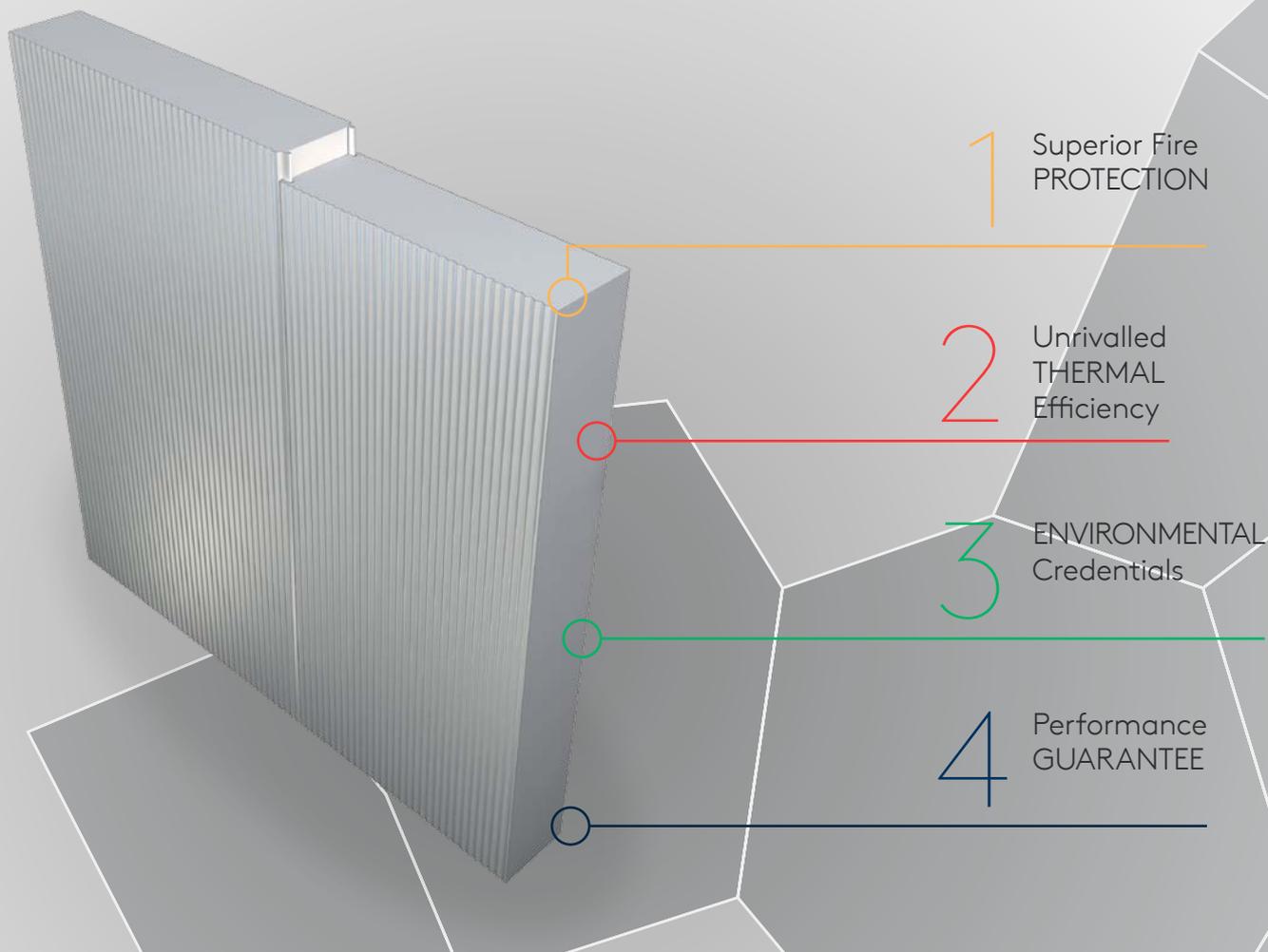


Insulated Panel Systems

QuadCore™ IND





QuadCore™ IND

Description

The QuadCore™ 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 QuadCore™ 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 QuadCore™ 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:

