Thermax®

THERMAX® SF / S / HD Firebox lining

Environmentally compatible combustion technology for stoves and heaters

Firebox lining

EFA

TPGreen Solutions tpgreen.eu

Effective and environmentally compatible: THERMAX® Firebox lining for perfect combustion technology

THERMAX® refractory ensures that a stove produces healthy warmth while burning cleanly and economically. What distinguishes high quality from conventional stoves is the efficient combustion technology combined with selected stove materials.
The key to environmentally compatible combustion technology is a high combustion temperature. The higher the temperature, the more efficient and clean the combustion process is. Which means: You need less wood to produce the same heating performance. Virtually no soot particles are produced to soil the glass, which means less cleaning is required.

Two manufacturing processes. One THERMAX® quality. No compromises.

We manufacture our THERMAX® products in two different production processes.
We mainly produce in a hot pressing process. The complex technology behind this process enables us to manufacture large-format panels in high quality in terms of edge strength, surface quality and shape tolerance.
We market these products under the THERMAX® SF brand. We have now expanded our capacities with a further process and also produce THERMAX® boards using the cold-pressing method.
Thanks to our many years of experience, we have succeeded in producing cold-pressed boards of the same quality as our original THERMAX® panels, which are manufactured using the hot-pressing process. The products from this capacity expansion are called THERMAX® S.
In addition to the two manufacturing processes mentioned above, our moulded parts are also marketed under THERMAX® S, since they are produced with product-specific tools in a cold pressing process.

Heating insert with THERMAX® combustion chamber in the Design version

Thermax®

Individually manufactured firebox linings from THERMAX®

- Environmentally compatible
- Resistant to temperature change
- Fracture-proof
- Recyclable
- Flexible
- Low weight
- Superb quality

Examples of exclusively adapted THERMAX® S moulded parts for a wide range of stove construction

What are the advantages of THERMAX® over other products?

Better combustion protects the environment:
With the start of firing, a THERMAX® firebox lining improves the combustion inside a stove. The reasons for this are as follows: THERMAX® linings have low thermal conductivity. Due to the low thermal conductivity and low caloric capacity, the required combustion chamber temperature is reached quickly. Hardly any soot is produced and combustion is environmentally friendly. Best efficiencies with low emission values are achieved by THERMAX® firebox linings. With conventional materials with high caloric capacity, part of the heat is lost to the material itself and to the outer walls of the stove. The combustion temperature is therefore lower when the stove is lit, which can lead to incomplete combustion.
Poor combustion is reflected in an increased formation of soot, which is deposited on the glass.

Higher thermal shock resistance, lower susceptibility to fracture:
THERMAX® boards and moulded parts have a special layer structure: the individual vermiculite grains within a board are interlocked with each other. THERMAX® parts are thus able to compensate for the stresses caused by temperature changes. They therefore have a low susceptibility to fracture.

Optical advantages:
THERMAX® refractory has a smooth, even surface, which does not discolour, giving stoves with THERMAX® lining a more attractive appearance. In addition, THERMAX® firebox lining can be dyed with Techno-Coat HT, a special coating for combustion chambers that is available in black, white or red.

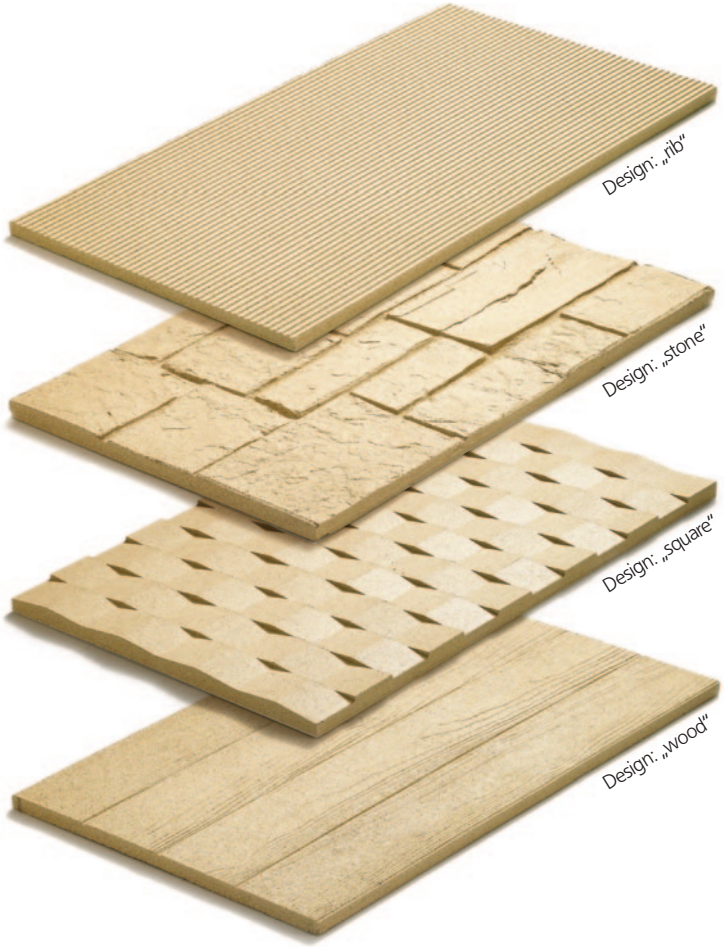
Weight savings:
THERMAX® firebox lining reduces the overall weight of a stove. Replacing fireclay refractory with THERMAX® boards can reduce the weight of the refractory by as much as 65 %.

