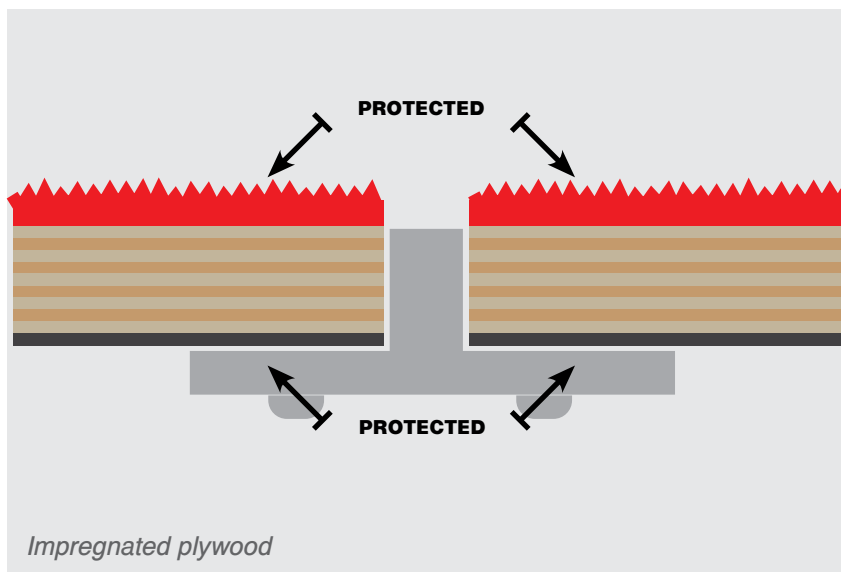
Data sheet



OUTDOOR CLIMBING WALL PANELS

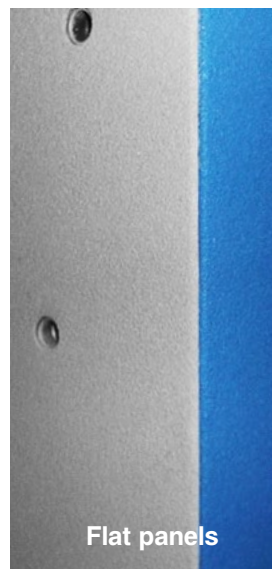
WALLTOPIA PREMIUM PANELS

Introducing a new technology, not familiar to the climbing industry to date, the Walltopia Premium Outdoor Panels are highly durable and weatherproof, resistant to impact, infiltration, heat and fire. The material does not change its characteristics over time while offering the precision, automation and speed of plywood production. Walltopia premium panels are also very easy for maintenance compared to fiberglass as they allow change of individual panels with precise dimension up to 1 mm.



Impregnated plywood

It's not a common practice in the industry to impregnate the back of the plywood panels installed outdoors. This can be very damaging as the humidity can spread within the panel and dramatically shorten its lifespan. This is why we impregnate the back side of the panels for outdoor climbing walls just as well, giving them better protection from the contact with the elements. However, plywood is not completely weatherproof and does have a shorter lifespan compared to fiberglass and Walltopia premium outdoor panels.



Fiberglass panels

More durable material compared to plywood, fiberglass is 100% water resistant, it does not change its characteristics over time. Fiberglass also gives the freedom to design and produce any imaginary shape including rocklike structures and curves. It lacks the precision of shape achieved with a CnC machine and doesn't allow painting automation which may lead to color imperfections. Fiberglass needs longer production time compared to plywood and Walltopia premium panels.