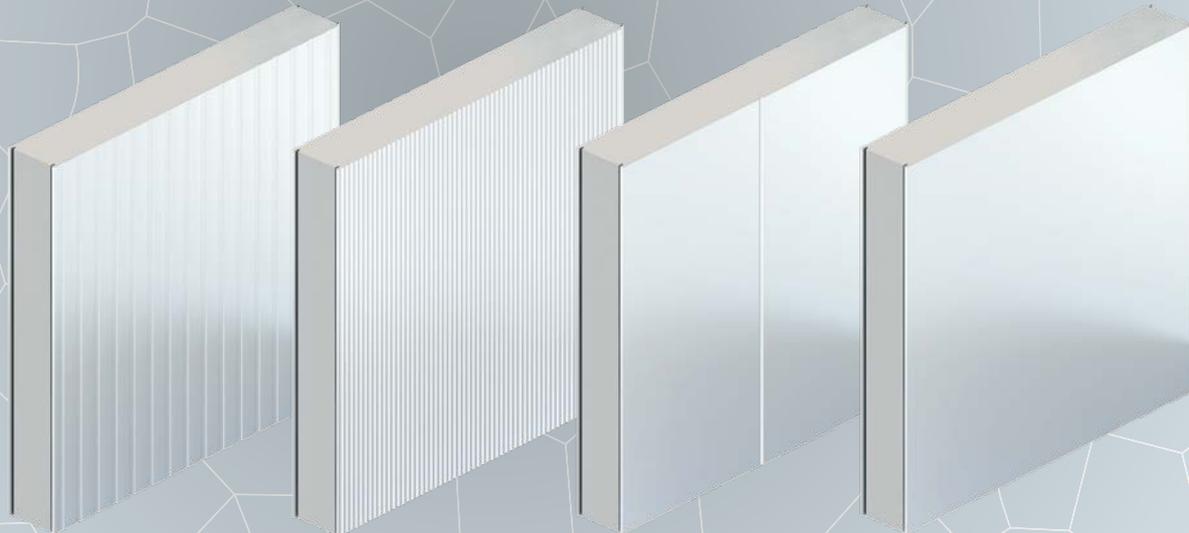
- CLEANsafe 15
- CLEANsafe 25
- CLEANsafe HDP 35
- CLEANsafe PET 55
- CLEANsafe PUR 55
- CLEANsafe PVC 150
- CLEANsafe AZ
- CLEANsafe INOX PET 150
- CLEANsafe INOX 304L
- CLEANsafe INOX 316L

For other options, please contact your sales person.

ISO 14001 &
OHSAS 18001



Approved FM Global 4880/4881/4882, classe 1 and unlimited height for Isocab Industrial Agro-Alimentaire (IND) with QuadCore™



Ribbed Profile

Linea Profile

Twinlook Profile
(Perpignan)

Smooth Profile

Insulation

QuadCore™ Technology grey insulation.

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 QuadCore™ IND 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 QuadCore™ IND panel provides the following resistance to fire:

- EI30 for a thickness of 120mm
- EI60 for a thickness of 200mm

Accessoires

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

Certification

Approved FM Global 4880/4881/4882, classe 1 and unlimited height for Isocab Industrial Agro-Alimentaire (IND) with QuadCore™. Our certifications are downloadable via our www.isocab.com

Acoustic Performance

The QuadCore™ IND panels have a predicted single figure weighted sound reduction of $R_w = 25\text{dB}$.

Air Tightness

The QuadCore™ IND panel achieves an air tightness of: $0.04\text{m}^3/\text{hr}/\text{m}^2$ at 50Pa.

Guarantee

For more information on guarantee, please contact Isocab.

