

ems-isolier® cold room panels PU

The classic for cold and
freezing room construction



A company
of ThyssenKrupp
Steel

ThyssenKrupp Bausysteme



ThyssenKrupp

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The right panel for all purposes



Laying direction

Due to its special joint geometry you can install ems® panels vertically as well as horizontally without losing its insulation quality.

Reliable insulation and certified hygiene

In the food industry cooling and deepfreezing are the most essential storage technics. The ems® cold room panels PU fulfill all requirements being demanded in this business because of its high insulating characteristics and special joint geometry. ems® cold room panels PU are available in 10 different thicknesses between 40 and 220mm with a reliable insulation up to -40°C and even colder.

ems® cold room panels PU also have remarkable hygienic features in respect of food-processing, -storing and -distribution. To meet these high demands we developed a special coating system FS3000® being officially approved as physiologically safe and being available in 3 different colour shades.

Dimensions and geometry

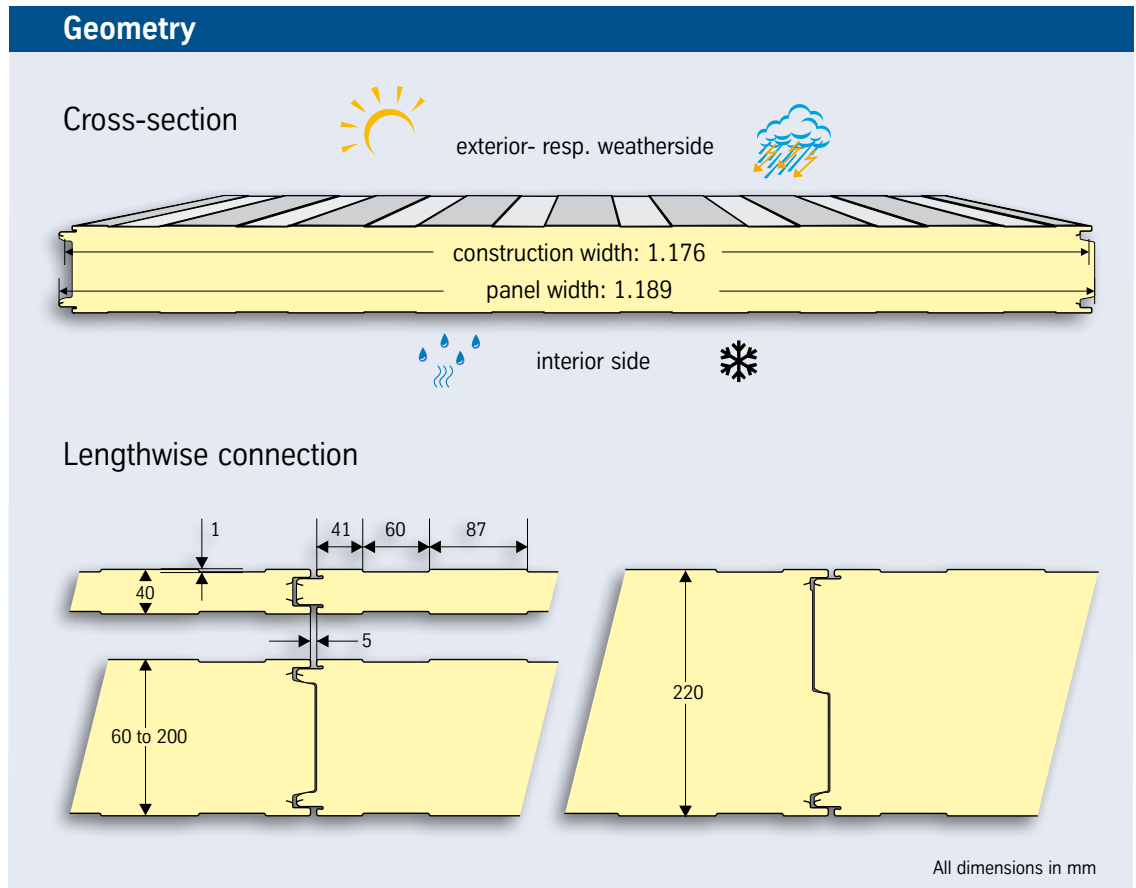
Essential for a correct planning

Length of panel

ems® panels are available in lengths of 2 - 20m. For exceptional circumstances we can even produce panels at a length of 24m on request combined with a surcharge.

Profiling of shells

The standard profiling for ems® panels is lined on both sides (LL). Optionally you can choose a falt surface shell assuming a minimum steel sheet thickness of 0,6mm.



The potential of a correct joint

No matter what applications you wish to plan with ems® cold room panels, you will always find the right panel for a certain purpose starting with cooling in positive temperatures or refrigerating, deep freezing or even shock frosting. On the following pages you will find the u-values for ems® panels assuming that the installation was done by experts.

The special know-how is concealed in the joint geometry of the ems® cold room panels. It is primarily developed for the use in the cooling and deep freezing business and is distinguished by a tight labyrinth sealing.

If mounted by experts it provides a sufficient tightness without needing additional sealing com-

ponents. Depending on the demands the joint can be easily sealed on the building site. Especially for CA- and ULO-storage this kind of finish is suitable and recommended.

We offer you an optional joint finish, called HKP, which can be integrated in the production process and substitutes the time consuming and expensive sealing procedure on the building site.

For extremely demanding applications for very low temperatures you can use ems®-elast which is a sealing agent, to be applicated during the production process or on the building site. It can also be used in connection with the HKP.