OUTDOOR CLIMBING WALL PANELS

Comparison Table

	Outdoor Premium Panels	Fiberglass Panels	Exterior Plywood Panels
Durability	●●●●●●	●●●●●◎	●●●●◎◎
Impact Resistance	●●●●●●	●●●●●◎	●●●●◎◎
Water Resistance	●●●●●◎	●●●●●◎	●●◎◎◎◎
Infiltration Resistance	●●●●●◎	●●●●●◎	●◎◎◎◎◎
Fire Resistance	●●●●●◎	●●●●◎◎	●●◎◎◎◎
Heat Resistance	●●●●●◎	●●●●◎◎	●●◎◎◎◎
Reaction to Fire according to EN 13501-1	B-s1, d0	B-s1, d0	D-s1, d0
Quality Management System	ISO 9001:2015	ISO 9001:2015	ISO 9001:2015
Compliance with EN 12572 Climbing Walls Standard	✓	✓	✓
Stainless Steel T-nuts	✓	✓	✓
Hot Dip Galvanized Steel Support Structure	✓	✓	✓
Type of Panels	Flat	Flat, Curved, Rock-topia	Flat
Easy Screwing of Volumes	●◎◎◎◎◎	●◎◎◎◎◎	●●●●●●
Production Speed	●●●●●◎	●◎◎◎◎◎	●●●●●●
Production Precision with CNC Machines	●●●●●●	●◎◎◎◎◎	●●●●●●
Production Color Consistency with Automatic Robot Painting	●●●●●●	●◎◎◎◎◎	●●●●●●
Installation Speed & Precision	●●●●●◎	●●●●◎◎	●●●●●●
Maintenance	●●●●●◎	●◎◎◎◎◎	●●●●◎◎

WALLTOPIA PREMIUM PANELS

TECHNICAL SPECIFICATIONS

Specification	Method	References EN 438-6 (EGF)	Results	Comments
Elastic Ultimate Strength	EN ISO 178:2003	>80 Mpa	Average: 147 MPa Min: 142 MPa Max: 150 MPa Standard Deviation: 3.3	✓ Passed Test speed: 2mm/ min
Tensile Strength	EN ISO 527-2:1996	>60 Mpa	Average: 125 MPa Min: 123 MPa Max: 127 MPa Standard Deviation: 1.9	✓ Passed Test speed: 5mm/ min
Density	EN ISO 1183- 1:2004 Method A	>1.35 g/cm ³	1.46 g/cm ³	✓ Passed Tested at 23° C
Strength against strike (Hole diameter)	EN 438-2, article no.21	<10 mm (left from 1800mm)	4.2 mm (left from 1800mm)	✓ Passed
Strength against moisture	EN 438-2, article no.15	Mass increase: <%8 Appearance: class4(*)	Mass increase: <%1.3 Appearance: class5(*)	✓ Passed
Strength against climatic shock / changes (Appearance, elastical strength and elasticity modulus)	EN 438-2, article no.19	Appearance: class4(*) Strength index: >0.95 Modulus index: >0.95	Appearance: class5(*) Strength index: 1.08 Modulus index: 0.974	✓ Passed
Strength against air conditions (Tested: 3 different colors: wooden design, blue and orange)	EN 438-2, article no.29	Contrast: class 3 Appearance: class4(*)	Contrast: wood: class 5 Blue: class 5 Orange: class 3 Appearance: wood: class5(*) blue: class5 orange: class 5	✓ Passed