Quality

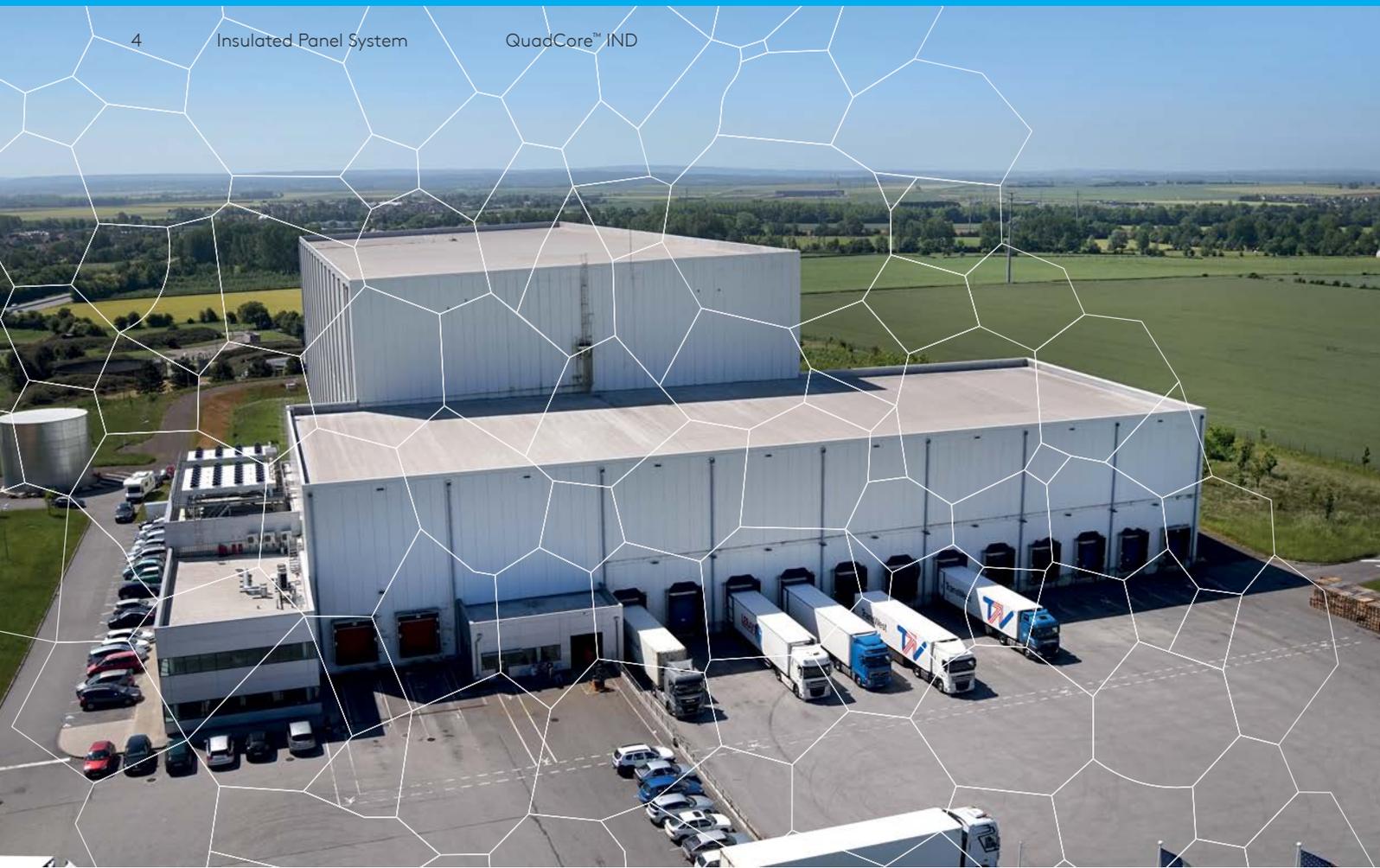
The QuadCore™ IND panels are manufactured in a factory certified ISO 9001.

Packing

QuadCore™ 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 in 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



Technical Information

Thermal Performances and Weights according EN14509

	Dikte in mm	40	60	80	100	120	140	170	200	220
QuadCore™ IND (Ribbed profile)	Wall $U_{n,S}$ (W/m ² .K)	0.436	0.294	0.222	0.178	0.148	0.127	0.105	0.089	0.081
	Wall R (m ² .K/W)	2.294	3.401	4.505	5.618	6.757	7.874	9.524	11.236	12.346
	Partition wall $U_{n,S}$ (W/m ² .K)	0.420	0.287	0.217	0.175	0.147	0.126	0.104	0.089	0.081
	Partition wall R (m ² .K/W)	2.381	3.484	4.608	5.714	6.803	7.937	9.615	11.236	12.346
	Ventilated Ceiling $U_{n,S}$ (W/m ² .K)	0.441	0.297	0.223	0.179	0.149	0.128	0.105	0.090	0.082
	Ventilated Ceiling R (m ² .K/W)	2.268	3.367	4.484	5.587	6.711	7.813	9.524	11.111	12.195
QuadCore™ IND (Smooth profile)	Wall $U_{n,S}$ (W/m ² .K)	0.428	0.290	0.219	0.176	0.147	0.127	0.105	0.089	0.081
	Wall R (m ² .K/W)	2.336	3.448	4.566	5.682	6.803	7.874	9.524	11.236	12.346
	Partition wall $U_{n,S}$ (W/m ² .K)	0.412	0.283	0.215	0.174	0.146	0.125	0.104	0.088	0.080
	Partition wall R (m ² .K/W)	2.427	3.534	4.651	5.747	6.849	8.000	9.615	11.364	12.500
	Ventilated Ceiling $U_{n,S}$ (W/m ² .K)	0.434	0.293	0.221	0.177	0.148	0.127	0.105	0.089	0.081
	Ventilated Ceiling R (m ² .K/W)	2.304	3.413	4.525	5.650	6.757	7.874	9.524	11.236	12.346
QuadCore™ IND (all profiles)	Weight (40 kg/m ³ Nominal value)	9.920	10.720	11.520	12.320	13.120	13.920	15.120	16.320	17.120

Note: The lambda value for calculations is 0.018 W/m.K as per CE labels.

$U_{n,S}$ = 1/R doesn't take into account interlocking thermal loss or the fixing thermal bridge.



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.

