COLD STORE CONSTRUCTION



KEEP COOL!

ISOLIERPANEELE

From cold storage to energy efficiency



Picture:
Cold storage in Groning (Germany)

Save valuable energy right from the planning phase for cold and deep-freeze stores. Rely on our ems-isolier® cold store panel EM insulation for cold stores; their insulation capacity has been proven in many applications. Generating and maintaining cold is five to eight times more expensive than generating and maintaining heat. So, once generated, it makes sense to keep such costly cold where it should be: in the cold store or deep-freeze store.

Stay on the safe side with ems-isolier® cold store panel EM. With thicknesses of between 40 and 220 mm, our elements seal both cold and deep-freeze stores safely and without the need for additional measures.

Safety is also of the essence for ems-isolier® cold store panel EM. Elements with a PIR core achieve a classification of up to B-s1, d0 for their behaviour in fire, fire resistance classes of EI 60 in accordance with DIN EN 13501-1 and a tested fire resistance class of E 90.

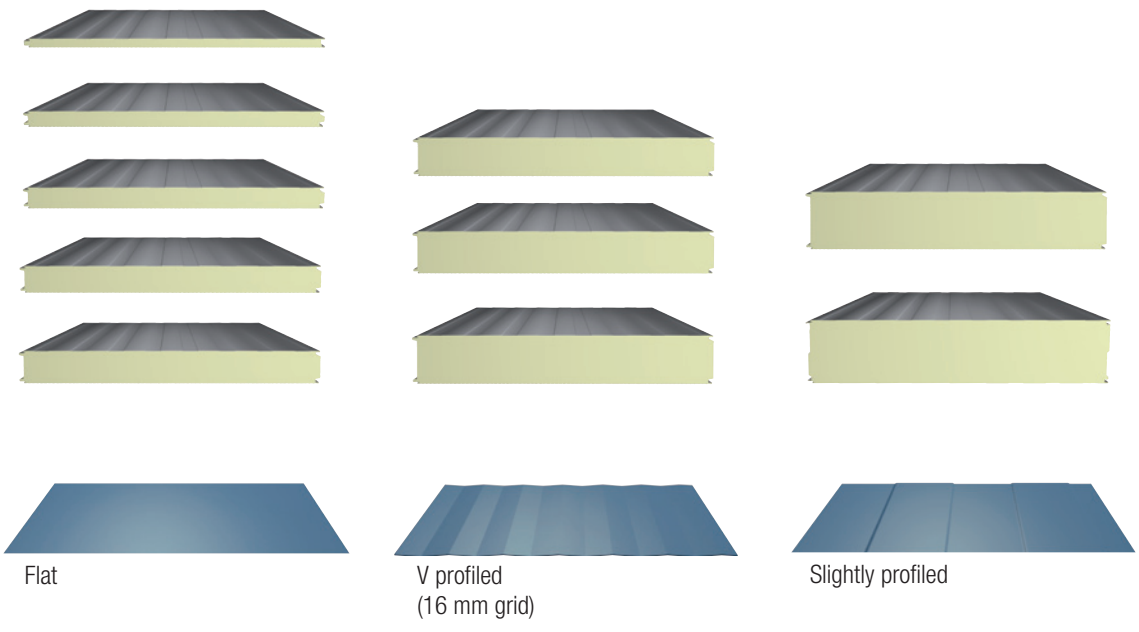
Our insulation panels also meet your aesthetic requirements. The EMD version has a V-profiled surface. One step ahead in the construction of high-quality cold and deep-freeze storages.

What you get at a glance

- Element thicknesses of between 40 and 220 mm
- Cover widths of 1120 mm and 1176 mm – other cover widths on request
- Element lengths of up to 20 m
- Double tongue-and-groove joints from an element thickness of 60 mm
- Constructive labyrinth seal from an element thickness of 60 mm
- ems-isolier® snap-in joint for various element thicknesses
- Heat transition coefficients (U values) of between 0.58 and 0.11 W/m²K
- Optional food safe surface coating FS 3000®
- General approval Z-10.4-428 issued by the German building inspectorate
- Classification of the behaviour in fire up to B-s1, d0 in accordance with DIN EN 13501-1
- Also available in stainless steel
- Optionally available with anti-fingerprint coating
- ems-isolier® hollow chamber profile for a hygienic and neat joint closure



