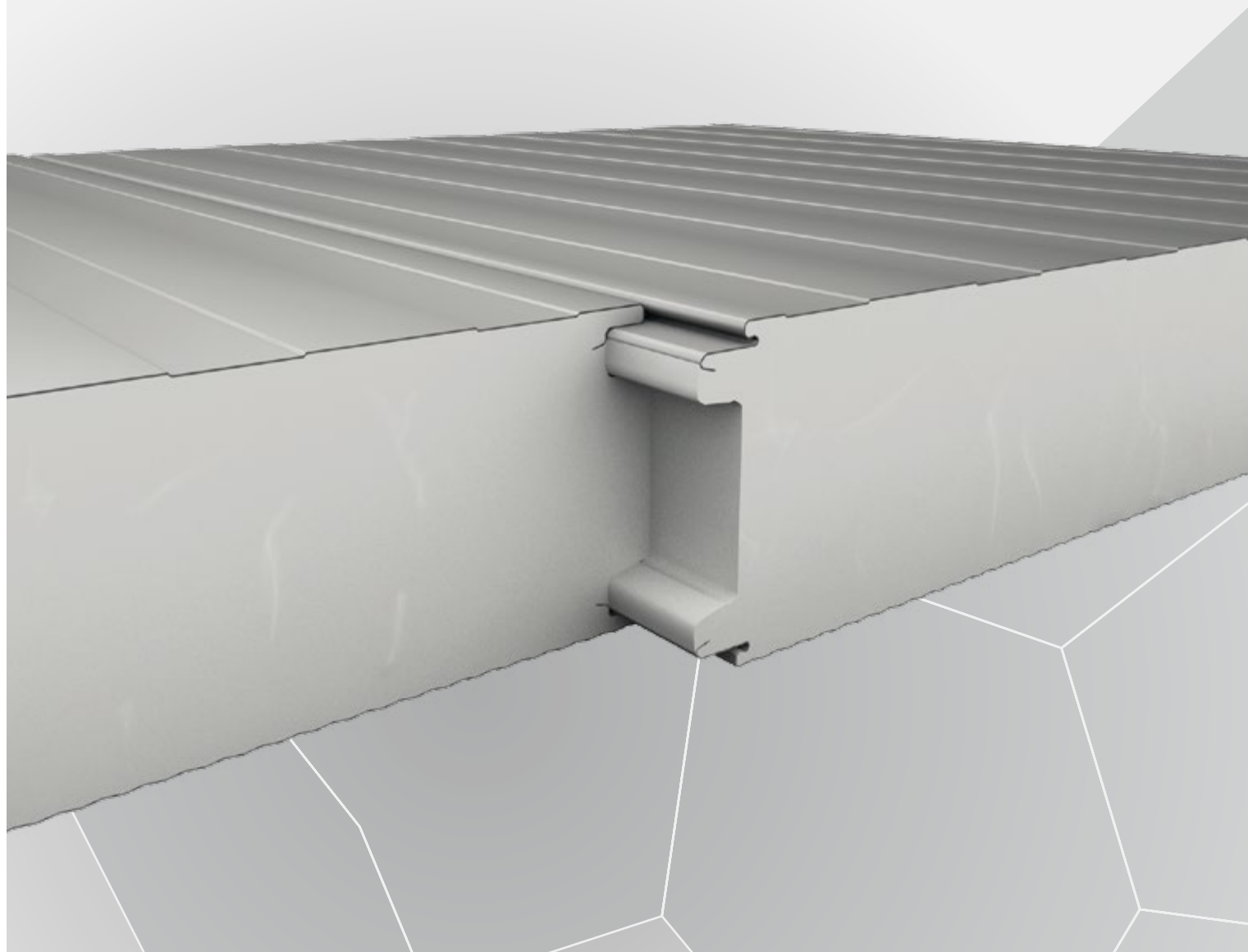


Cold store panels  
ems brand sales by Kingspan

# ems-isolier<sup>®</sup> QuadCore EM

## Datasheet



POWERED BY  
**QuadCore**<sup>®</sup>  
TECHNOLOGY





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# ems-isolier® QuadCore EM

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## Description

With its QuadCore® 1 high-performance insulation core and specially developed joint geometry, the ems-isolier® QuadCore EM wall panel with visible fixing has been specifically designed for the toughest requirements in temperature-controlled buildings.