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/m ²									Span m	Suction double span in daN/m ²								
Thickness in mm										Thickness in mm								
220	200	170	140	120	100	80	60	40		40	60	80	100	120	140	170	200	220
21.338	20.410	18.633	16.395	14.646	12.185	9.723	7.262	4.800	1.00	4.088	7.262	9.723	12.185	14.646	16.395	18.633	20.410	21.338
14.226	13.607	12.422	10.930	9.764	8.123	6.429	4.501	2.642	1.50	0.458	3.806	6.230	8.123	9.764	10.930	12.422	13.607	14.226
10.669	10.205	9.317	8.105	7.013	5.582	4.181	2.832	1.575	2.00		1.177	3.544	5.278	7.013	8.105	9.317	10.205	10.669
8.535	7.871	6.989	5.857	4.982	3.899	2.857	1.876	0.997	2.50			1.530	3.309	4.634	5.788	6.989	7.871	8.535
6.846	6.087	5.317	4.365	3.651	2.813	2.021	1.293	0.662	3.00			0.400	1.707	3.102	4.012	5.278	6.087	6.846
5.058	4.723	4.133	3.326	2.739	2.081	1.469	0.919	0.458	3.50				0.703	1.792	2.828	3.867	4.789	5.268
3.872	3.616	3.196	2.580	2.095	1.573	1.094	0.672	0.327	4.00				0.108	0.901	1.775	2.870	3.657	4.034
3.060	2.857	2.525	2.032	1.630	1.211	0.832	0.504	0.241	4.50					0.336	1.008	2.098	2.820	3.187
2.478	2.315	2.045	1.622	1.288	0.948	0.645	0.386	0.182	5.00						0.494	1.365	2.192	2.581
2.048	1.913	1.690	1.311	1.031	0.753	0.508	0.301	0.141	5.50						0.148	0.844	1.598	2.097
1.721	1.607	1.420	1.071	0.836	0.607	0.406	0.239	0.111	6.00							0.472	1.097	1.574
1.466	1.370	1.196	0.885	0.686	0.495	0.330	0.193	0.088	6.50							0.205	0.722	1.118
1.264	1.181	1.006	0.738	0.568	0.409	0.271	0.157	0.072	7.00							0.014	0.442	0.771
1.101	1.029	0.852	0.620	0.476	0.340	0.225	0.130	0.059	7.50								0.232	0.505
0.968	0.904	0.727	0.526	0.401	0.286	0.188	0.108	0.049	8.00								0.074	0.302

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/m ²									Span m	Suction double span in daN/m ²								
Thickness mm										Thickness mm								
220	200	170	140	120	100	80	60	40		40	60	80	100	120	140	170	200	220
21.338	20.410	18.633	16.395	14.646	12.185	9.723	7.262	4.800	1.00	4.800	7.262	9.723	12.185	14.646	16.395	18.633	20.410	21.338
14.226	13.607	12.422	10.930	9.764	8.123	6.482	4.841	3.015	1.50	2.786	4.841	6.482	8.123	9.764	10.930	12.422	13.607	14.226
10.669	10.205	9.317	8.197	7.323	6.092	4.689	3.313	1.986	2.00		1.507	4.253	6.092	7.323	8.197	9.317	10.205	10.669
8.535	8.164	7.453	6.434	5.614	4.512	3.431	2.382	1.385	2.50			0.685	2.006	3.789	6.032	7.453	8.164	8.535
6.884	6.429	5.682	4.855	4.261	3.466	2.604	1.776	1.002	3.00				0.187	0.889	1.741	3.558	6.171	7.113
5.058	4.723	4.174	3.567	3.130	2.605	2.026	1.357	0.744	3.50						0.195	0.931	2.068	2.535
3.872	3.616	3.196	2.731	2.397	1.994	1.591	1.057	0.565	4.00								0.358	0.497
3.060	2.857	2.525	2.158	1.894	1.576	1.257	0.836	0.437	4.50									
2.478	2.315	2.045	1.748	1.534	1.276	1.019	0.671	0.343	5.00									
2.048	1.913	1.690	1.445	1.268	1.055	0.842	0.545	0.274	5.50									
1.721	1.607	1.420	1.214	1.065	0.886	0.707	0.447	0.221	6.00									
1.466	1.370	1.210	1.034	0.908	0.755	0.601	0.370	0.181	6.50									
1.264	1.181	1.044	0.892	0.783	0.651	0.507	0.310	0.150	7.00									
1.101	1.029	0.909	0.777	0.682	0.567	0.431	0.261	0.125	7.50									
0.968	0.904	0.799	0.683	0.599	0.499	0.369	0.222	0.105	8.00									

Notes:

- Values have been calculated using the limit state method described in EN14509. Taking imposed loads, temperature and creep into account
- 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
- 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
- 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.

