

Insulated Panel Systems

IND

ACCORDING TO B-s1,d0 EN 13501-1

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Project: TransWest nv, Kampveldstraat 45, 8020 Oostkamp, Belgium
Use: Logistical platform with a negative temperature

Technical Information Projet / Usage

Description

The IND panel is designed for use within temperature controlled and hygiene safe environments such as food processing, deep freeze, cold/chill store and clean rooms for bio-technology and pharmaceutical industries.

Application

The IND panel can be installed in controlled environments for internal and external wall, ceiling and roof applications (with an extra waterproof roof membrane), and can be laid vertically or horizontally. The Isocab IND panel is quick and easy to assemble, with an integrated omega option to allow for the rupture of thermal bridging in negative temperatures. Please see Figure 1 for more information.

Coating & Finishes

The standard hot-dipped galvanized steel is in accordance with EN 10346, with an exterior and interior nominal thickness of 0.5mm. The options that are available for the coated finishes are listed below. All are supplied with a protective film. For more information on the various applications in which these coatings can be used, please refer to the Isocab Coating Selector & Maintenance Guide :

- CLEAN*safe* 25, RAL 9010 or RAL 9002
- CLEAN*safe* 15, RAL 9010 or RAL 9002
- CLEAN*safe* 55, RAL 9010 or RAL 9002
- CLEAN*safe* 150, RAL 9010 or RAL 9002
- CLEAN*safe* Inox 150+, RAL 9010 (Classed Ai6)
- CLEAN*safe* Inox 304 line brushed / pinpoint / 2B finish
- CLEAN*safe* Inox 316L line brushed / pinpoint / 2B finish

For other options, please contact your sales person.

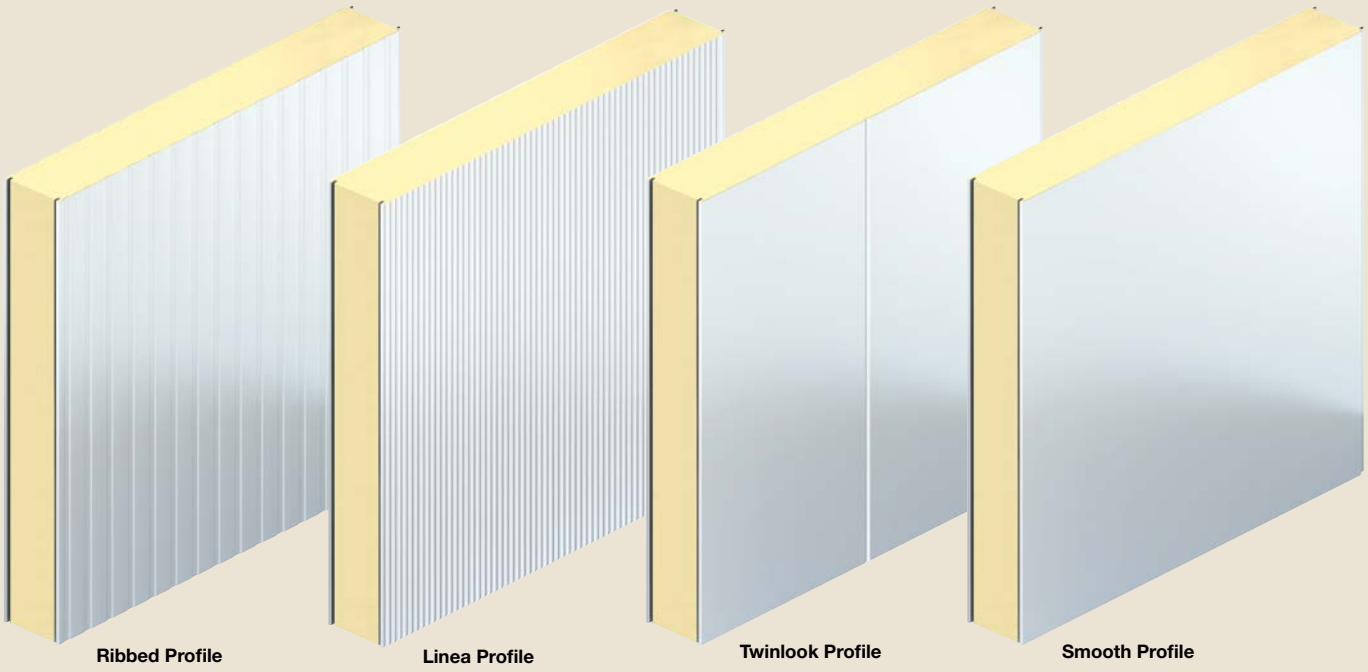
ISO 14001 &
ISO 18001

Structural & Thermal 10 YEAR Guarantee

LPCB LOSS PREVENTION CERTIFICATION BOARD

FM APPROVED

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Insulation

Polyisocyanurate (PIR) rigid foam.