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## Application

The ems-isolier® QuadCore EM is suitable for use in temperature-controlled and hygienically safe environments such as food processing, cold store and fresh food logistics, cleanrooms, and the biotechnology and pharmaceutical industry.

In controlled environments it can be laid vertically or horizontally as an internal or external wall, and for ceilings.



ISO 9001



# Technical information



## Dimensions, weight, and insulation performance

Overall width [mm]	1,200									
Thickness of insulation core [mm]	40	60	80	100	120	140	150	170	200	220
U [W/m²K]* as per EN ISO 6946	0.45	0.31	0.23	0.19	0.16	0.13	0.13	0.11	0.09	0.09
R [m²K/W] as per EN ISO 6946	2.05	3.10	4.15	5.21	6.26	7.31	7.84	8.89	10.47	10.95
U [W/m²K]* as per EN 14509 (2013-12) with effect of joint	0.51	0.32	0.24	0.19	0.16	0.14	0.13	0.11	0.10	0.09
R [m²K/W] as per EN 14509 (2013-12) with effect of joint	2.05	3.10	4.15	5.20	6.25	7.30	7.80	8.85	10.45	10.95
Weight [kg/m²]	10.8	11.5	12.3	13.0	13.8	14.6	14.9	15.7	16.8	17.6
Max. delivered length [m]	20									

\* Values on the basis of test report no. LI-20-067

## Coating & surfaces

As standard, the hot-dip galvanised steel to EN 10346 is supplied as follows:

**External top layer:** Nominal thickness 0.6 mm, standard coating SP 25 µm

**Internal top layer:** Nominal thickness 0.5 mm, standard coating DU 15 µm

Upon request, various coatings and finishes specially for use in cold stores are available, e.g:

### FS 3000® – 25 µm coating

Food Safe 3000, with a nominal coating thickness of 25 µm, specially for use in food processing. Through the special composition of this stove-enamel finish based on polyester, ems achieves the required physiological harmlessness confirmed with a corresponding certificate by the Wesseling Institute in Altenberge.

### FS 4000 – 40 µm coating

Three-coat structure, consisting of a surface-finished fine sheet, a coloured topcoat, and a transparent PET film as a top layer. Ideal for internal use in the food industry, where there are demanding requirements for formability, resistance

to mechanical loads, and special chemical influences. Does not contain halogens or PVC. Suitable for foodstuff use. Can be used between –40 °C and +50 °C.

### FS 5000 – GFK application

Optionally available in structured (PET film) or smooth (Gelcoat) finish. The 2.0 mm thick FS 5000 GRP panel (glass reinforced plastic panel) with additional PET film or Gelcoat surface finish provides first-class corrosion behaviour in an aggressive environment. Can be used between –2 °C and +30 °C.

### Foodstuff film (LMF)

150-µm thick, chemically inert diazo-polymer film coating for internal use in cold stores, foodstuff handling operations, and buildings with heightened hygienic requirements. Temperature-resistant between –20 °C and +80 °C.

### Stainless steel top layer

Stainless steel fulfils the most demanding quality requirements, both in terms of hygiene (easy to clean and non-sensitive to chemicals) and of resistance to corrosion and abrasion.

Note: Surface colour deviations and colour changes at the cut edge of the QuadCore® insulation core are to be expected because of weathering.

During storage in the open air, a surface colour change or deviation occurs; this is caused by UV radiation. This has no negative effect at all on the quality of the insulation core, and is therefore not a cause for complaint.

# Technical information

## Insulation core

The ems-isolier® QuadCore EM is equipped with the QuadCore® 1 high-performance insulation core.

The insulation core is harmless in terms of health, has zero ozone depletion potential, and is free of CFCs/HCFs.

## Delivered lengths

The standard delivered length is between 2.00 m and 20.00 m. The maximum manufactured length is up to 20.00 m.

Other lengths are possible on request.