Technical Information

Walk-on Maximal Span by Markets

Thickness mm	Safety point load for maximal walk on span (m)		
	Belgium	UK	Other regions
	1.5kN point load with 3 as safety factor = 4.5kN	0.9kN point load plus 0.25kN/m ² 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	7.00	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 ($\gamma_m = 1.33$)
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
Aluminium T ophangprofiel 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

Dikte QuadCore™ Industrial Agro-alimentaire (IND) in (mm)	Standard Admissible Span (m)
100	5
120	5.75
140	6.25
170	7.20
200	7.85
220	8.00

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.

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

For walls outside color group 1 you can request a calculation from the Technical Department. For full ceiling performance beyond the maximum span for walkability, contact the Technical Department for a calculation.

Roof Span for Glued Membrane

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

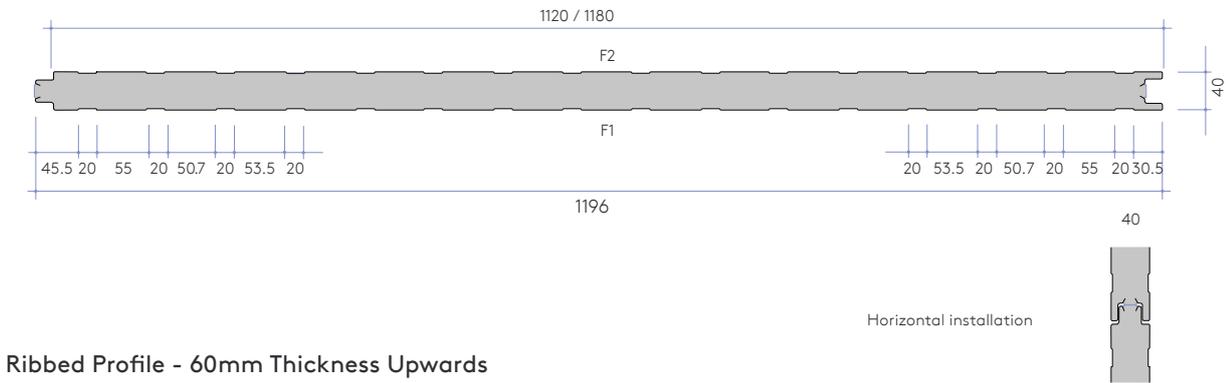
Technical Information

Figure 1

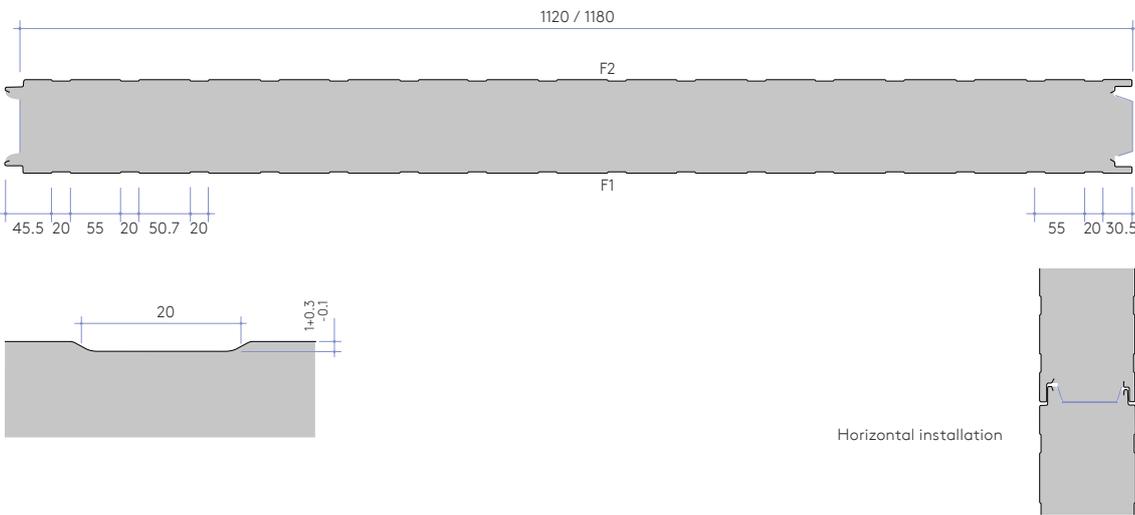
All dimensions are in mm.

