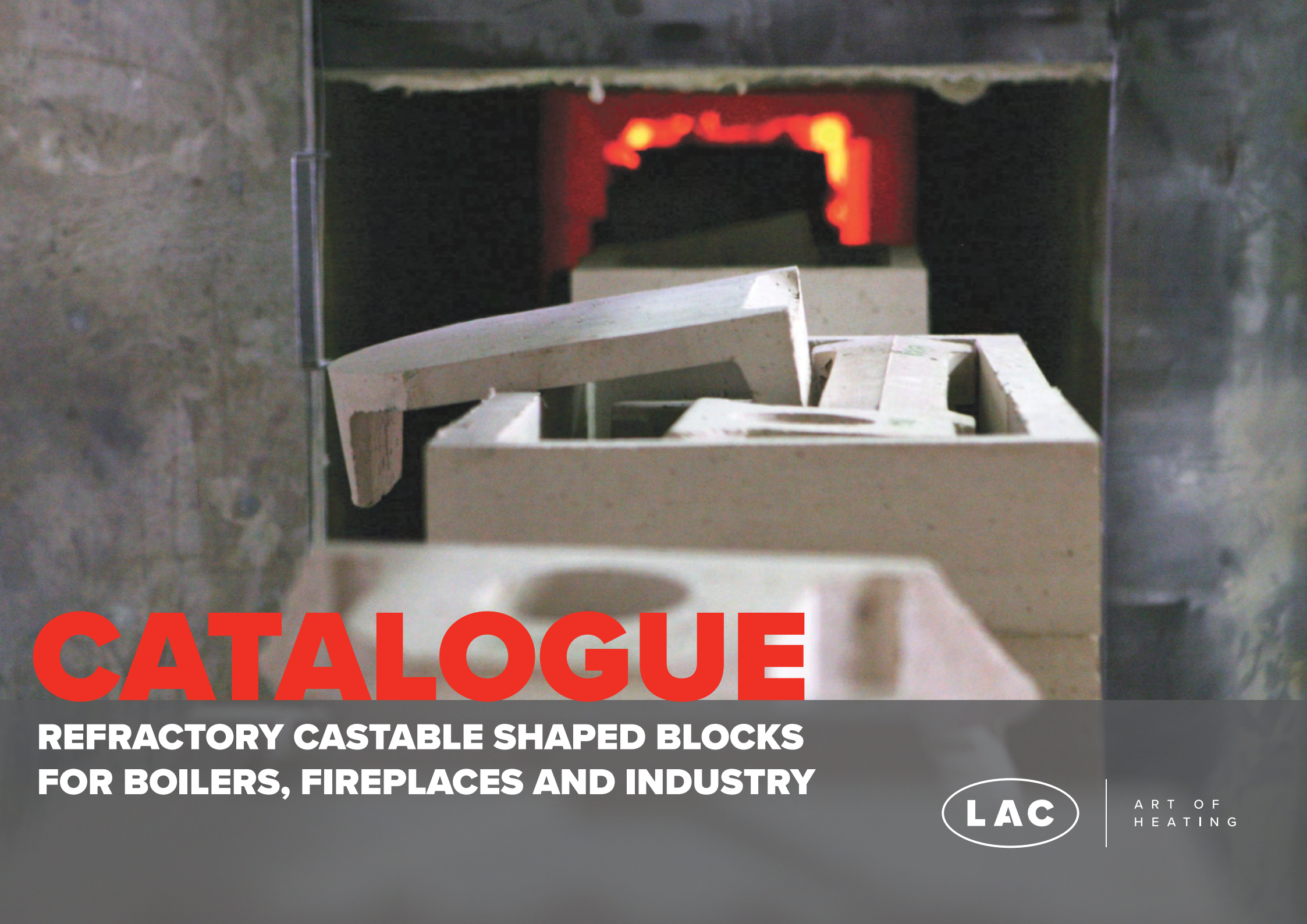


CATALOGUE

REFRACTORY CASTABLE SHAPED BLOCKS FOR BOILERS, FIREPLACES AND INDUSTRY

LAC

ART OF HEATING

LAC

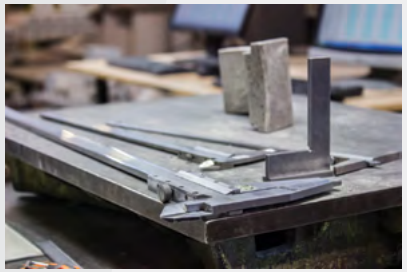
ART OF
HEATING

COMPANY PROFILE

For almost three decades, LAC, s.r.o. has been a successful manufacturer of refractory castable shaped blocks, which are made in Hrušovany nad Jevišovkou. The registered office and the production of industrial furnaces and dryers are in Židlochovice.

