


# *ems-isolier*<sup>®</sup> POLAR

*0.018 W/mK: the new benchmark in coldstore construction*



The performance of cold store buildings depends, among other factors, on the thermal technology used and its air-tight performance. Whether Plus-cooling, freezing, or shock-cooling – for decades the specially developed ems insulation panels have fulfilled the most demanding requirements for efficient coldstore insulation.

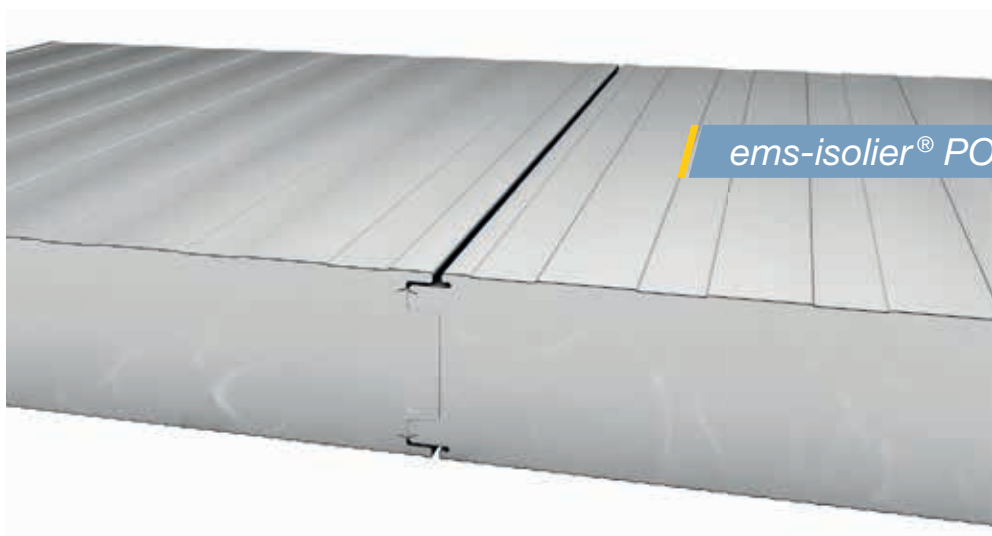
Following successful research work, we have succeeded in extending our highly efficient product range with the new ems-isolier® POLAR.

*// Introducing new ems-isolier® POLAR*

Our newest coldstore panel fulfils all the requirements for high quality panelling. In ems-isolier® POLAR, we've designed a solution that meets all the latest requirements for temperature-controlled construction. ems-isolier® POLAR provides reliable insulation down to ultra-low temperatures of -40 °C.

*// New Features:*

- *Optimised impermeability thanks to improved joint design*
- *New high-performance insulating core with QuadCore™ technology*
- *Certified fire protection - fire resistance up to EI60*
- *Specially developed coating system for the hygiene and foodstuffs industries*



*ems-isolier® POLAR*



## // Perfection in joint design

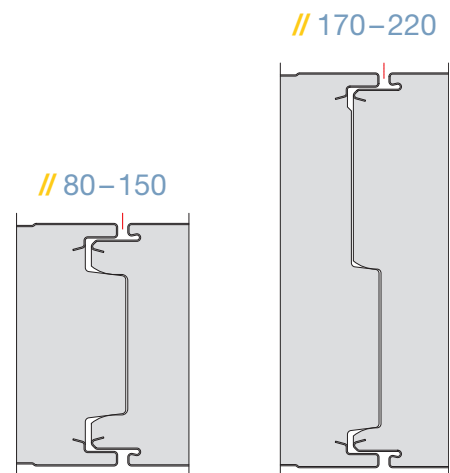
The joints of our coldstore panels have a key role in keeping the costly cold where it should be: in the coldstore or deep-freeze store.

Geared toward these special requirements, we have invested years of research in perfecting our joint design. Through the optimised accuracy in fit, the new system offers an outstanding air-tightness and reduces the thermal bridging even at high air pressures.