Ribbed profile - Thickness 40 mm

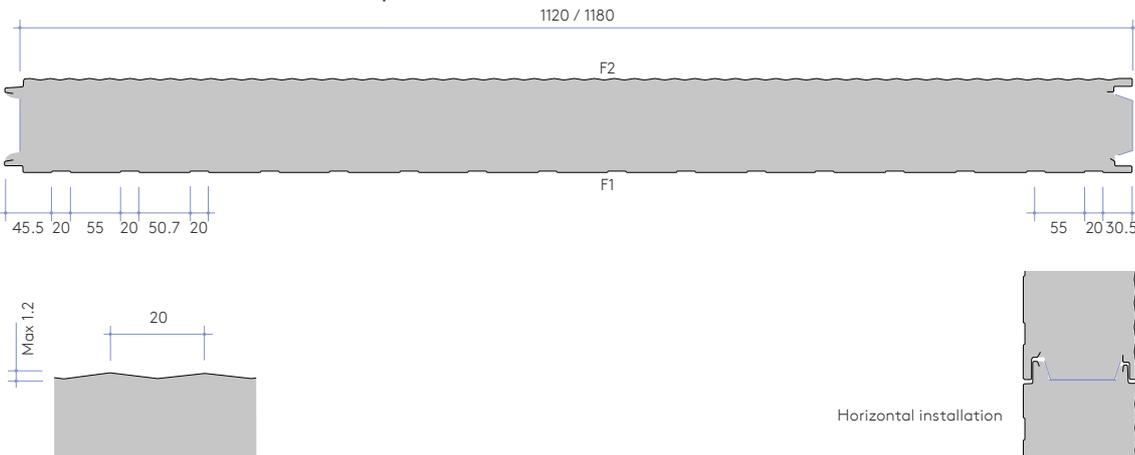
Note that the tongue-and-groove joint detail for the 40 mm panel is different from the other thicknesses. This is the case for all profiles.