WALLTOPIA PREMIUM PANELS

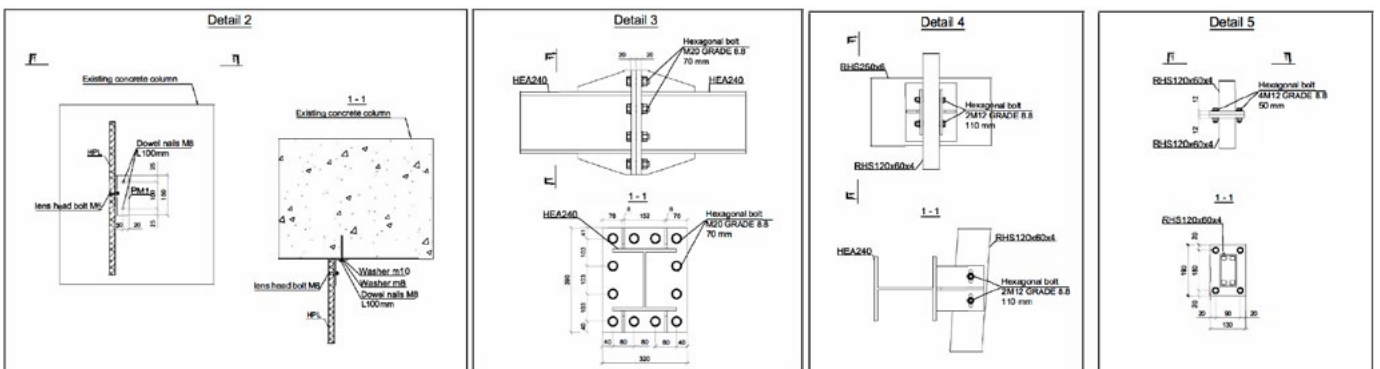
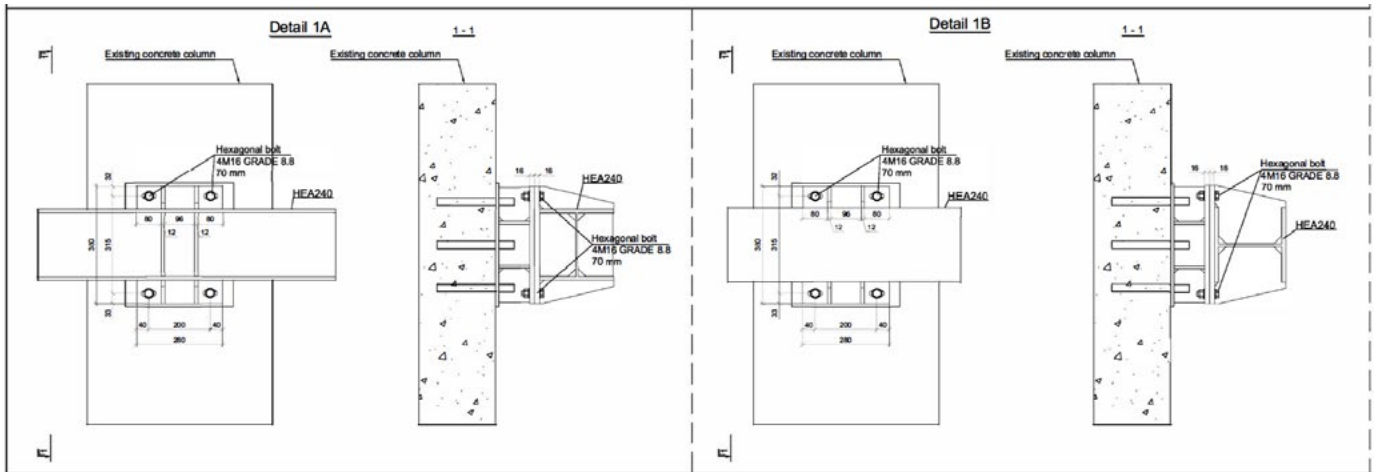