Panel joint

The panel side joint is a symmetrical tongue and groove joint which achieves excellent thermal and structural performance. The panel side joint can accommodate vapour, hygiene and fire rated seals.

Thicknesses

The following thicknesses are available: 40, 60, 80, 100, 120, 140, 170, 200 and 220mm.

Widths

Standard: 1180mm
For container transport: 1120mm

Lengths

Standard lengths are from 2m. The maximum panel length is 19.2m. Panel lengths 13.5m to 19.2m are subject to additional transport surcharges.

Sea Freight

Timber crates are available on projects requiring sea freight shipping, at additional cost. Alternatively, steel containers can be used. Special loading charges apply.

Delivery

All deliveries (unless indicated otherwise) are by road transport to project site. Off-loading is the responsibility of the client.

Profiles

The profiles Ribbed, Linea, Twinlook and Smooth are available for the external sheet. For the internal sheet, the Ribbed profile is available. Please see Figure 2 for more information.

Reaction to Fire

The Isocab IND Panel benefits from a reaction to fire of:

- B-s2, d0 for a thickness of 40mm
- B-s1, d0 for thicknesses of 60mm to 220mm

Fire Resistance

The IND panel provides the following resistance to fire:

- EI30 for a thickness of 100mm with stitching each 300mm at the interlocking section on both sides
- EI30 for a thickness of 120mm
- EI60 for a thickness of 200mm

Accessories

A wide range of joint and mounting profiles, aswell as insulated doors are available.

Certification

The IND panels is certified with FM Global. It also benefits from a LPCB approval.

Acoustic Performance

IND panels have a predicted single figure weighted sound reduction of Rw= 25dB.

Air Tightness

IND panel achieves an air tightness of : 0.04m^3/hr/m^2 at 50Pa.

Guarantee

For more information on guarantee, please contact Isocab.

Quality

The IND panels are manufactured in a factory certified ISO 9001.

Packing

IND panels are stacked horizontally with external sheets facing upwards. The entire pack is wrapped in polythylene. The number of panels in each pack depends on the panel length, the weight and the thickness. Typical pack height is 1200mm. The maximum pack weight is 1500kg. Please see the table below for more information.

Thickness mm	Number of panels per pack
40	26
60	17
80	13
100	10
120	8
140	7
170	6
200	5
220	5

For container shipment, please contact your sales person.

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Project: Partner Logistic, Bargiestraat 5, 8900 Ieper, Belgium
Use: Logistical platform with a negative temperature

Technical Information Projet / Usage

Thermal Performance and Weights

	Thickness mm	40	60	80	100	120	140	170	200	220
IND (Ribbed profile)	Wall $U_{n,S}$ (W/m².K)	0.480	0.325	0.245	0.197	0.165	0.141	0.117	0.099	0.090
	Wall R (m².K/W)	2.083	3.077	4.082	5.076	6.061	7.092	8.547	10.101	11.111
	Partition $U_{n,S}$ (W/m².K)	0.461	0.316	0.240	0.194	0.162	0.140	0.115	0.098	0.090
	Partition Wall R (m².K/W)	2.169	3.165	4.167	5.155	6.173	7.143	8.696	10.204	11.111
	Ventilated Ceiling $U_{n,S}$ (W/m².K)	0.487	0.328	0.247	0.198	0.165	0.142	0.117	0.100	0.091
	Ventilated Ceiling R (m².K/W)	2.053	3.049	4.049	5.051	6.061	7.042	8.547	10.000	10.989
IND (Smooth profile)	Wall $U_{n,S}$ (W/m².K)	0.472	0.321	0.245	0.195	0.163	0.140	0.116	0.099	0.090
	Wall R (W/m².K)	2.119	3.115	4.115	5.128	6.135	7.143	8.621	10.101	11.111
	Partition $U_{n,S}$ (W/m².K)	0.452	0.312	0.238	0.192	0.161	0.139	0.115	0.098	0.089
	Partition Wall R (m².K/W)	2.212	3.205	4.202	5.208	6.211	0 7.194	8.696	10.204	11.236
	Ventilated Ceiling $U_{n,S}$ (W/m².K)	0.478	0.324	0.244	0.196	0.164	0.141	0.116	0.099	0.090
	Ventilated Ceiling R (m².K/W)	2.092	3.086	4.098	5.102	6.098	7.092	8.621	10.101	11.111
IND (All profiles)	Weight (40kg/m³ nominal value)	9.920	10.720	11.520	12.320	13.120	13.920	15.100	16.320	17.120

