

F-BOARD, Thermal Insulation Boards

Thermal insulation boards for use with existing & new floors

F-Board was first introduced to the market in April 2007 to fill a void in the thermal insulations market, as there had been no suitable thermal insulation to enable people reconstructing floors, to be able to insulate the electrical heating mats and cables against the underlying structures. That meant that heat has been allowed to conduct freely into the foundation.

While there are thermal-insulation materials available on the market, these are either thicker than can be used for floor reconstruction purposes, or their mechanical and thermal-insulation characteristics are significantly poorer and so they are not suitable for such applications.

These boards have a sandwich structure that consists of a flexible cement layer 1 mm thick and reinforced with a glass-fiber gauze fabric that is applied on both sides of a board made of extruded polystyrene. This ensures very good mechanical resistance of the thermal insulation when laying the boards and also throughout the entire useful life of the floor.

F-boards:

- significantly reduce the operating costs of floor heating
- greatly accelerate the initial heat-up so that a comfortable floor temperature is reached more quickly after switching on
- are made from a thermal-insulation material that can be covered directly with the flexible sealing material and then the heating mat or cable just beneath the floor tiling, without using the concrete spread footing that must normally be used
- permit the floor system to be installed at a low height
- provide a hydro-insulating foundation (a special adhesive material or tape must be used for the spaces between the boards)
- come in 6 mm and 10 mm thicknesses
- can be applied to a wide range of underlying materials (concrete, wood-fiber boards, chipboards, plasterboards, cement-fiber boards, anhydrite materials, original tiles, fixed wooden foundation, and others)

Technical specifications

Characteristic of the core:

Characteristic	Standard	Value	Comment
Fire resistance	DIN EN 13501 DIN 4102	E B1	
Thermal conductivity	DIN EN 13164	0.029 Wm ⁻¹ K ⁻¹	
Compression strength	DIN EN 826	300 kPa	Compressive stress at 10% deformation
Tensile strength vertically to the board surface	DIN EN 1607	500 kPa	
Long-term absorptivity	DIN EN 12087	≤1.5%	WL(T)1.5 - insulation core
Dimensional stability	DIN EN 1604	≤2.0%	Δε _a , Δε _b , Δε _d

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Product characteristics:

Characteristic	Standard	Value	Comment
Dimensional stability	ČSN EN 1604	0.0	$\Delta\epsilon_s, \Delta\epsilon_o, \Delta\epsilon_d$
Compression strength	ČSN EN 826	450 kPa	Compressive stress at 10% deformation
Tensile strength vertically to the board surface	ČSN EN 1607	800 kPa	Tensile strength vertically to the board surface
Thermal resistance		0.16 m ² KW ⁻¹	For 6 mm width
Thermal resistance		0.29 m ² KW ⁻¹	For 10 mm width
Weight of board		1.8 kg	For 6 mm width
Weight of board		2.0 kg	For 10 mm width

Board dimensions:

- 1250 x 600 x 6 mm
- 1250 x 600 x 10 mm

Packaging

One package contains 6 boards. These can cover up to 4.5 m² of floor area. Total weight of one package containing 6 mm boards is 11.5 kg; total weight of one package containing 10 mm boards is 12.8 kg.

LAYING THE BOARDS

Foundation and its preparation

The foundation must be properly set, without an inclination for further shrinking. It must be dry, solid, and free from dust and grease. Areas that are unstable, not solid or dirty must be removed and repaired. Before applying the boards, cover the foundation with a suitable penetration coat according to the nature of the foundation and the adhesive material.



Affixing the boards

The boards must be affixed to the entire foundation area with a suitable adhesive material on a cement base. When affixing the boards onto a wooden foundation or other foundations that are unstable with regard to their dimensions, the adhesive sealing cement must be sufficiently flexible. Apply the adhesive material onto the prepared foundation with a stainless steel notched spreader



having notches 6x6 mm or 8x8 mm, so that even the slightest unevenness of the foundation is filled in. Place the boards very close to one another, in a running bond pattern, onto the adhesive material just applied. Set and align them properly. Each board must be in contact with the adhesive material

and the foundation over its entire area. The adhesive material must not come into the spaces between the boards. The boards can be cut to fit by scoring them on both sides along their width and breaking

them against an edge. If the boards are to be placed on wooden and other foundations that are unstable with regard to their dimensions, additional anchoring should be used. As anchors, use screws with suitable plastic or metal cups. It is recommended to use 4 anchors per one board. The anchors should be placed at least 30 mm from the edge of the board. They should be screwed in so that the upper edge of each anchor is level with the board surface. Allow the adhesive material to set and harden completely. The expansion joints in the foundation must be preserved. For wooden and other foundations that are unstable with regard to their dimensions, it is recommended to use the 10 mm wide boards.

Covering the spaces between the boards

The spaces are to be covered with a self-adhesive reinforcing tape, or in combination with a hydro-insulating sealing tape or cement. The tape should overlap the board edges by at least 50 mm.



Laying the mats and floor tiles

Proceed to lay the mats and floor tiles in the standard way that is described in the instructions for use for Devimat™ heating mats and cables. It is not necessary to first penetrate the foundation boards, as F-boards stick very well to the cement adhesive materials even without the penetration coat.