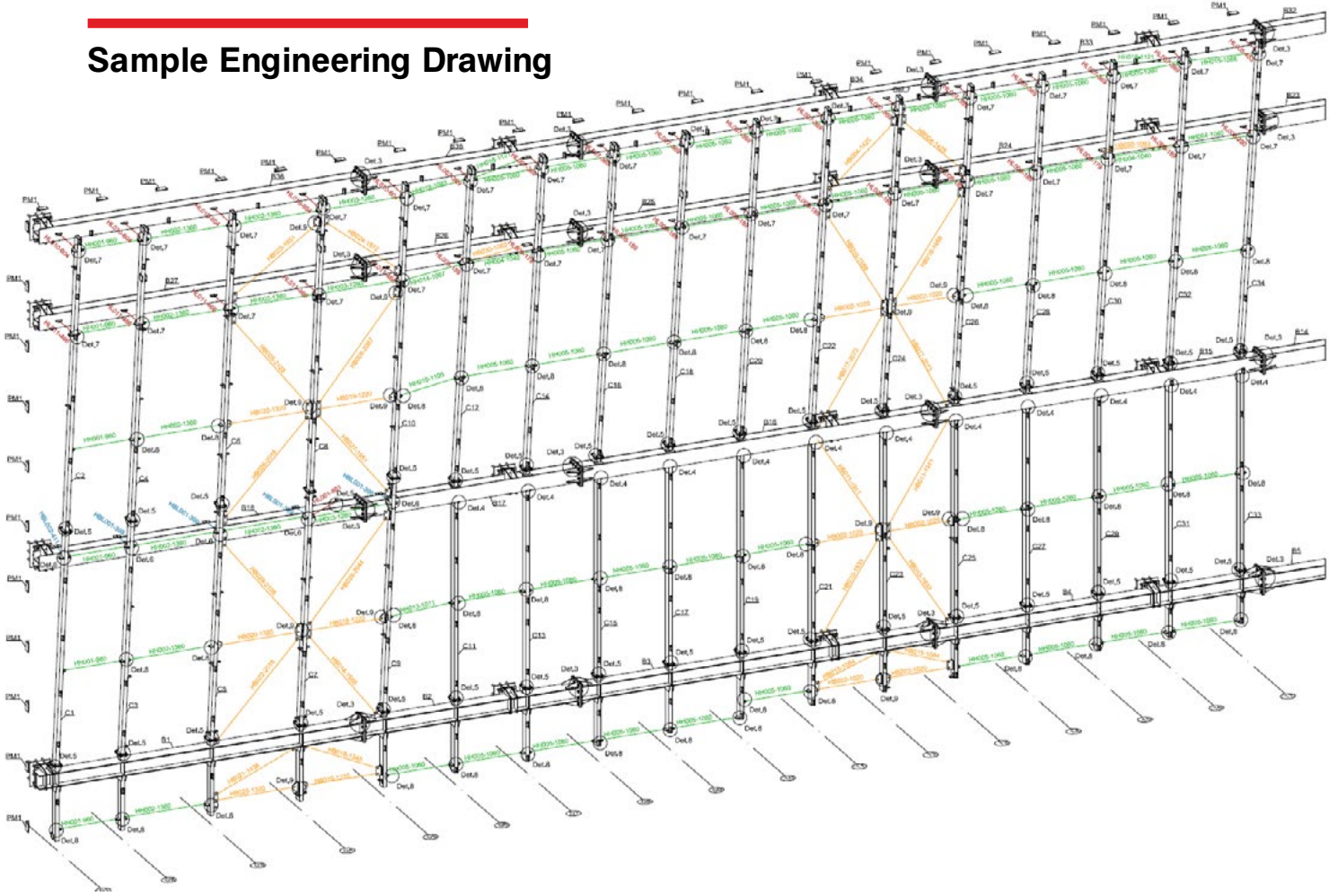
FIRE TESTING ACCORDING EN 45545-2