Please note the Lambda value is 0.020 W/m.K according to our CE labeling, $U_{n,s}=1/R$. These thermal values do not take into account the interlocking thermal loss or the fixing thermal bridge.

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Services

Technical Service

At Isocab our customers are a primary focus; this means high levels of customer support and technical expertise from the design phase through to product training and after-sales support.

Our Technical Services team forms an important part of this support. The team provides information on the technical aspects of construction when using Isocab products, including building regulations, certification held by Isocab and the design assistance that we can offer to our customers. Please contact your sales person for more information.

Customer Services

Our dedicated and highly qualified customer service team are always available for all customer queries. The team proactively works to anticipate the customers needs and to ensure that all requirements are met.

Marketing Service

Our team understands the importance of receiving samples and documentation quickly. Contact the marketing team for any of your sample or brochure requests.

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Technical Information

Single Span Tables for Wall Application - 0.5/0.5mm Ribbed Profile/Ribbed Profile

Summer temperature: Outside 55°C / Inside -25°C, Winter temperature: Outside -20°C / Inside -25°C. Valid for colour group 1 according to EN 14509

Pressure single span in daN/m²									Span m	Suction single span in daN/m²								
Thickness mm										Thickness mm								
220	200	170	140	120	100	80	60	40		40	60	80	100	120	140	170	200	220
2246	2041	1863	1639	1465	1218	972	726	480	1.00	415	726	972	1218	1465	1639	1863	2041	2246
1497	1361	1242	1093	976	812	643	450	264	1.50	45	390	643	812	976	1093	1242	1361	1497
1123	1021	932	810	701	558	418	283	157	2.00		118	365	558	701	810	932	1021	1123
880	787	699	586	498	390	286	188	100	2.50			153	341	498	586	699	787	880
685	609	532	437	365	281	202	129	66	3.00			40	171	321	437	532	609	685
506	472	413	333	274	208	147	92	46	3.50				70	179	293	413	481	527
387	362	320	258	210	157	109	67	33	4.00				11	90	176	313	377	403
306	286	253	203	163	121	83	50	24	4.50					34	101	210	298	319
248	231	205	162	129	95	64	39	18	5.00						49	137	227	258
204	191	169	131	103	75	51	30	14	5.50						15	84	160	209
172	161	142	107	84	61	41	24	11	6.00							47	110	157
147	137	120	88	69	50	33	19	9	6.50							21	72	112
126	118	101	74	57	41	27	16	7	7.00							1	44	77
110	103	85	62	48	34	22	13	6	7.50								23	51
97	90	73	53	40	29	19	11	5	8.00								7	30

Double Span Tables for Wall Application - 0.5/0.5mm Ribbed Profile/Ribbed Profile

Summer temperature: Outside 55°C / Inside -25°C, Winter temperature: Outside -20°C / Inside -25°C. Valid for colour group 1 according to EN 14509