Ribbed Profile - 60mm Thickness Upwards



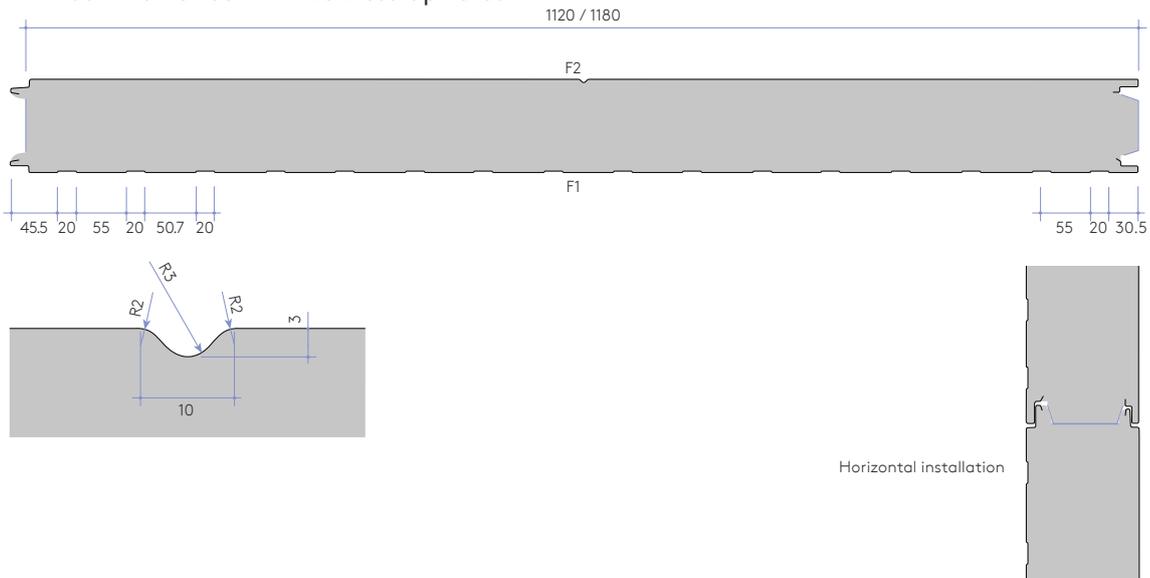
Linea Profile- 60mm Thickness Upwards



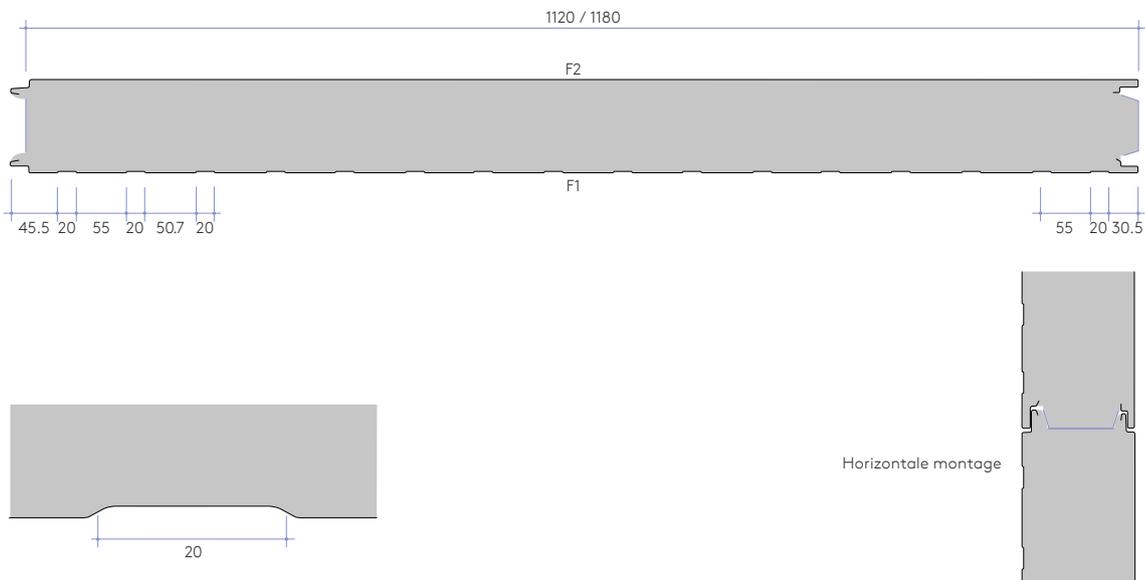
Note: These drawings are examples. For the complete details, please contact Isocab Technical Services.

Technical Information

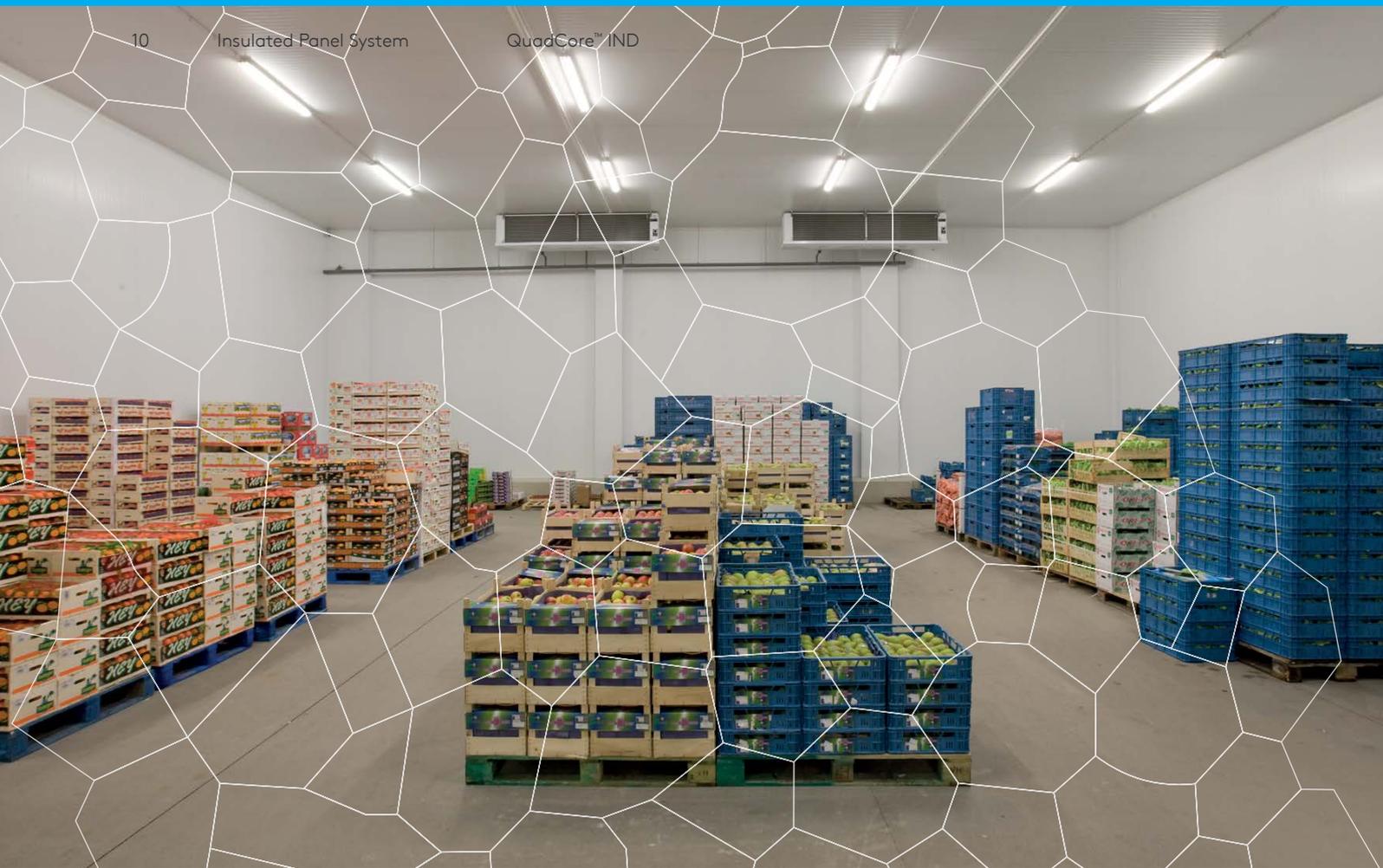
Twinlook Profile- 60mm Thickness Upwards



