

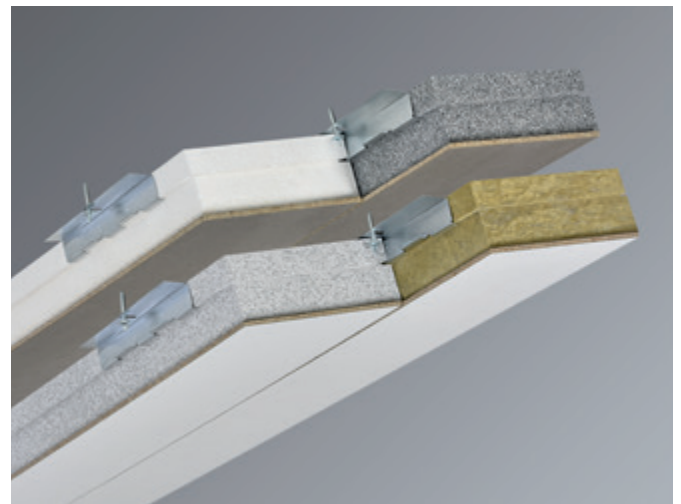
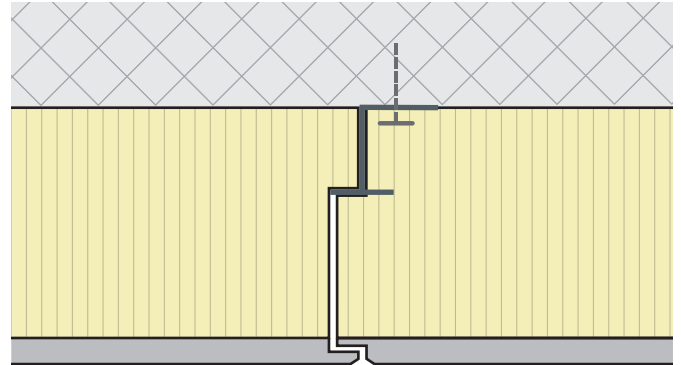
## Type DS, DL, DP and DM insulation panels

### Application

The Frinorm type DS, DL, DP and DM insulation panels are suited for retrospective installation on ceilings and walls in underground car parks, garages and basements in new and converted buildings as well as in old-building renovation. It is suited for single and multi-family houses as well as for commercial, industrial, agricultural and public buildings.

### Properties

- Outstanding thermal insulation values of up to 0.17 W/m<sup>2</sup>K
- Type DM is approved by the VKF and achieves fire index 6q.3 (VKF fire protection application no. 14361)
- Four types of thermal insulation: with expanded rigid polystyrene foam (EPS), 15 kg/m<sup>3</sup>, expanded rigid polystyrene foam with graphite additive (EPS lambda), 20 kg/m<sup>3</sup>, intensely expanded rigid polystyrene foam (EPS perimeter), 30 kg/m<sup>3</sup>, or rock wool, 160 kg/m<sup>3</sup>
- Element thicknesses of up to 180 mm can be produced
- Cement-bonded chipboard as cover panel, water-resistant, impact-resistant and non-combustible
- Rot-resistant, resistant to vermin and mould
- Dimensionally stable and non-warping
- No thermal bridges, perfect board joints
- Washable, can be cleaned with a high-pressure cleaner
- Appealing aesthetic bottom view
- Handy format, lightweight
- Uncomplicated and fast installation



### Product description

The Frinorm insulation panels have very good thermal insulation properties. They are available in four different designs: type DS is made of expanded rigid polystyrene foam (EPS), 15 kg/m<sup>3</sup>, type DL of expanded rigid polystyrene foam with graphite additive (EPS lambda), 20 kg/m<sup>3</sup>, type DP of intensely expanded rigid polystyrene foam (EPS perimeter), 30 kg/m<sup>3</sup>, while rock wool, 160 kg/m<sup>3</sup>, is used for type DM. The insulation panels are covered with a 10 mm thick cement-bonded chipboard, which is not only water- and impact-resistant, but also non-combustible. Insulation panel type DM is approved by the VKF and achieves fire index 6q.3 (VKF fire protection application no. 14361). Hidden attachment without visible screw connections is ensured with the Z mounting bracket that is suspended in the groove of the thermal insulation. The cement grey surface of the cement-bonded chipboard is available untreated or coated with white primer. It can be left untreated or coated with dispersion paint. The circumferential groove and tongue joint ensures protection from thermal bridges and optically perfect board joints. When mounted, the insulation panel has an aesthetic and appealing appearance as ceiling.