Pressure double span in daN/m²									Span m	Suction double span in daN/m²								
Thickness mm										Thickness mm								
220	200	170	140	120	100	80	60	40		40	60	80	100	120	140	170	200	220
2246	2041	1863	1639	1465	1218	972	726	480	1.00	480	726	972	1218	1465	1639	1863	2041	2246
1497	1361	1242	1093	976	812	648	484	302	1.50	279	484	648	812	976	1093	1242	1361	1497
1123	1021	932	820	732	609	469	331	199	2.00		151	425	609	732	820	932	1021	1123
898	816	745	643	561	451	343	238	139	2.50			69	201	379	603	745	816	898
688	643	568	486	426	347	260	178	100	3.00				19	89	174	356	617	717
506	472	417	357	313	260	203	136	74	3.50						20	93	207	253
387	361	320	273	240	199	159	106	56	4.00								36	50
306	286	253	216	189	156	126	84	44	4.50									
248	231	205	175	153	128	102	67	34	5.00									
205	191	169	144	127	105	84	54	27	5.50									
172	161	142	121	107	89	71	45	22	6.00									
147	137	121	103	91	76	60	37	18	6.50									
126	118	104	89	78	65	51	31	15	7.00									
110	103	91	78	68	57	43	26	12	7.50									
97	90	80	68	60	50	37	22	11	8.00									

Notes

1. Values have been calculated using the limit state method described in EN14509. Taking imposed loads, temperature and creep into account
2. Design criteria
   Safety factors on loads: ULS 1.5 (variable) 1.35 (permanent) / SLS 1
   Safety factors on material: Wrinkling of face: ULS 1.14 / SLS 1.03. Shear of core: ULS 1.3 / SLS 1.08
   Deflection: S pan/200
   Summer temperature: Outside 55°C / Inside -25°C, Winter temperature: Outside -20°C / Inside -25°C
   Minimum end support width 40mm and minimum intermediate support width 60mm
3. The actual wind suction load resisted by the panel is dependent on the number of fasteners used. The fastener calculation should be carried out in accordance with the appropriate standard
4. For Intermediate values linear interpolation may be used

For walls outside of the colour group 1, a calculation note can be requested from the design office. For entire ceiling performances outside of the walk-on maximal span, you can contact the drawing office for a calculation note.

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Walk-on Maximal Span by Markets

	Safety point load for maximal walk on span (m)		
	Belgium	UK	Other countries
Thickness mm	1.5kN point load with 3 as safety factor = 4.5 kN	0.9 kN point load plus 0.25 kN/m² with 1.6 as safety factor	1kN point load with 2 as safety factor = 2kN
40	2.70	4.78	5.72
60	4.00	6.09	8.10
80	6.00	6.80	
100	6.75	8.27	
120	8.00	8.95	
140	8.20	12.00	
170	9.40	12.50	
200	10.00	14.00	
220	10.00	14.00	

Beyond maximal manufactured length
Maximum maintenance traffic only one person with small tools per panel

	Fixing design resistances Rd (γ_m = 1.33)
Omega inside panel plus clamps. Value valid for panel width with two omega plus clamps	8.00 kN
Threaded rods with plastic bolts and metallic insert	3.30 kN
Aluminum T support SAMI 35T	0.164 kN/lm
Aluminum T support SAMI 50T	0.154 kN/lm
Aluminum T support TT4135	0.272 kN/lm/side
Aluminum T support TT4100	0.215 kN/lm/side
Aluminum T support with isolated slide TH4102	0.358 kN/lm/side
Aluminum T support S384-4	0.195 kN/lm/side
Steel T support ST-3130	0.283 kN/lm/side
Aluminum omega support	0.140 kn/lm/side

Roof Span Table for Membrane Fixed Mechanically

Standard admissible span

Thickness mm	Standard Admissible Span
100	3.50
200	6.00

The standard admissible span is referring to the spans used during the tensile strength test.

Maximum brut load

Thickness mm	Maximum Brut Load (Pa)
100	3500
200	4000

The maximum loads do not take into account the security coefficient, which are country dependent. For other panel thicknesses, please contact the drawing office.

Roof Span for Glued Membrane

Without a security coefficient, the maximum adhesion on the external sheet is 10kPa= 10kN/m² or 1000daN/m².