Picture:
Example of usage of an ems-isolier® cold store panel



Picture on the left side:
1. Various thicknesses of sandwich elements
2. Profiling of the outer cover sheet

Flat

V profiled
(16 mm grid)

Slightly profiled

ems-isolier® cold store panel EM

Keep cool



Picture:
Example of usage of an ems-isolier® cold store panel

Picture on the right:
Joint geometry

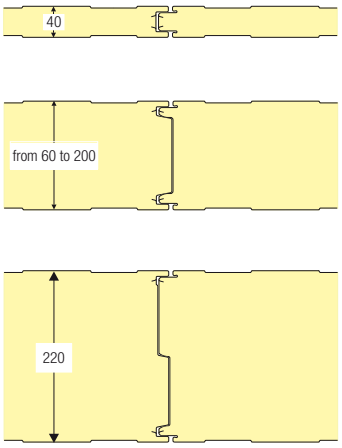
Picture below:
Joint detail

Whether for positive temperatures, freezing or shock freezing chambers, ems-isolier® cold store panels have been a standard in cold store construction over decades, consistently complying with customers' requirements. Ten different element thicknesses ranging from 40 to 220 mm are available.

The specific joint geometry designed for cold stores (from EM 60) creates a tight labyrinth seal, ensuring that the joints are sealed with the required tightness even at the lowest temperatures with no need for additional sealing components.

To achieve vapour diffusion tightness, you may add ems-isolier® ELAST sealing compound. Which is particularly suited for ultra-low refrigeration, clean room, and CA/ULO storage applications.

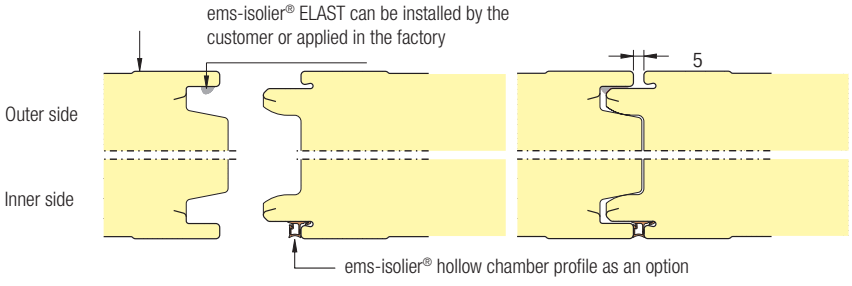
The ems-isolier® hollow chamber profile rounds off the homogenous effect of the inner surfaces. Used as an optical joint closure, it also meets hygiene requirements, as it prevents the penetration of dirt.



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B-s1, d0
in accordance with DIN EN 13501-1

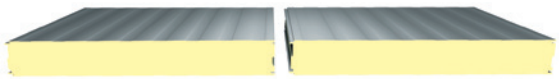
FM APPROVED



ems-isolier®

snap-in joint

With ems-isolier® snap-in joints, fitting ems-isolier® cold store panels is a piece of cake.



Picture on the left:
ems-isolier®
cold store panel EM

Picture on the right:
Details of the
Snap-in joint

Positive-locking joint

Due to the snap effect the correct stop position of the ems-isolier® panels at the longitudinal joint of the elements is clearly defined. Snapping the elements into the joint ensures tightness of the joint.

Accuracy of fit

The accuracy of fit of the elements is ensured during production by the use of particular profiles for the joint, which considerably eases installation.

Adjustable snap-in effect

The extent of the snap-in effect is defined by the length of the elements.

Retaining effect

Depending on the length of the element, the snap-in effect creates a self-contained construction without the need for an additional substructure, which is ideal for the construction of large-area cells or rooms. The retaining effect of the snap-in joint is unique in the world and protected by patent.

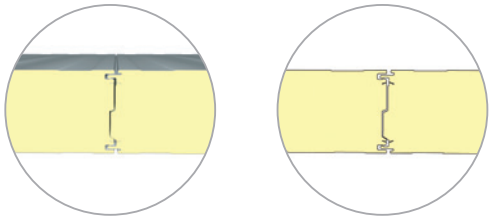
Improved joint stability

The new toffers enhanced stability and gives the joint a more homogeneous visual appearance.

Behaviour of the snap-in joint in fire

To ascertain the behaviour in fire B-s1, d0, please contact our sales staff.

Please note:



Presently, the snap-in joint is only available with an element thickness of 150 mm.