Refractory concrete is manufactured according to our own formulas and their composition ensures the maximum possible resistance, strength and dimensional stability of the shaped blocks. LAC refractory concrete is a better alternative to fire clay. Over 65,000 different shaped blocks have passed through our hands. Experienced technical dealers will recommend the appropriate material and, in cooperation with the design department, will optimise or design the shaped blocks for boilers, fireplaces and industry.






Firing at up to 950 °C

Over 65,000 different shapes

Over 4,400 m² of storage

Traditional handmade production

We produce test shaped blocks

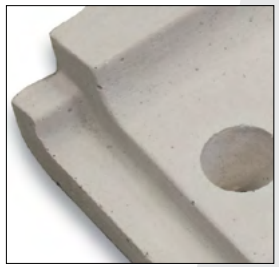
3D print

Solid Works

CONTENTS

LOG COMBUSTION BOILERS

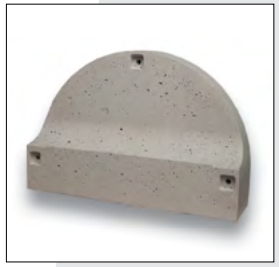
We offer refractory castable shaped blocks for the stoking and combustion chambers of log combustion boilers, which by their properties guarantee temperature and an emission balanced combustion process with the added value of long-term protection of extremely exposed parts of the steel body.



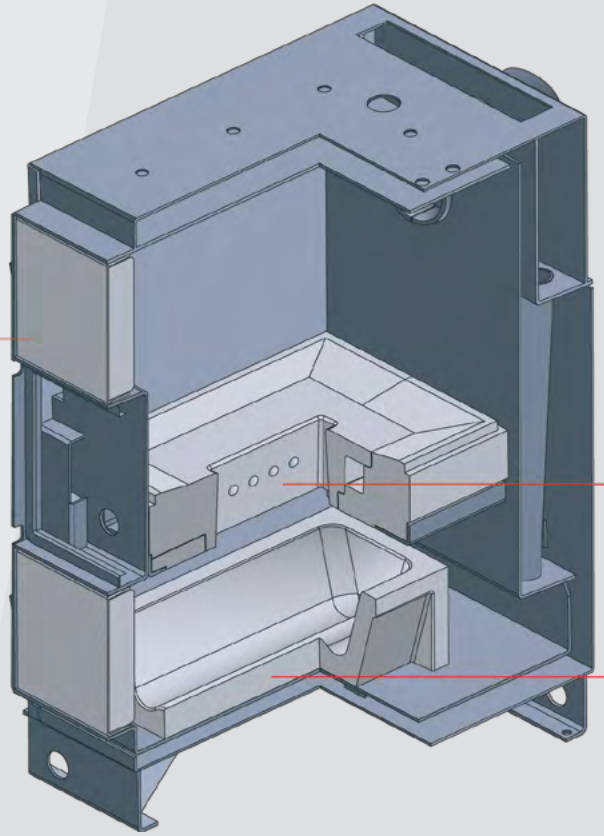
Shaped block for stoking chambers

Shaped block for combustion chambers

Shaped block for doors



Shaped block for doors



Shaped blocks for stoking chambers

The shaped blocks for stoking chambers are designed to prevent mechanical damage when loading fuel. We recommend materials with a higher resistance to process alkali.

LACfire 1800/20 **up to 1600 °C**

Corundum refractory concrete with the addition of silicon carbide.

LACfire 1550/30 **up to 1450 °C**

Combined mullite refractory concrete with the addition of silicon carbide.

Shaped blocks for combustion chambers

Shaped blocks for combustion chambers guarantee a rapid rise to optimum operating temperature, balanced air and gas mixing. Their accumulation properties will ensure extended thermal stability for volatile substances and a gradual temperature gradient after the fuel burns out.

LACfire 1500 **up to 1350 °C**

Mullite-based refractory concrete with micro reinforcement asstandard.

Shaped blocks for doors

Manufacturers of wood-fired boilers choose refractory concrete over vermiculite and ceramic fibre primarily for its high mechanical durability and for raising combustion chamber temperatures, which increases the boiler efficiency and service life.

LACfire 1200 IZO **up to 1100 °C**

Insulating refractory concrete with stable dimensions and very low thermal conductivity.

LACfire 1800/20 **up to 1600 °C**

Corundum refractory concrete with the addition of silicon carbide.