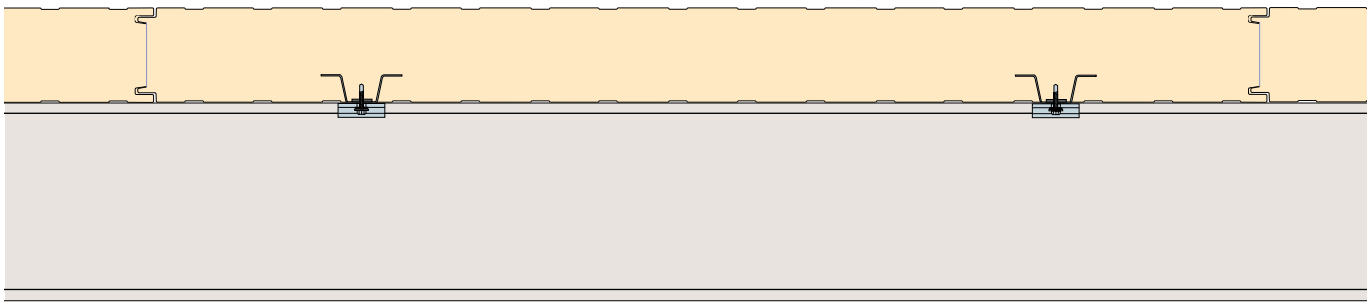


Project: Triballat Noyal, BP 93106, 35531 Noyal-sur-Vilaine, France
Use: Production site with positive temperatures

Technical Information

Figure 1 - Integrated Omega

The omega is integrated within panels of a thickness greater than 120mm.



Note : These drawings are examples. For the complete details, please contact Isocab Technical Services.

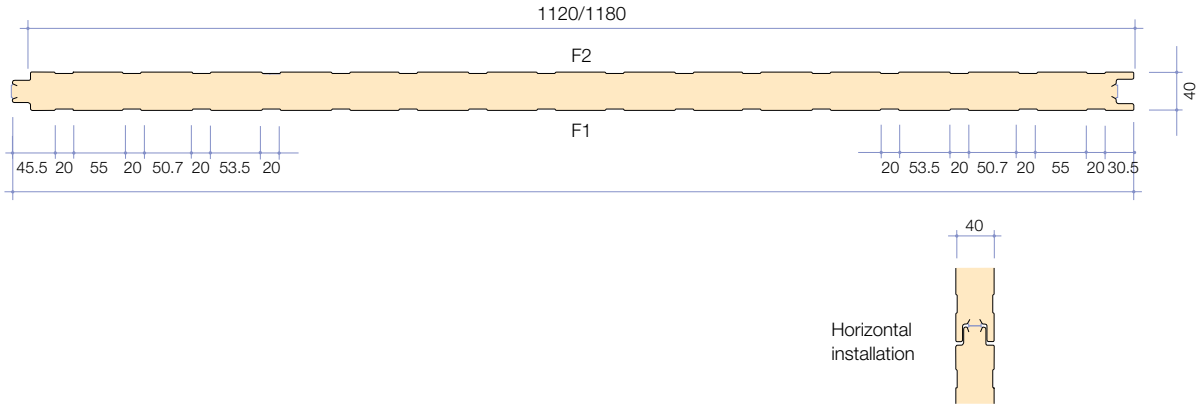
Technical Information

Figure 3

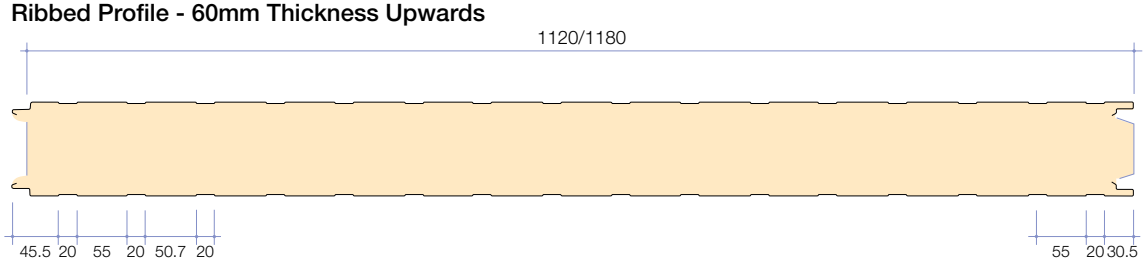
All dimensions are in mm.

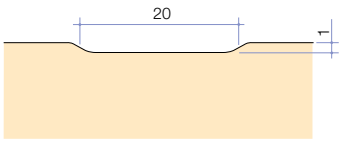
Ribbed Profile- 40mm Thickness

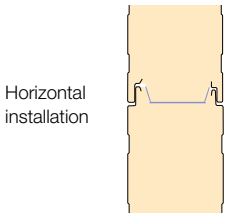
Please note the joint detail for a 40mm panel is different to the other panel thicknesses for all profiles.