Smooth Profile- 60mm Thickness Upwards



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



Project: Horeca Markt, Jacob van Arteveldestraat 7, 8000 Brugge, Belgium
Application: Supermarket in negative & positive temperatures

Technical Informations

Figure 2 - Integrated Omega

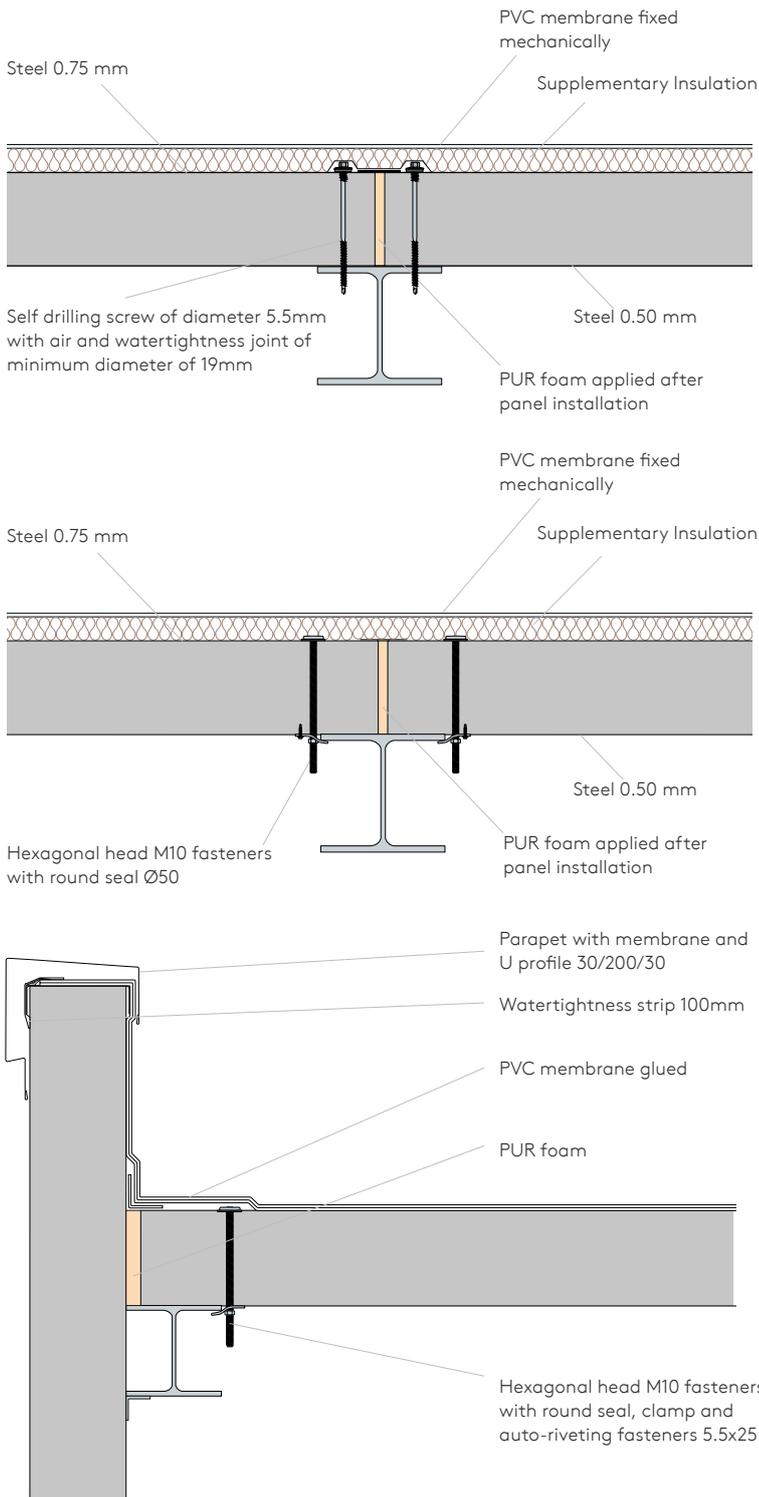


The omega is integrated within panels of a thickness greater than 120mm.

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

Technical Information

Figure 3: Roof Application with Membrane Details



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

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QC IND 10.2018 EN

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By Kingspan