## Tolerances

The tolerances of ems-isolier® QuadCore EM fulfil the requirements of the European Sandwich standard EN 14509:2013.

## Technical determination

ems-isolier® QuadCore EM fulfils the requirements of the European Sandwich standard EN 14509:2013 Self-supporting double skin metal faced insulating panels. Factory made products. Specifications.

## Fire protection

ems-isolier® QuadCore EM was tested for fire behaviour and fire resistance as per the national and European technical provisions and standards.

### Fire behaviour:

The product is classified as having fire behaviour B-s2,d0 as per EN 13501-1.

The insulation cores do not contribute to the spread of fire, and are self-extinguishing.

### Fire resistance:

Depends on element thickness and cover layer thickness.

You will find the current fire resistance classes on the Internet at: <http://www.ems-bau.com/downloads/>

## Environmental compatibility

Sandwich elements with a QuadCore® insulation core react chemically neutrally and provide no growth medium whatsoever for mould and rot.

Manufacture in Oldenburg uses 100% renewable energy.

Kingspan ems brand sales in Oldenburg in Holstein, Germany, are certified to BES 6001 for social, financial, and ecological aspects of conscientious company management.

## Material and quality

Cover layers: Quality flat sheet metal with metallic corrosion protection coating, steel quality S280GD – various surface finishes on request.

Kingspan ems brand sales panels are manufactured from high-quality primary materials subject to permanent quality control in state-of-the art production facilities. They fulfil the requirements of ISO 9001:2015 and of EN ISO 14001:2015.

## Guarantee

Kingspan ems brand sales provide a guarantee of up to 40 years on the thermal performance and a project-related guarantee on the organic coating of the external steel top layer, depending on the actual application.

## Packaging and transport

Standard packaging to works specifications, special packaging on request.

Insulation core thickness [mm]	Number of elements per package
40	27
60	18
80	13
100	11
120	9
140	7
150	7
170	6
200	5
220	5

## Delivery

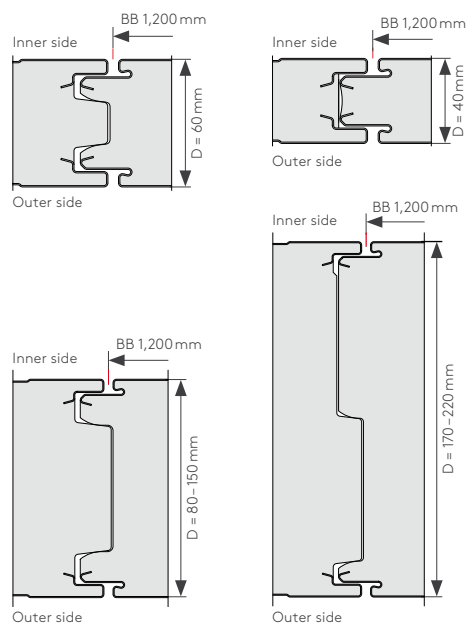
Delivery of elements is made by truck directly to the construction site, unless agreed otherwise. The client or layer is responsible for the unloading; it must be ensured on site.

## Installation

When laying the elements, the "Guideline for the planning and implementation of roof, wall & ceiling constructions made from profiled metal panels" of the IFBS must be complied with.

# Technical information

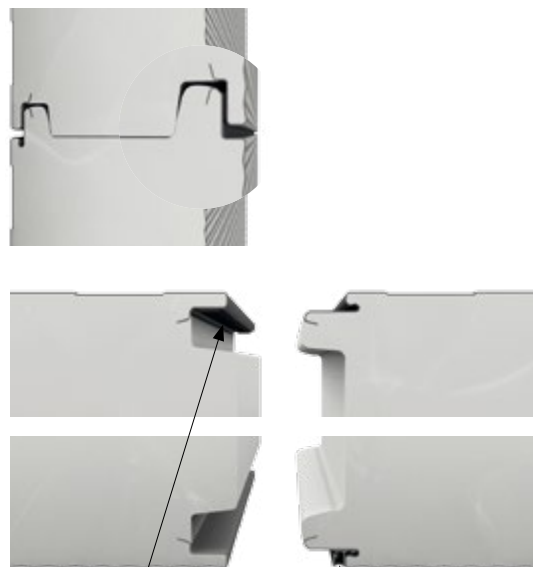
The labyrinth joint specially developed for use in temperature-controlled buildings insulates reliably down to  $-40^{\circ}\text{C}$ .



