

FRP insulating elements

TECHNICAL DATASHEET

Product description – area of application

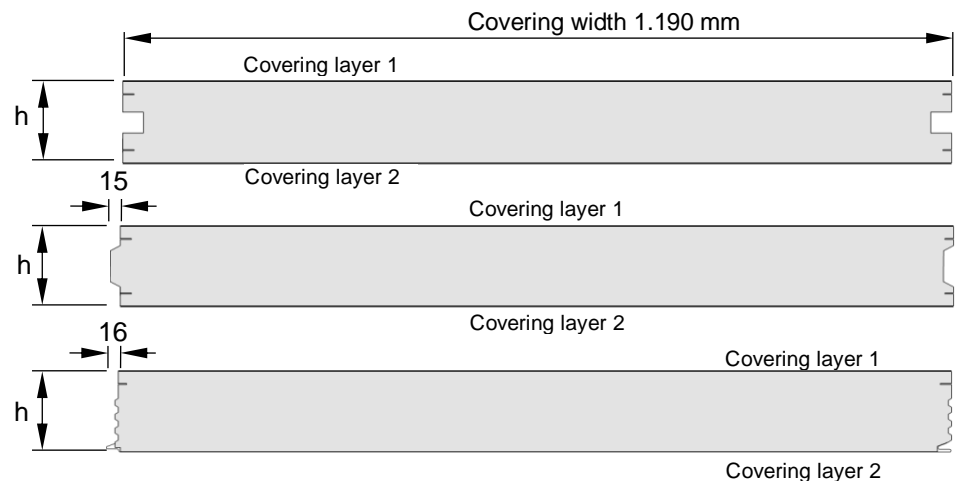
The product family **FRP insulation elements** is a light wall and ceiling system for the spatial interior construction where high hygienic requirements are placed on the building component surfaces, e.g. in the food processing industry, cooling rooms etc.

- self-supporting sandwich panels consisting of an insulating core with top and bottom cover layers
- non-corrosive FRP cover layers, safe for contact with unpacked food, resistant to aggressive chemicals⁽¹⁾, easy to clean
- high thermally insulating, continuous core insulation layer, joints without thermal bridges

Technical data

Dimensions:

Cross section of the element:



thickness range (depending on insulation core material)

with EPS	min. 20 mm to 300 mm
with PIR	min. 40 mm to 200 mm
with MW	min. 40 mm to 160 mm

Joint design:

depending on cover material

FRP:	plastic H-profile
Aluminium:	plastic H-profile
Galvanized steel:	plastic H-profile or Z-Lock (nut + spring, roll-formed)
Insulating core:	nut + loose spring, fixed V-spring or crown profile

Available lengths:

between 2.00 m and 12.00 m

short lengths < 2.00 m with extra charge, excessive lengths on request

¹ See the separate data sheet for resistance to usual chemicals.

Manufacturing tolerances: based on DIN EN 14509

Materials: Covering layer 1 (variants):

FRP, white (similar RAL 9016)

- 1.2 mm thick, flat with gelcoat surface sealing
- 1.5 mm thick, flat with gelcoat surface sealing and fabric insert
- 2.0 mm thick, flat with gelcoat surface sealing and fleece insert
- 2.0 mm thick, structured with foil sealing

Covering layer 2 (variants):

- FRP in accordance with covering layer_1
- Galvanized steel sheet (Z275), thickness 0.5/0.6 mm, primed or colour-coated (standard: polyester 25 µm, RAL 9002), surface lined or flat
- Aluminium foil 0.08 mm thick, coarse grain embossed, white

Insulating core (variants):

All core insulation materials are HBCD and CFC / HCFC-free!

- EPS according to DIN EN 13163
- PIR according to DIN EN 13165
- mineral wool according to DIN EN 13162, non-flammable (A1), with a special fibre structure oriented perpendicular to the surface

Structural behaviour: object-related predimensioning as required

Fire behaviour: composite panel normally flammable, class E (DIN EN 13501-1), equivalent to B2 (DIN 4102)

Thermal insulation properties: In dependence of the insulating core used, the following values have to be used as design value of the thermal conductivity λ_B according to DIN 4108-4 when thermal protection is calculated. (Thickness-dependent heat transfer coefficients U see Table 1)

- EPS $\lambda_B=0,035 \text{ W/(m}^*\text{K)}$ or $\lambda_B=0,040 \text{ W/(m}^*\text{K)}$
 PIR $\lambda_B=0,026 \text{ W/(m}^*\text{K)}$ for element thickness >120 mm
 $\lambda_B=0,027 \text{ W/(m}^*\text{K)}$ for element thickness 80 - 120 mm
 $\lambda_B=0,029 \text{ W/(m}^*\text{K)}$ for element thickness < 80 mm
 MW $\lambda_B=0,048 \text{ W/(m}^*\text{K)}$

Table 1

Panel thickness [mm]	U [W/(m²*K)]			
	EPS 100	EPS 150	PIR 026/027/029	MW 048
20	2.000	1.750	—	—
40	1.000	0.875	0,725	1,200
60	0.667	0.583	0,483	0,800
80	0.500	0.438	0,338	0,600
100	0.400	0.350	0,270	0,480
120	0.333	0.292	0,225	0,400
140	0.286	0.250	0,186	0,343
160	0.250	0.219	0,163	0,300
180	0.222	0.194	0,144	—
200	0.200	0.175	0,130	—
220	0.182	0.159	—	—
240	0.167	0.146	—	—
260	0.154	0.137	—	—
280	0.143	0.125	—	—
300	0.133	0.117	—	—