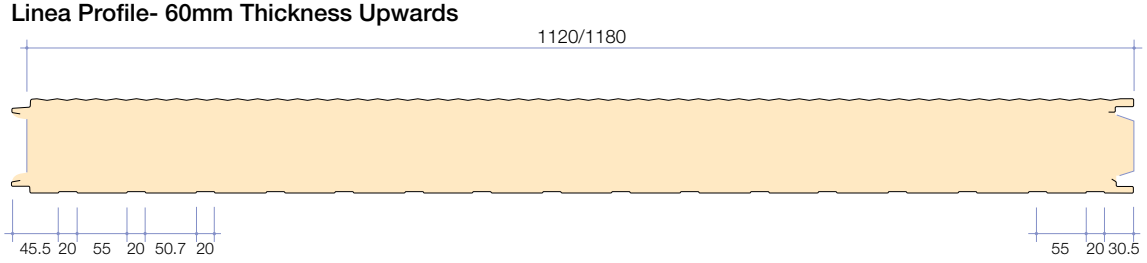
Ribbed Profile - 60mm Thickness Upwards

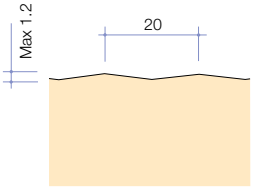


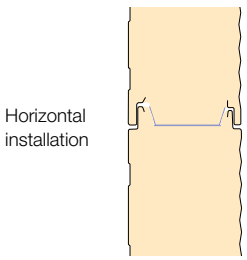




Linea Profile- 60mm Thickness Upwards

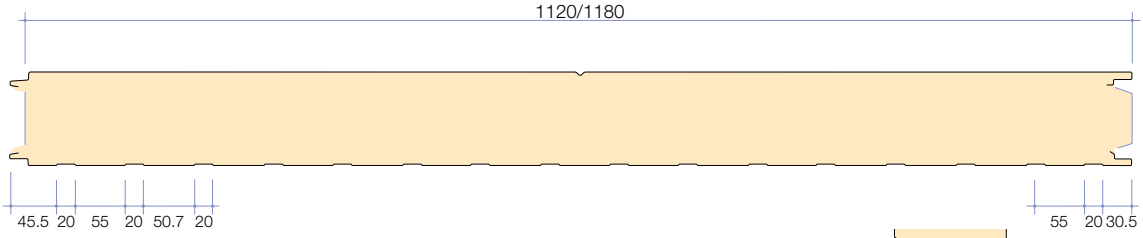


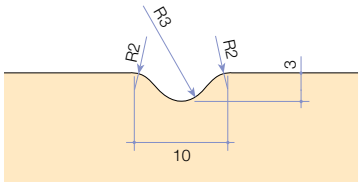




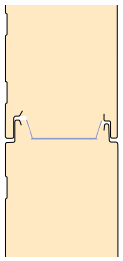
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Twinlook Profile- 60mm Thickness Upwards