Designation of building part	Type	Element thickness	Thickness of cover sheets		Max. length supplied	Weight	Thermal resistance	Heat transfer coefficient	Thermal resistance	Heat transfer coefficient
			Outer	Inner			values as per EN ISO 6946		values as per EN 13165 and EN 14509	
		d mm	t_N mm	t_N mm	m	g* kg/m²	R m²K/W	U m²K/W	R m²K/W	U m²K/W
ems-isolier® cold store panel PU	PU	40	0.60	0.50	20.0**	10.8	1.62	0.56	1.60	0.58
		60				11.6	2.45	0.38	2.45	0.39
		80				12.4	3.29	0.29	3.25	0.29
		100				13.2	4.12	0.23	4.10	0.24
		120				14.0	4.95	0.20	4.95	0.20
		140				14.8	5.79	0.17	5.75	0.17
		150				15.2	6.20	0.16	6.20	0.16
		170				16.0	7.04	0.14	7.00	0.14
		200				16.8	8.29	0.12	8.25	0.12
		220				17.6	9.12	0.11	9.10	0.11

Please note basis of calculation: *related to cover width 1176 mm **Production site Oldenburg 20 m

Profiling of cover sheets	Slightly profiled (L)	Microprofiled (M)	V profiled (V)	Flat (E)
Outer sheet	■		■	●
Inner sheet	■			●

■ available ● on request

B-s1, d0
in accordance with DIN EN 13501-1

Various hygienic insulations

For each application the right panel



Picture:
Example of usage of an ems-isolier® cold store panel

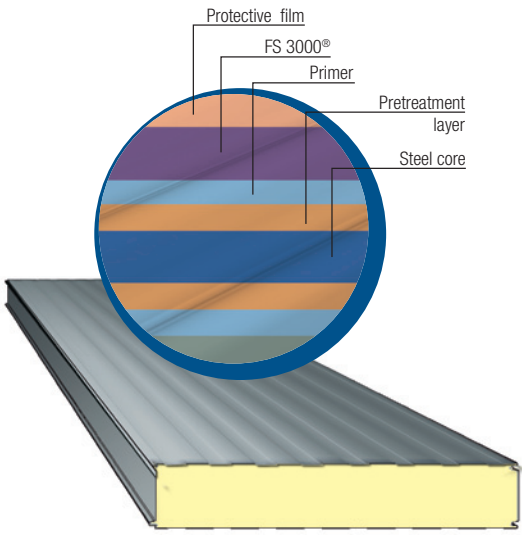
Cooling and freezing are prescribed storage technologies, especially in the food processing industry. With ten different panel thicknesses of between 40 and 220 mm to choose from, the ems-isolier® panel provides reliable insulation down to ultra-low temperatures of -40°C.

It goes without saying that in particular in the food-processing industry, the greatest emphasis is placed on the hygiene properties of the elements used. It was especially for this industry that we developed the FS 3000® special coating, which has been certified as innocuous by independent institutes.

This certification simplifies the introduction of HACCP concepts in plants.

Another important contribution to innocuity is the ems-isolier® hollow chamber profile. Its intelligent material combination keeps it to the base and safely in the element's groove. The soft flanks fit snugly with the edges of the element. This greatly reduces the penetration of dirt into the element joint. The hollow section profile is easy to clean and requires low maintenance.

Picture on the right:
Coating sturcture



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B-s1, d0
in accordance with DIN EN 13501-1

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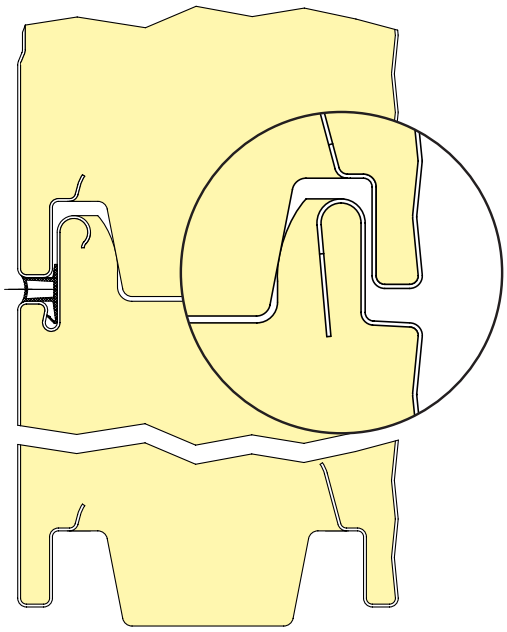
Horizontally installed

Attractive and safe

Horizontally installed ems-isolier® cold store panels for cold and deep-freeze stores are visually pleasing and of high-value design. We have re-designed the joint geometry for horizontal installation, as an asymmetrical element joint offers a range of benefits.

