Technical Information
Firetherm® Fire Protection Board

The Firetherm® Fire Protection Board is a high quality building material with extraordinary characteristics. It is ideal for floor systems, fire protecting applications, partition walls, sonic effective casings, and many other applications. Firetherm® Fire Protection Boards are cementitious bound particle boards consisting of timber, cement, water, and hydration additives. The structure of the boards is formed by compressing the chipped wood, which is enclosed by cement. The boards are produces according to product standards EN 633, EN 634-1, and EN 634-2.

The most important benefits of Firetherm® Fire Protection Board:
Firetherm® Fire Protection Board unites the advantages of timber and cement. It is lighter than conventional fibre cement boards. It is more stable than oriented structural boards or gypsum cardboards and has an excellent weather and frost resistance.

- environmental friendliness
- reaction to fire A2-s1, d0
- humidity resistant
- frost resistant
- good sound insulation
- insignificant moisture expansion
- mould resistant
- good machinable

Dimensions:

Firetherm® Fire Protection Board with flat, cement grey surface	
Basic dimensions	1250 x 3350 mm
Board thicknesses	8-10-12-14-16-18-20-22-24-26-28-30-32 by arrangement 34-36-38-40 mm
Type of relief	flat
Surface treatment	untreated

Technical data:

Physical and mechanical characteristic of Firetherm® Fire Protection Boards	**Standard**	**Standard values**	**Achieved values**
Raw density	EN 323	min. 1000 kg / m³	1350 kg / m³
Bending tensile strength	EN 310	min. 9.0 N / mm²	11.5 N / mm²
Elastic modulus	EN 310	min. 4500 N / mm2	6800 N / mm²
Tensile strength rectangular to the plane of the board	EN 319	min. 0.5 N / mm²	0.63 N / mm²
Characteristic value humidity of boards in percent by weight at 20 °C and 50 % relative humidity		9 % ± 3 %	9,5 %
Temperature extension value			0,011 mm/m °C
Humidity of boards after 24 h storage under water			max. 16 %
Thickness swell after 24 h storage under water			max. 0,28 %
Fire behaviour	EN 13501-1	A2-s1, d0 (apart from floorings)	
Thermal conductivity	EN 12664	board thickness 8 mm: 0.200 W / m·K	
		board thickness 24 mm: 0.251 W / m·K	
		board thickness 40 mm: 0.287 W / m·K	
Frost resistance after 100 frost dew alterations	EN 1328	R_L > 0.7	R_L = 0.97

For sound insulation calculation, the following parameters have been tested:		
Loss coefficient		0.013
propagation velocity of longitudinal waves		2128 m / s
material constant		22.7
R_w index	thicknesses 8, 10 mm	30 dB
	thicknesses 12, 14 mm	31 dB
	thicknesses 16, 20 mm	32 dB
	thickness 24 mm	33 dB
	thickness 32 mm	34 dB
	thickness 40 mm	35 dB

Processing:
A big advantage of Firetherm® Fire Protection Board is that it can be machined with the same conventional wood panels. The industrial processing should only be done with tungsten carbide tipped tools.

- **Splitting (Separating, Cutting, Sawing)**
  For the processing we recommend to use carbide wood saws. To achieve an optimum cutting speed of 30 – 60 m / s, machines with electronic speed control are recommended. Although the resulting dust does not contain any harmful substances, we recommend dust extraction.
- **Drilling**
  Metal Drills (HSS) can be used to drill the plate. Well suited are electronic drills with electronic speed control
- **Milling**
  When milling the mechanical properties (minimum thickness) of the plates must be taken into account. The recommended cutting speed is in the range of 25 – 35 m / s
- **Grinding**
  Manual sanding is useful only in the joint area of the boards, where the unevenness in the surface is to be compensated, or where the board surface is to roughened. It uses electronic hand grinders with sandpaper of grain size 40 – 80. Here, too, should be provided for the appropriate dust extraction.

Screwing:
The boards can be fastened with screws or clamps. Nails and the screws for plasterboards are not recommended. All types of fasteners must be stainless.

- **Fixing on wood:**
  Self-tapping countersunk head wood screws with double thread and hardened tip are optimal for fixing the boards. The wood screw should be at least 2/3 of its length crewed into the wooden structure. When used as floor panels, screws that are 20 mm longer than the thickness of the panel are sufficient.

- **Mounting on sheet metal profiles:**
  Self-tapping screws with threads up to the screw head are required for mounting on sheet metal profiles in the interior. As a carrier usually galvanized CW and UW profiles are used. When mounting on the sheet metal profiles, the screw must be at least 10 mm longer than the plate thickness.

Dimensional tolerances:

Properties	Board thicknesses	Requirement
Board thickness, untrimmed	8, 10 mm	± 0.7 mm
	12, 14 mm	± 1.0 mm
	16, 18 mm	± 1.2 mm
	20 – 40 mm	± 1.5 mm
Length and width of the basic size		± 5.0 mm
Tolerance of the edge grade		1.5 mm / m
Tolerance squareness		2.0 mm / m

The specified tolerances have been determined in accordance with EN634-1.

Storage and Transport:

The boards are supplied on wooden pallets with band strapping. For short-term protection of the boards from soiling, the boards are covered with a PE foil. This foiling of the boards offers no water protection. The boards should be stored in dry and roofed rooms so that they can no longer absorb moisture before installation.
Lying, the boards should be transported if possible on a base. For mutual transport, the boards should be carried vertically (upright).

Attention! Important Note:
Above information are based on best present knowledge of current technology, but do not guarantee faultless processing of our products. The information is based on practical results of our tests, but is not binding and does not constitute warranties of characteristics in terms of Federal Supreme Court jurisdiction. Our information does not constitute a legally binding assurance of certain properties or suitability for a specific purpose. Supplementary information by our specialists are merely recommendations, for which no liability is accepted.
Due to the many possible applications of our products, we recommend subjecting the project to a thorough suitability test on original materials before release for further application.
Since our information are non-binding we do not warranty their correctness. For this reason we accept no liability for possible improper processing based on information submitted by our employees.
This technical data sheet replaces all previous versions and is valid until a new version is issued, or until Dec. 31, 2024. Please request the latest version after Jan. 01, 2025.

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