

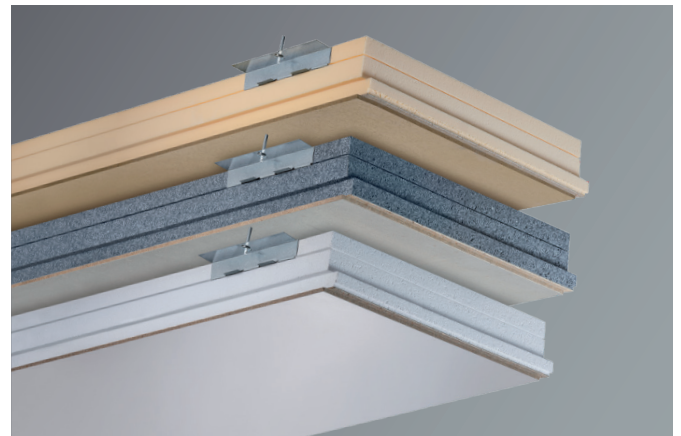
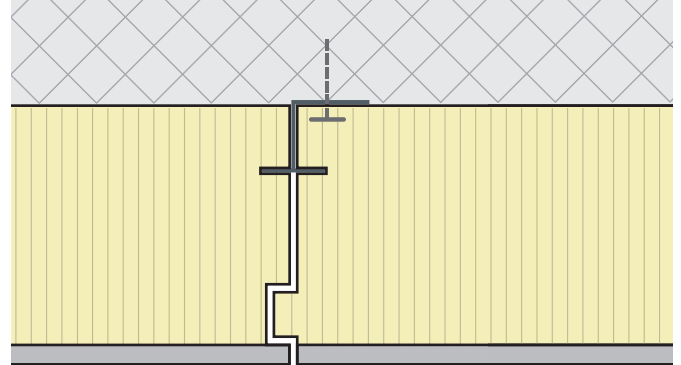
## Type DNS, DNL and DNX thermal insulation boards

### Application

The Frinorm type DNS, DNL and DNX thermal insulation boards are suitable for subsequent installation on ceilings and walls in underground car parks, garages and cellars in new and converted buildings, as well as in old-building renovation. They are suitable for single- and multi-family homes as well as for commercial, industrial, agricultural and public buildings.

### Properties

- Outstanding thermal insulation values up to 0.15 W/m<sup>2</sup>K
- Versions: with expanded polystyrene rigid foam (EPS), 15 kg/m<sup>3</sup>, expanded polystyrene rigid foam with graphite additive (EPS lambda), 20 kg/m<sup>3</sup>, or extruded polystyrene rigid foam (XPS), 33 kg/m<sup>3</sup>
- Element thicknesses up to 200 mm can be produced
- Cement-bonded chipboard as cover panel, water-resistant, impact-resistant and non-flammable
- Rot-resistant, resistant to vermin and mould
- Dimensionally stable and non-warping
- Free of thermal bridges, impeccable panel joints
- Washable and pressure-washer-resistant
- Attractive, aesthetic bottom view
- Manageable format
- Quick and easy installation



### Product description

The Frinorm insulation boards have outstanding thermal insulation properties. They are available in three different versions: type DNS is produced using expanded polystyrene rigid foam (EPS), 15 kg/m<sup>3</sup>, type DNL uses expanded polystyrene rigid foam with graphite additive (EPS lambda), 20 kg/m<sup>3</sup>, while type DNX uses extruded polystyrene rigid foam (XPS), 33 kg/m<sup>3</sup>. The insulation panels are covered with a 10 mm cement-bonded chipboard which is not only water-resistant and impact-resistant, but also non-flammable. The fastening is concealed, without visible screws, with the Z mounting bracket which hangs in the groove of the thermal insulation. The cement-grey surface of the cement-bonded chipboards is available untreated or with white primer. It can be left untreated or coated with emulsion paint. The circumferential groove and tongue joint ensures there is no thermal bridge and the panel joints are visually perfect. Once installed, the insulation panel is a cover with an aesthetic and attractive bottom view.

### Type DNS materials

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

Thermal insulation: expanded polystyrene rigid foam (EPS), 15 kg/m<sup>3</sup>, 70–190 mm

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

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

### Type DNL materials

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

Thermal insulation: expanded polystyrene rigid foam with graphite additive (EPS lambda), 20 kg/m<sup>3</sup>, 70–190 mm

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

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

## Type DNX materials

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

Thermal insulation: extruded polystyrene rigid foam (XPS), 33 kg/m<sup>3</sup>, 80–180 mm

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

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

## Surface

The insulation boards is available with a cement-bonded chipboard, untreated or coated with white primer. The surface can be left untreated or coated with emulsion paint. The surface is washable and pressure-washer-resistant.

## Edge milling

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

## Dimensions

DNS, DNL format: 1235 × 585 mm (0.722 m<sup>2</sup>)

DNX format: 1230 × 580 mm (0.713 m<sup>2</sup>)

Type DNS thicknesses: 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200 mm

Type DNL thicknesses: 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200 mm

Type DNX thicknesses: 90, 110, 130, 150, 170, 190 mm

## Type DNS thermal transmittance coefficients (U-values)

Element thickness	mm	80	90	100	110	120	130	140
U-value	W/m <sup>2</sup> K	0.487	0.431	0.387	0.351	0.322	0.297	0.275

Element thickness	mm	150	160	170	180	190	200
U-value	W/m <sup>2</sup> K	0.257	0.240	0.226	0.213	0.201	0.191

## Type DNL thermal transmittance coefficients (U-values)

Element thickness	mm	80	90	100	110	120	130	140
U-value	W/m <sup>2</sup> K	0.393	0.347	0.311	0.282	0.258	0.237	0.220

Element thickness	mm	150	160	170	180	190	200
U-value	W/m <sup>2</sup> K	0.205	0.192	0.180	0.170	0.161	0.153

## Type DNX thermal transmittance coefficients (U-values)

Element thickness	mm	90	110	130	150	170	190
U-value	W/m <sup>2</sup> K	0.379	0.326	0.275	0.237	0.209	0.187

## Delivery

Delivery is carried out true to quantity via disposable pallets covered in stretch foil.

## Consultation

For more information please refer to the technical data sheets.

Our technical consultants are at your service for all questions.