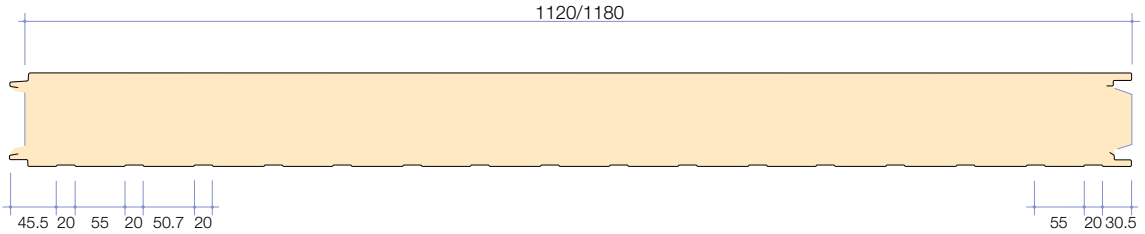




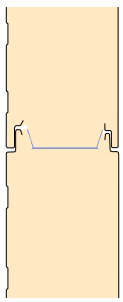
Horizontal installation

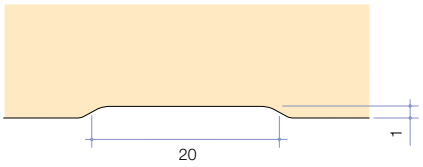


Smooth Profile- 60mm Thickness Upwards



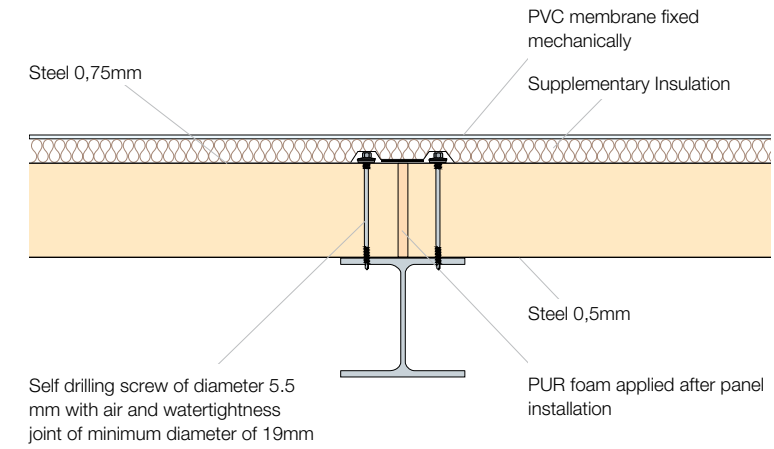
Horizontal installation

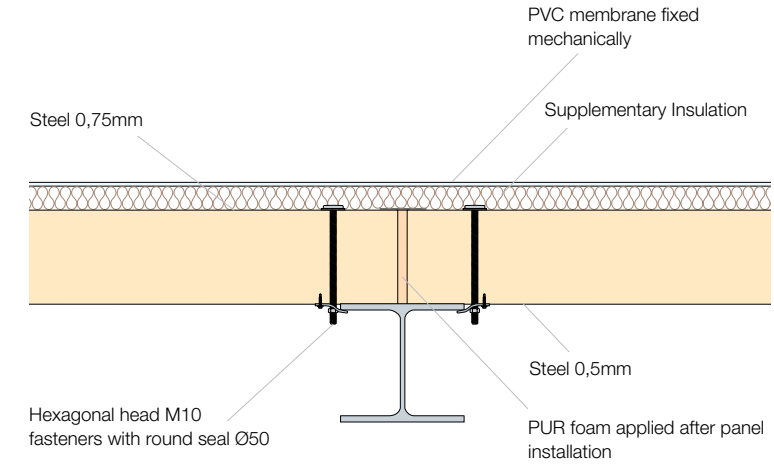


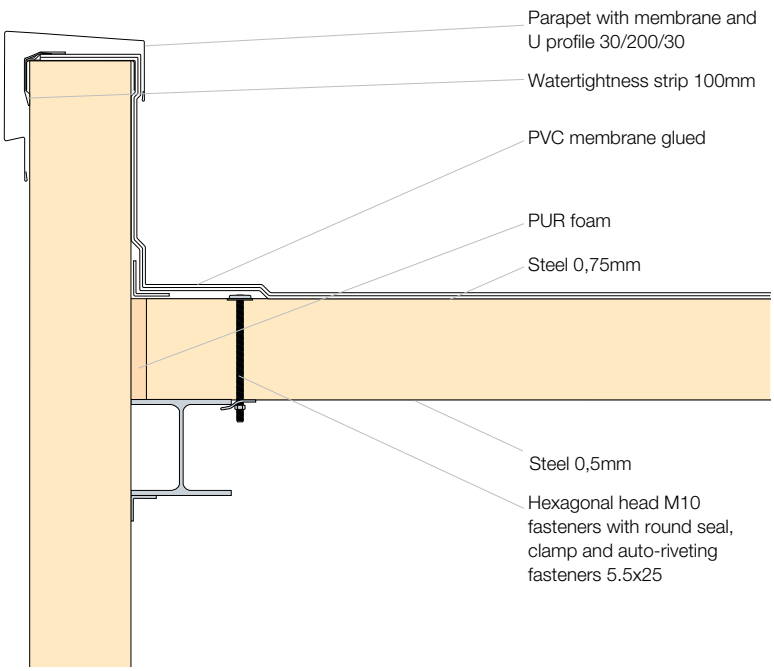


Technical Information

Figure 2 - Roof Application with Membrane Details







Note: These drawings are examples. For the complete details, please contact Isocab Technical Services.



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