On the outside, the inclination of the groove flank prevents water from penetrating. Even in the case of driving rain, the water can run off in a controlled manner without getting into the joint. This prevents the joints from freezing. The opposite side of the joint has a groove for accommodating the well-proven ems-isolier® hollow chamber profile. Thus, a visually homogenous wall surface is created inside the cold or deep-freeze store and hygienic conditions are ensured.

By using ems-Elast in the outer joint, additional protection against driving rain is achieved.



Picture on the left:
Detailed view of an element joint

Picture below:
Example of usage of an ems-isolier® cold store panel



Protection and safety

Based on B-s1, d0



Picture above:
FIREtec-logo

Picture on the right:
1. LPC-test
2. UBC-test

The ems-isolier® cold store panel with its PIR insulating core was the first building component with a polyurethane-rigid foam insulating core to have achieved classification up to B-s1, d0 and fire resistance classes up to AI 60 in accordance with DIN EN 13501-2, as well as a tested fire resistance class of E90.

ems-isolier® FIREtec® systems with a PIR insulating core do not contribute to the formation of fire and impede its spread. They are self-extinguishing and are characterized by minimum smoke development. Thus, they offer extensive fire protection as well as maximum insulation capacity, and they contribute to a reduction of insurance premiums.





B-s1, d0
in accordance with
DIN EN 13501-1

Signed and sealed

Certified and approved

The building products of Hoesch Bausysteme GmbH meet the applicable European directives.

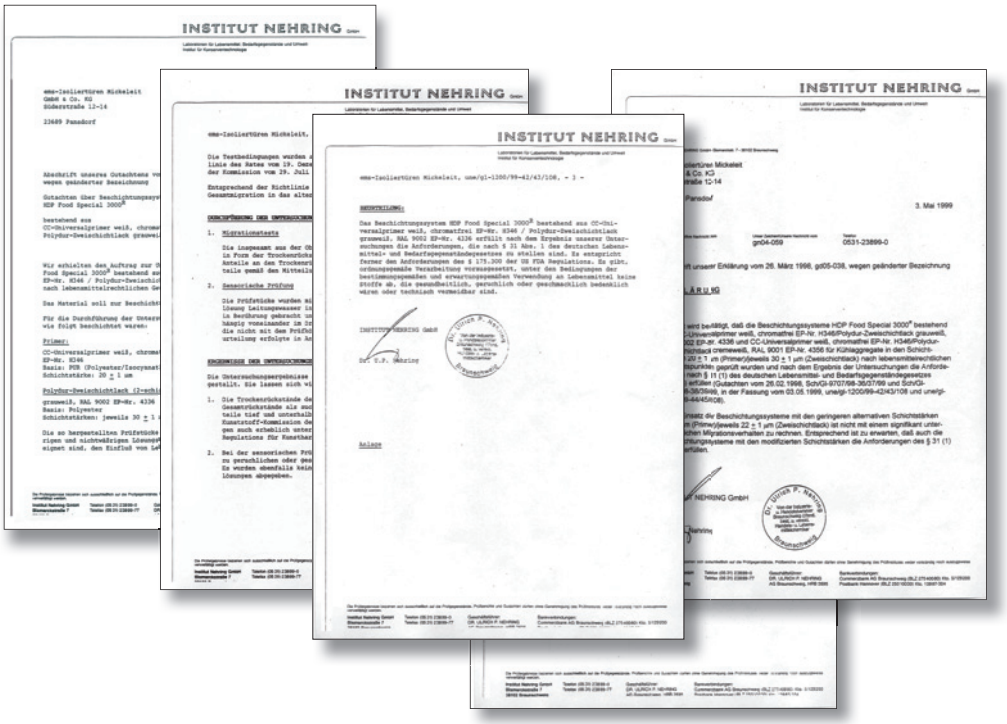
EPAQuality defines Europe-wide quality standards and thus ensures the quality of building products.

Complete building envelope guarantee

Other certificates, test certificates and approvals which demonstrate our quality assurance as well as information on the structural suitability of our high-quality products can be downloaded from the internet.