Inspected and certified values

For your safety

Technical data

	PU 40	PU 60	PU 80	PU 100	PU 120	PU 140	PU 150	PU 170	PU 200	PU 220
panel thickness mm	40	60	80	100	120	140	150	170	200	220
U-value (W/m ² K)	0,58	0,39	0,30	0,24	0,20	0,17	0,16	0,14	0,12	0,11
self-weight (kN/m ²)	0,108	0,116	0,124	0,132	0,140	0,148	0,151	0,159	0,171	0,179

Basis of calculation:

Surface exterior side 0,6mm lined, interior side 0,5mm lined (LL), WLG 025 acc. to DIN 4108

Surface:	hot dip galvanised steel belt for additional belt coating systems
Steel thickness:	exterior side 0,6mm; interior side 0,5mm (please contact us for other nominal thicknesses)
Fluting:	exterior side lined, profile depth approx. 1mm (flat surface with steel \geq 0,6mm on request) interior side lined, profile depth approx. 1mm (flat surface with steel \geq 0,6mm on request)
Coating:	exterior side PLADUR® SP 25µm, double-layer-stove-enamel finish in industrial colours with protective film interior side PLADUR® SP 25µm, double-layer-stove-enamel finish similar RAL 9002 without protective film For further coating-systems and colours please see on page 5.
Insulating core:	polyurethan hardfoam, blowing agent CFC- and HCFC-free
Sealing:	double tongue-and groove connection which forms a constructive labyrinth sealing (from PU 60 and thicker) without additional sealing components.
Options:	HKP (joint finish) to achieve a smooth joint surface (one or both sides) ems® Elast factory-made or applied on site for special applications (e.g. gas thightness).



Physical building characteristics

Thermal insulation:	thermal conductivity acc. to DIN 4108: $\lambda R=0,025W/mk$
Fire protection:	building material class B1 - low inflammability - acc. to DIN 4102-1
Sound protection:	evaluated sound insulation coefficient for all panel thicknesses $R'_w \geq 26$ dB
Impermeability:	joint permeability coefficient $a \leq 0,1 \text{ m}^3 / (\text{hm} (10 \text{ Pa})^{2/3}$ acc. to DIN EN 42
Statics:	drivin rain tightness acc. to DIN EN 86 span list on request



Approval and quality assurance

General building approval: Z-10.4-254 of DIBt, Berlin. Several approvals from foreign bodies. Quality standards correspond with the determinations of the building approval (DIBt) and the quality and testing regulations RAL GZ-617 (GBS).

The approved production is guaranteed by our own factory production controls and additional external quality control by the Research Centre for Steel, Wood and Stones of the Technical University of Karlsruhe (Germany).



European harmonization

In connection with the introduction of the EN 14509 ThyssenKrupp Bausysteme GmbH is a member of the EPAQ, European Quality Assurance Association for Panels and Profiles.

In cooperation with independent institutes the quality criterions here are guaranteed for the improved customer protection.

Now it becomes coloured

For each taste the correct colour

Colours and coatings

- Different coating systems show a different appearance despite equal RAL-shades.
- Deviations between the printed and the original colours may occur for printing reasons.
- For technical reasons deviations between the original colours and RAL are inevitable.
- Only ems original colour samples are significant for the surface effect and the reflection degree.
- There may occur a non-uniform colour impression for 15µm coatings as well as for all coating systems similar to RAL 9006 and RAL 9010 for reasons of technical processing .

steel thickness (mm)		0,6							0,5		
		exterior or interior side									
use on		PLADUR® DU***	PLADUR® SP	FS3000®	PLADUR® PVDF	Plastisol 100	Plastisol 200	LMF**	PLADUR® DU***	PLADUR® SP	FS3000®
coating system											
coating thickness (µm)		15	25	25	25	100	200	150	15	25	25
corrosion protection class as per DIN 55928		II	III	III	III	III	III	III	II	III	III
colour group											
oyster white	similar to RAL 1013	I	●								
light ivory	similar to RAL 1015	II	●							●	
traffic yellow	similar to RAL 1023	III	●							●	
flame red	similar to RAL 3000	III	●							●	
oxide red	similar to RAL 3009	III	●							●	
gentian blue	similar to RAL 5010	III	●							●	
light blue	similar to RAL 5012	II	●								
fir green	similar to RAL 6009	III	●							●	
reseda green	similar to RAL 6011	II	●							●	
anthracite grey	similar to RAL 7016	III	●							●	
umbra grey	similar to RAL 7022	III	●								
light grey	similar to RAL 7035	II	●							●	
copper brown	similar to RAL 8004	III	●							●	
nut brown	similar to RAL 8011	III	●							●	
cream	similar to RAL 9001	I	●	●		●		●	●	●	●
grey white	similar to RAL 9002	I	●	●	●	●	●	●	●	●	●
signal white	similar to RAL 9003	I						●			
white aluminium	similar to RAL 9006	II	●		●					●	
grey aluminium	similar to RAL 9007	II	●							●	
pure white	similar to RAL 9010	I	●	●			●		●	●	●

*FS3000® = physiologically unobjectionable, approved by the independent Institut Nehring, Braunschweig

**LMF = laminated film, physiologically unobjectionable; suitable only for interior surfaces

***PLADUR® DU = Single-layer stove-enamel finish, suitable only for interior surfaces

Please inquire for steel and coating systems, not shown above, as well as for stainless steel.

● = delivery from stock

● = delivery time approx. 6-8 weeks

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