PELLET-FIRED BOILERS

We design refractory castable shaped blocks for pellet boilers so that they set the chamber's gas flow whirling, as this ensures the complete combustion of dust particles. If a boiler is fired with high-quality pellets, then maintenance is very easy.

Shaped blocks for combustion chambers

Shielding and protecting the heat exchange surfaces of the boiler body are among the key functions of our shaped blocks for combustion chambers.

LACfire 1800/20 **up to 1600 °C**

Corundum refractory concrete with the addition of silicon carbide.

Deflector

The basic function of refractory deflectors is to shield the flue gas paths and to create a swirling motion of gases above the burner. Through this, they aid in the optimal burning of flying particles and, in turn, reduce the dust content in flue gases and emissions.

LACfire 1800/20 **up to 1600 °C**

Corundum refractory concrete with the addition of silicon carbide.

LACfire 1550/30 **up to 1450 °C**

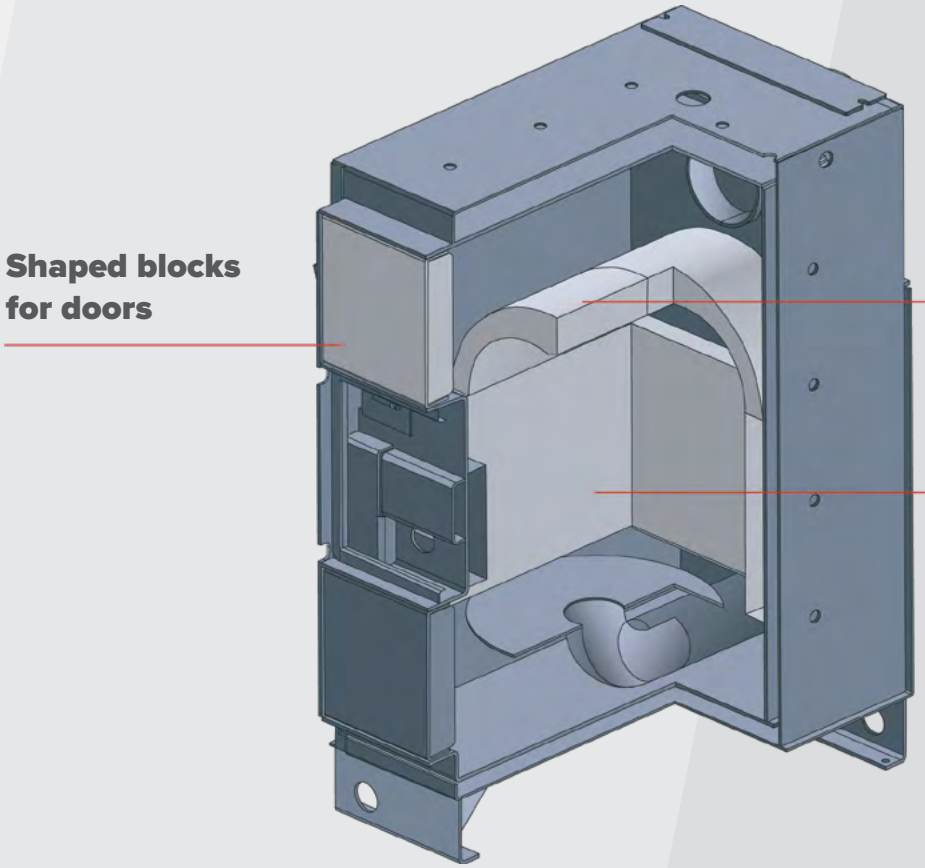
Combined mullite refractory concrete with the addition of silicon carbide.

Shaped blocks for doors

The manufacturers of pellet-fired boilers choose refractory concrete over vermiculite and ceramic fibre primarily for its high mechanical durability and for raising combustion chamber temperatures, which increases the efficiency and service life of boilers.

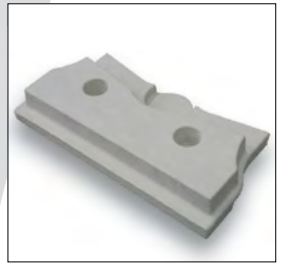
LACfire 1200 IZO **up to 1100 °C**

Insulating refractory concrete with stable dimensions and very low thermal conductivity.