With element thicknesses between 40 and 220 mm, our elements seal securely without the need for further measures.

## Horizontal joint (optional)

The inclination of the groove wall prevents the penetration of rainwater when the elements are laid horizontally.



ems-isolier® ELAST:  
optionally applied  
during manufacture

ems-isolier® HKP  
optional



# Profiles and colours

## Profiles

Cover layer profile	Outer layer	Inner layer	
<b>L (ruled)</b> 	✓	✓	
<b>H (ruled)</b> 	✓	✓	
<b>D (deep profiles)</b> 		✓	
<b>V (V-profiled)</b> 	✓		
<b>E (flat)</b> 	✓	✓	
<b>G (ruled)</b> 	✓	✓	

Nominal dimensions in mm, tolerances as per works specification

## Standard colours

Steel		1,270 × 0.50 mm	1,270 × 0.60 mm
<b>Stainless steel, mill finish</b>	V2A 1.4301	✓	
<b>PEI (DU)</b>	9002	✓	✓
<b>PES (SP)</b>	9001	✓	✓
	9002	✓	✓
	9006		✓
	9010	✓	✓
<b>LMF</b>	9001		✓
	9003		✓
	9010		✓
<b>FS 4000</b>	9002		✓
	9010		✓

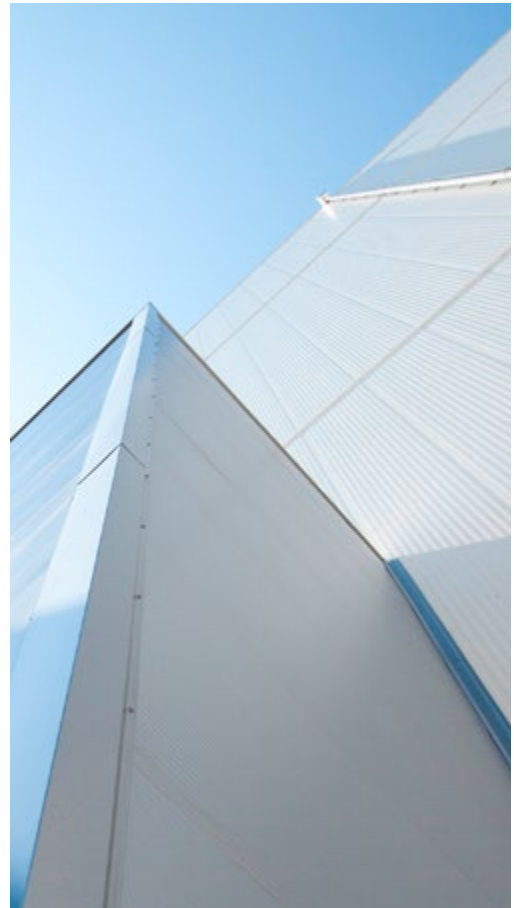
Further colours upon request.

# System accessories

To match ems-isolier® QuadCore EM, we offer you a comprehensive range of accessory solutions. These include:

- Standard moulded parts or special solutions up to 6 m in length and 1.5 mm thick
- Insulated sandwich corners
- ems-isolier® hollow chamber profile for hygienic, visual joint finish
- optional additional ems-isolier® ELAST sealing tape
- Fasteners and rivets
- Ceiling suspensions
- LED lighting
- Impact protection systems for safeguarding people and goods

For further information, please get in touch with your contact partner in the field service team.



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# Contact

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## Sales and customer service

### ems brand sales

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[www.ems-bau.com](http://www.ems-bau.com)

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## Production facilities

### ems brand sales

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F: +49 (0) 4361 5112-11

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[www.ems-bau.com](http://www.ems-bau.com)

The individual specifications in this datasheet are assured properties only if they are expressly confirmed in writing in each case

Subject to technical changes.  
Kingspan GmbH – ems brand sales