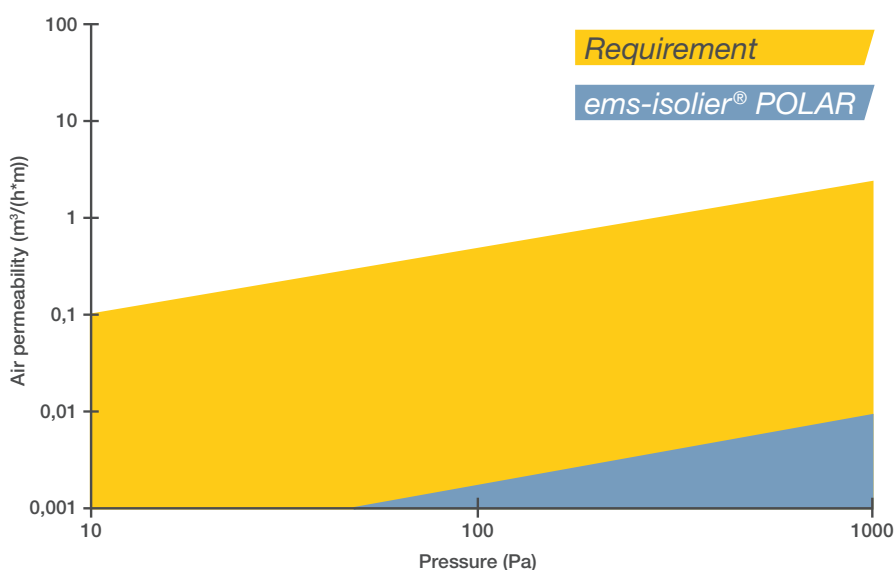
- Optimised joint design and accuracy in fit
- Improved joint stability
- Outstanding air-tightness and no loss of coldness

This is how ems-isolier® POLAR ensures a consistent cooling temperature with perfect coldstore insulation. With element thicknesses between 80 and 220mm, our elements seal securely without requiring further measures.

Official industry tests show just how impressive the improvements in our new product are. In the diagram below, the yellow area shows the requirement and the blue area shows the performance of our joint. It can be seen that even under a significant pressure, our new ems-isolier® POLAR remains super airtight.



Special joint design for different panel thicknesses



Comparison of standard joint and our new POLAR joint design



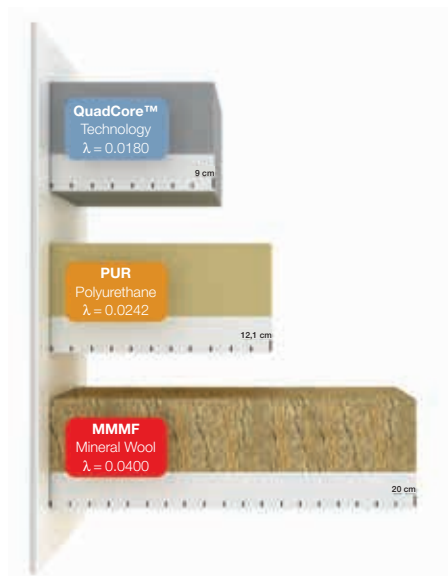
## // New insulated panel with QuadCore™ Technology

Our completely redesigned insulated panel with QuadCore™ Technology delivers the best thermal, fire and ecological performance of any closed-cell material. In combination with the unique microcell structure of our panels, QuadCore™ reduces operating costs and enhances environmental performance. We've also made our new QuadCore™ Technology easily identifiable by making it grey in colour to distinguish it from other cores.

### // Your cold store building may need to achieve a specific U value rating

The diagram to the right shows how much core insulation you would need inside your insulated panel to achieve a U-value of 0.20W/m²K. With a QuadCore™ core, a significantly thinner panel is achieved.

It therefore ensures that your building not only meets important industry standards, but exceeds them easily. Lay the foundation now for a high-performance coldstore.



*Insulation thickness needed to achieve a U-value of 0.20 W/m²K*

POWERED BY  
**QuadCore**  
 TECHNOLOGY

#### ems QuadCore™

Sandwich panel thickness tn:  
 external 0.60mm/internal 0.50mm

Element thickness d (mm)	Thermal resistance R-m²K/W	Heat transfer coefficient U-W/m²k
80	4.35	0.23
100	5.45	0.18
120	6.60	0.15
140	7.70	0.13
150	8.25	0.12
170	9.35	0.11
200	11.05	0.09
220	12.15	0.08

*as per EN 14509 with effect of joint*

#### ems IPN3

Sandwich panel thickness tn:  
 external 0.60mm/internal 0.50mm

Thermal resistance R-m²K/W	Heat transfer coefficient U-W/m²k
3.75	0.26
4.70	0.21
5.65	0.18
6.60	0.15
7.05	0.14
8.00	0.12
9.45	0.11
10.40	0.10

*as per EN 14509 with effect of joint*





## // Guarantee and safety



### // Guaranteed Thermal Performance

A consistently high insulation performance is of immense importance throughout the entire lifetime of your coldstore, because foodstuffs must be constantly stored at the correct temperature.