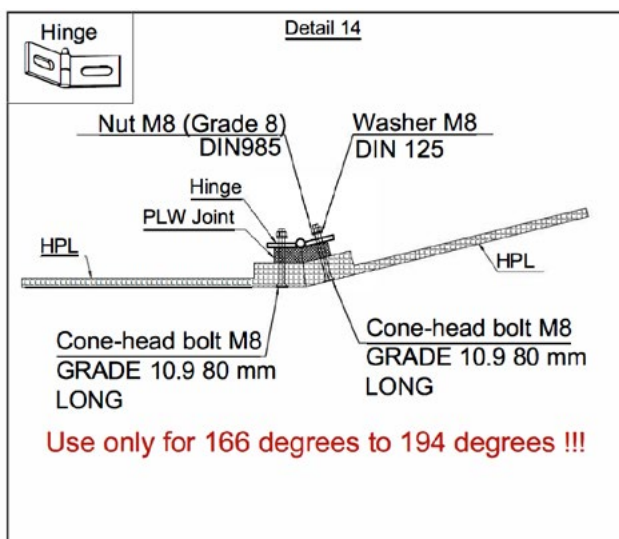
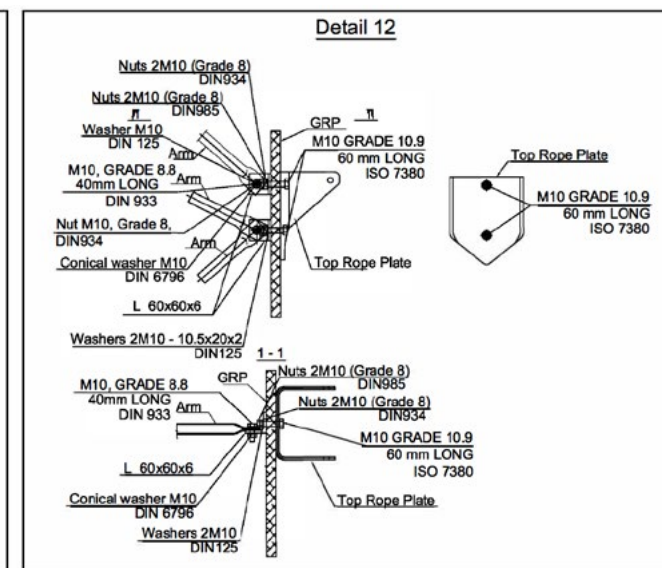
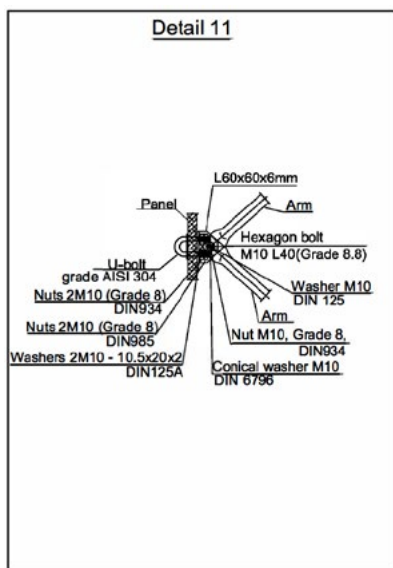
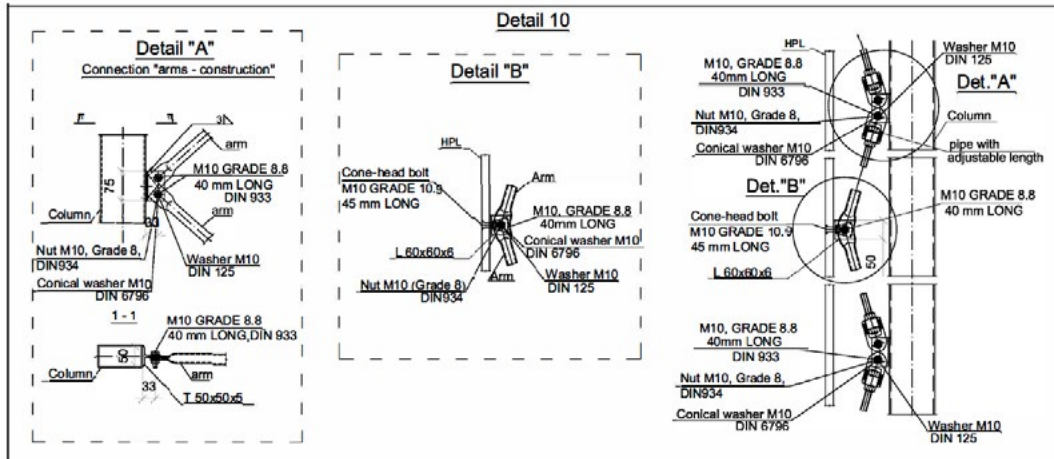
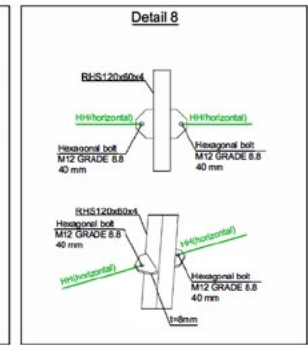
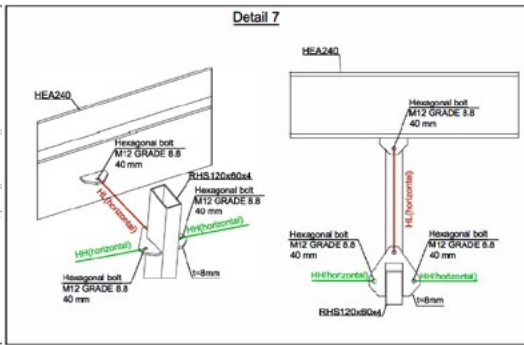
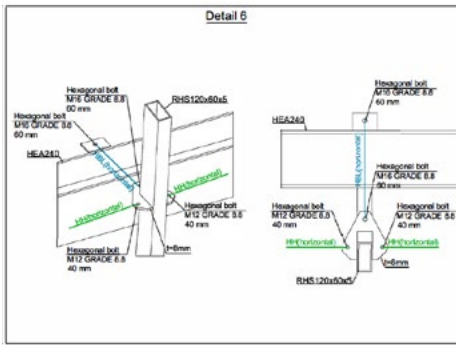
Specimen		1	2	3	average	
Irradiance	[kW/m ²]	50	50	50		
Testing with wire grid	Yes/No	No	No	No		
Orientation		hor	hor	hor		
Ignition and extinguishing						
Ignition	[s]	225	271	287	261	
Extinguishing	[s]	1200	1200	1200	1200	
Test duration	[s]	1200	1200	1200	1200	
Observations						
Non-flaming dripping	Yes/No	Yes	Yes	Yes	Yes	
Melting	Yes/No	No	No	No	No	
Swelling	Yes/No	No	No	No	No	
Carbonisation	Yes/No	No	No	No	No	
Heat release						
Avg. rate of heat emission	[kW/m ²]	77.44	72.68	73.17	74.43	
Avg. rate of heat emission at t=	60s after ignition	[kW/m ²]	52.76	46.62	56.74	52.11