See for yourself our service quality and ability to innovate.

Picture above:
Seals of quality



Pictures on the left:
Certificates

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Installation and accessories

Thought out from A to Z



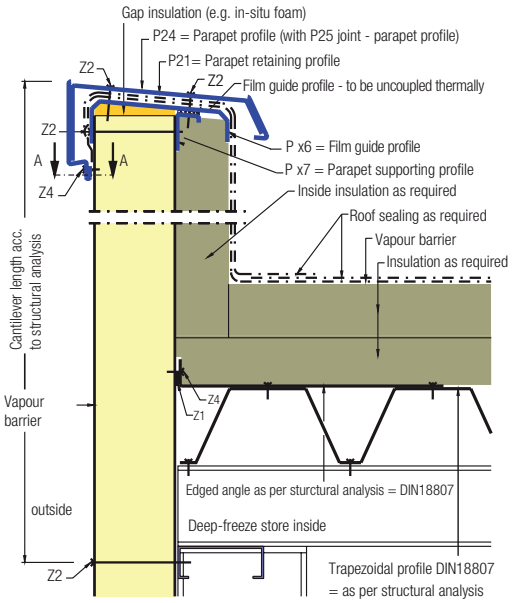
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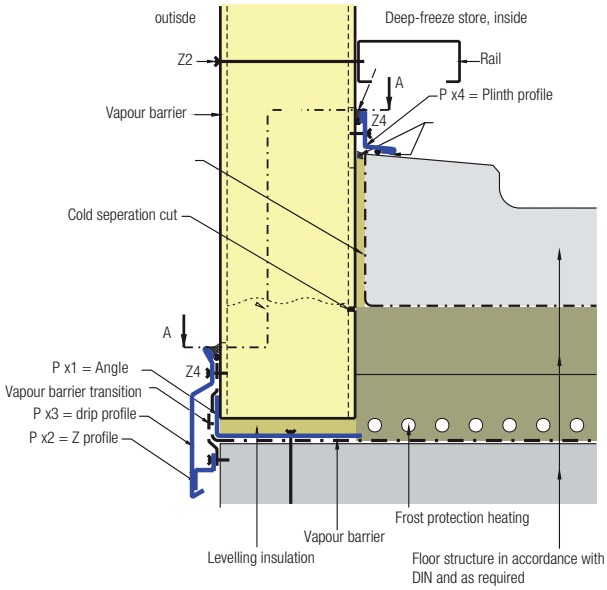
Picture on the right:
Construction details

When building cold and deep-freeze stores, the optimal design of details in terms of building physics such as building corners, cross joints or wall and roof connections are of great importance, as these are the points where valuable cold energy can be lost.

We offer a number of valuable state-of-the-art design and connection details, which have been developed by our customers, together with our engineers.

A service which helps to facilitate things.





Installation and accessories

Thought out from A to Z



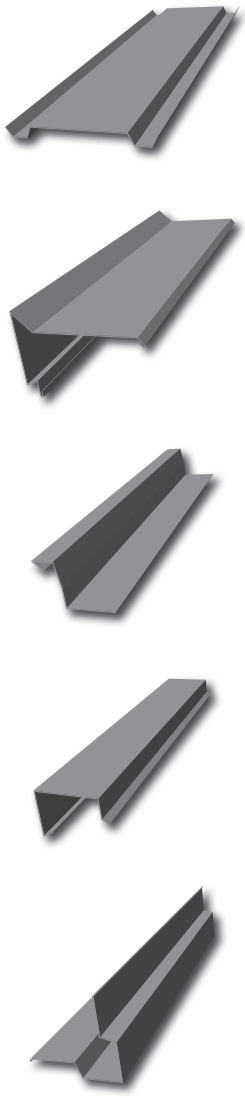
Picture on the left:
Neue Messe
München

From accessoires to accent

The only perfect solution is holistic. Whether you are looking for standard flashings or special solutions – make use of our large range of products and possibilities. From flashings to works standard to individual accessories to meet your needs: you will set benchmarks in terms of architecture and design.

It is up to you: standard or special flashings up to 6 m in length and 3 mm thick, sandwich corners, fasteners, sealing tapes and other intelligent accessories – for a perfect solution.

Detailed information is available from our brochures: “Flashings and accessories”, “Folded parts” and “Sandwich, corner and parapet elements”.



Picture:
Folded parts

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GB · EMS · 10/2012