### Materials of type DS

Cover panel: cement-bonded chipboard, untreated or coated with white primer, 10 mm

Thermal insulation: expanded rigid polystyrene foam (EPS), 15 kg/m<sup>3</sup>, 40–170 mm

Bonding: water-resistant D3 (EN 204-D3)

Accessories: Z mounting brackets made of hot-galvanised sheet metal (2 pieces per panel) and wedge anchor DBZ 6/4.5 by Hilti (or similar product with ceiling and fire protection certificate)

### Materials of type DL

Cover panel: cement-bonded chipboard, untreated or coated with white primer, 10 mm

Thermal insulation: expanded rigid polystyrene foam with graphite additive (EPS lambda), 20 kg/m<sup>3</sup>, 40–170 mm

Bonding: water-resistant D3 (EN 204-D3)

Accessories: Z mounting brackets made of hot-galvanised sheet metal (2 pieces per panel) and wedge anchor DBZ 6/4.5 by Hilti (or similar product with ceiling and fire protection certificate)

### Materials of type DP

Cover panel: cement-bonded chipboard, untreated or coated with white primer, 10 mm

Thermal insulation: intensely expanded rigid polystyrene foam (EPS perimeter), 30 kg/m<sup>3</sup>, 40–170 mm

Bonding: water-resistant D3 (EN 204-D3)

Accessories: Z mounting brackets made of hot-galvanised sheet metal (2 pieces per panel) and wedge anchor DBZ 6/4.5 by Hilti (or similar product with ceiling and fire protection certificate)

### Materials of type DM

Cover panel: cement-bonded chipboard, untreated or coated with white primer, 10 mm

Thermal insulation: rock wool, 160 kg/m<sup>3</sup>, 40–120 mm

Bonding: water-resistant D3 (EN 204-D3)

Accessories: Z mounting brackets made of hot-galvanised sheet metal (2 pieces per panel) and wedge anchor DBZ 6/4.5 by Hilti (or similar product with ceiling and fire protection certificate)

### Surface

The insulation panel is available with cement-bonded chipboard, untreated or coated with white primer. The surface can be left untreated or coated with dispersion paint. The surface is washable and can be cleaned with a high-pressure cleaner.

### Edge milling

- Circumferential groove and tongue joint
- Bevelled edge, 1 mm

### Dimensions

Format: 1650 × 230 mm (0.379 m<sup>2</sup>)

Thicknesses type DS: 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180 mm

Thicknesses type DL: 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180 mm

Thicknesses type DP: 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180 mm

Thicknesses type DM: 50, 70, 90, 110, 130 mm

### Thermal transmittance coefficients of type DS (U-values)

Element thickness	mm	50	60	70	80	90	100	110
U-value	W/m <sup>2</sup> K	0,790	0,654	0,558	0,487	0,431	0,387	0,351
Elementstärke	mm	120	130	140	150	160	170	180
U-value	W/m <sup>2</sup> K	0,322	0,297	0,275	0,257	0,240	0,226	0,213

### Thermal transmittance coefficients of type DL (U-values)

Element thickness	mm	50	60	70	80	90	100	110
U-value	W/m <sup>2</sup> K	0,647	0,532	0,452	0,393	0,347	0,311	0,282
Element thickness	mm	120	130	140	150	160	170	180
U-value	W/m <sup>2</sup> K	0,258	0,237	0,220	0,205	0,192	0,180	0,170

### Thermal transmittance coefficients of type DP (U-values)

Element thickness	mm	50	60	70	80	90	100	110
U-value	W/m <sup>2</sup> K	0,710	0,578	0,492	0,428	0,379	0,340	0,308
Element thickness	mm	120	130	140	150	160	170	180
U-value	W/m <sup>2</sup> K	0,282	0,260	0,241	0,224	0,210	0,198	0,186

### Thermal transmittance coefficients of type DM (U-values)

Element thickness	mm	50	70	90	110	130
U-value	W/m <sup>2</sup> K	0.907	0.647	0.502	0.411	0.347

### Fire protection application

Type DM: VKF fire protection certificate no. 14361, fire index 6q.3

### Delivery

Delivery of exact quantity on single-use pallets wrapped with stretch film

### Consultation

For more information please refer to the technical data sheets.

Our technical consultants are at your service for all questions.



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