	180s after ignition	[kW/m ²]	64.50	62.10	68.52	65.04
	300s after ignition	[kW/m ²]	67.66	61.94	65.59	65.06
	360s after ignition	[kW/m ²]	66.50	62.95	65.08	65.51
RHR max	value	[kW/m ²]	113.14	103.67	103.43	106.75
	at time	[s]	822.00	900.00	986.00	902.67
MAHRE	[kW/m ²]	64.8	57.0	56.7	59.5	
THR	[MJ/m ²]	75.4	67.5	68.1	70.3	
Mass loss						
Mass at ignition	[g]	109.6	108.0	107.6	108.4	
Absolute mass loss	[g]	56.7	53.6	52.8	54.4	
Mass loss rate	[g/m ² /s]	8.85	8.61	8.18	8.55	
Heat of decomposition						
Effective heat of decomposition	[MJ/kg]	11.74	11.16	11.43	11.44	

Observation: burning of all samples until test end

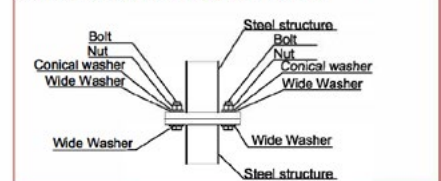
ENGINEERING

Sample Engineering Drawing





Scheme for mounting plates with slotted holes. Each hexagonal bolt M12, M16 must be assembled according to this scheme !!!



Every hexagonal bolt: M12, M16, M20 must be assembled according to this scheme!!!