As the first provider in the industry, we provide a guarantee over 40 years for the thermal efficiency of our panels. You therefore need to fear no loss of efficiency throughout the entire working life of your coldstore. The costs for maintenance and repair work on the building insulation reduce to a minimum.



### // Certified Fire Safety

We always place top priority on the protection and safety of the building and employees. That is why we emphasise outstanding fire protection and compliance with the highest standards for our new *ems-isolier*® POLAR as well.

- Reaction to fire complies with B-s2,d0 ( $\geq 100$  mm) as per DIN EN 13501-1
- Fire resistance classes up to EI 60 as per DIN EN 13501-2
- Optimum behaviour in the event of a fire in terms of smoke development, temperature and fire penetration

Additionally, the panel is certified by the American industrial property insurance company, FM Global, and this is of particular significance for food-processing companies.

- Classification as per FM 4880 and FM 4481



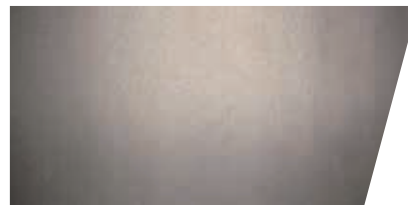
## // Coatings and finishes specifically made for coldstore applications

We know: all businesses have different needs – which is why we develop coatings and finishes for a range of uses.

For example, in the food processing industry compliance with hygiene regulation takes top priority. In this case, selection of the correct cleaning agent which does not attack the surface coating is often problematic, and most manufacturers remain very general in their recommendations. We support you in making the choice, and together with our partner FINKtec we have tested cleaners and can therefore recommend you the correct cleaning agent for each coating system. Below is a selection from our range of coatings and finishes:

### // **Stainless Steel 1.4301**

Stainless steel meets the highest quality demands in terms of hygiene (simple to clean and high resistance to chemicals), corrosion prevention and abrasion resistance.



### // **FS 5000**

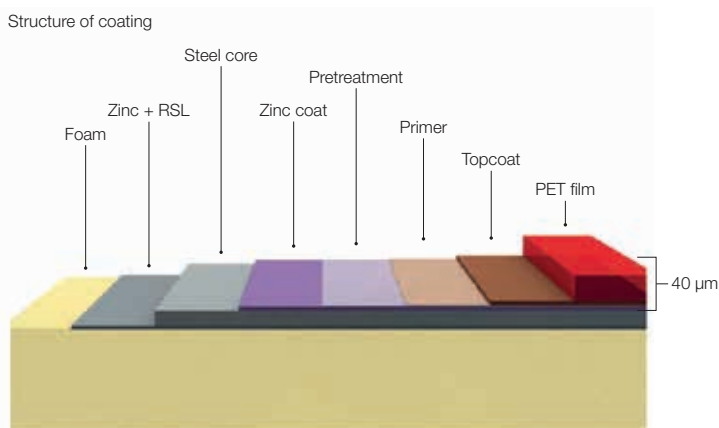
Looks great due a structured and smooth finish on the visible side and offers an excellent corrosion behaviour in aggressive environments. This ensures highly effective and efficient surface protection against bacteria, germs and chemicals.



GRP-application FS5000 in „structured“

### // **FS 4000–40 µm coating**

Ideal for internal use in the food industry where there is high demand for formability and resistance to mechanical load and impact of specific chemicals.



### // **FS 3000–25 µm coating**

Special coating developed expressly for the hygiene requirements of the food processing industry.

**Safety and high performance:  
perfect for use in coldstores. Convince yourself now of our new  
ems-isolier® POLAR.**



## // Contact

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*ems-isolier<sup>®</sup>*  
**POLAR**