Extremely flexible:
THERMAX® boards are particularly easy to work with. It is not necessary to stock sets for different stoves as the boards can be cut or milled with simple woodworking tools. Stocking is reduced to standard boards that can be cut as required for the stove to be lined.
As such, quick and easy service is guaranteed if a customer requires new stove refractory.

THERMAX® Firebox lining

THERMAX® S 700

Design versions of the boards for Firebox linings



THERMAX® S 700 – individual
THERMAX® S 700 can be supplied with a designed surface in many possible shapes. In addition, THERMAX® stove refractory boards can be coloured with Techno-Coat HT, a special coating for combustion chambers, available in black, white or red.

We are pleased to produce individual designs according to your wishes and requirements.

Thermax®

THERMAX® SF / HD

Technical Data

THERMAX®		SF 600	SF 750	SF 850	HD 1200
Delivery sizes (extract)	mm / ±2	2440 x 1250 1250 x 1000	2440 x 1250 1250 x 1000	2440 x 1250 1250 x 1000	1000 x 610
Thickness EN 823	mm / ±1	20 – 50	8 – 40	20 – 30	20 – 80
Classification temperature EN 1094-6	°C	1100	1100	1100	1150
Bulk density EN 1602	kg/m³	575 – 650	675 – 750	775 – 850	1150 – 1250
Bending strength EN 12089 B	MPa	2.3	3.1	4.0	5.5
Compressive strength EN 826	MPa	3.2	4.3	5.1	8.0
Thermal conductivity ASTM C201 – C182	W/mK 200 °C W/mK 400 °C W/mK 600 °C	0.20 0.22 0.22	0.21 0.23 0.24	0.23 0.24 0.24	0.31 0.32 0.33
Thermal shrinkage EN 1094-6	% / after 12 hrs. at 1100 °C at 1150 °C	< 2.0	< 2.0	< 2.0	< 2.0
Reversible thermal expansion linear	% / 20 – 700 °C	0.9	0.9	0.9	0.6

THERMAX® S

Technical Data

THERMAX®		S 600	S 700	S 800	S 900
Delivery sizes	mm / ±2	1000 x 610	1000 x 610	1000 x 610	1000 x 610
Thickness EN 823	mm / ±1	15 – 100	15 – 80	15 – 60	15 – 50
Classification temperature EN 1094-6	°C	1100	1100	1100	1100
Bulk density EN 1602	kg/m³	575 – 650	675 – 750	775 – 850	875 – 950
Bending strength EN 12089 B	MPa	2.2	3.0	3.9	4.5
Compressive strength EN 826	MPa	3.4	4.5	5.2	5.8
Thermal conductivity ASTM C201 – C182	W/mK 200 °C W/mK 400 °C W/mK 600 °C	0.20 0.21 0.22	0.21 0.22 0.24	0.23 0.24 0.25	0.24 0.25 0.26
Thermal shrinkage EN 1094-6	% / after 12 hrs. at 1100 °C	< 2.0	< 2.0	< 2.0	< 2.0
Reversible thermal expansion linear	% / 20 – 700 °C	0.6	0.6	0.6	0.6

We supply special formats and thicknesses on request. We are happy to produce stamped or milled parts or cuts according to your drawings. The classification temperature is not the equivalent of the operational temperature - especially when physical conditions such as tensile or compressive loads are involved. For applications as high-temperature insulation, lower temperatures generally must be applied. In these cases, the engineering department of our company will assist you. You can request heat transfer calculations for this material from our engineering department.
The information contained in this publication is for clarification purposes only and is not intended to create any contractual obligations. For further information and advice on specific details of the products described can be obtained in writing from Techno-Physik Eng. GmbH (Germany). The Techno-Physik Group is constantly improving its products and therefore reserves the right to change product specifications at any time without notice. It is therefore always the responsibility of the customer/user to ensure that the Techno-Physik Group material is suitable for their specific purposes. The values given are average values from current production and are for guidance only. No warranty can be derived from them. We always recommend testing the material.
Sales via a company of the Techno-Physik Group are subject to the General Terms and Conditions of Sale of the respective company, a copy of which is available on request.

TechnoPhysik Engineering GmbH

Techno-Physik Engineering GmbH
Schürmannstrasse 27 – 31 | D-45136 Essen

T +49 201 879911
F +49 201 8799199

Visit us at
www.thermax.eu