Shaped block for combustion chamber

Deflector



Shaped block for doors

Burner

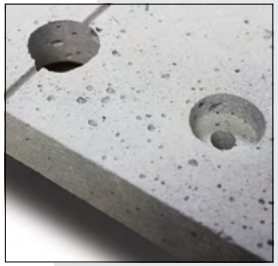
WOOD CHIP COMBUSTION BOILERS

For wood chip combustion boilers, it is important that the refractory castable shaped blocks for the combustion chambers have bulk. The bulk of the shaped blocks ensures that the wood chips are dried completely, enabling boilers to burn the chips more efficiently, thereby reducing emissions.

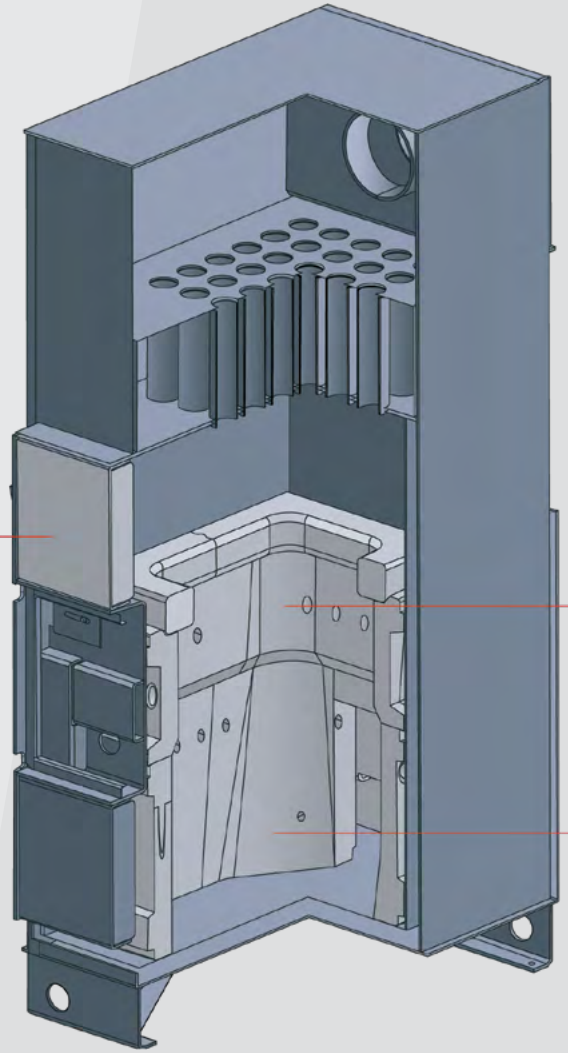
Shaped block for primary combustion chambers

Shaped block for primary combustion chambers

Shaped block for secondary combustion chambers



Shaped block for doors



Shaped blocks for primary combustion chambers

For a combustion chamber to work efficiently, it is important that the shaped blocks have enough bulk to ensure the optimal pre-heating of primary air. However, the most valuable benefit of our shaped blocks for combustion chambers is their resistance to thermochemical corrosion, both to oxidizing and reducing atmosphere.

LACfire 1550/30 **up to 1450 °C**

Combined mullite refractory concrete with the addition of silicon carbide.

Shaped blocks for secondary combustion chambers

We design our shaped blocks for secondary combustion chambers so that they are able to supply air along two axes. This supports the whirling motion of gases and perfect burning, which improves the performance of your boilers and reduces emissions.

LACfire 1800/20 **up to 1600 °C**

Corundum refractory concrete with the addition of silicon carbide.

Shaped blocks for doors

Manufacturers of wood chip combustion boilers choose refractory concrete over vermiculite and ceramic fibre primarily for its high mechanical durability and for raising combustion chamber temperatures, which increases the boiler efficiency and service life.

LACfire 1200 IZO **up to 1100 °C**

An insulating refractory concrete with stable dimensions and very low thermal conductivity.

COAL COMBUSTION BOILERS

We develop and manufacture deflectors and refractory castable shaped blocks that protect the bodies of coal-fired boilers. Deflectors ensure the swirling motion of flue gas.

Shaped blocks for combustion chambers

We design our shaped blocks for combustion chambers to optimise how they shield and protect the heat exchange surfaces of the boiler body.

LACfire 1500 **up to 1350 °C**

Mullite-based refractory concrete with micro-reinforcement as standard.

Deflector/Reflector/Flame baffle

Shaped blocks of this type are primarily used for shielding combustion paths and as flame baffles for burning volatile substances more efficiently, reducing the dust content in flue gases, and improving emissions results – upon which there are ever-stricter demands.

LACfire 1800/20 **up to 1600 °C**

Corundum refractory concrete with the addition of silicon carbide.

LACfire 1550/30 **up to 1450 °C**

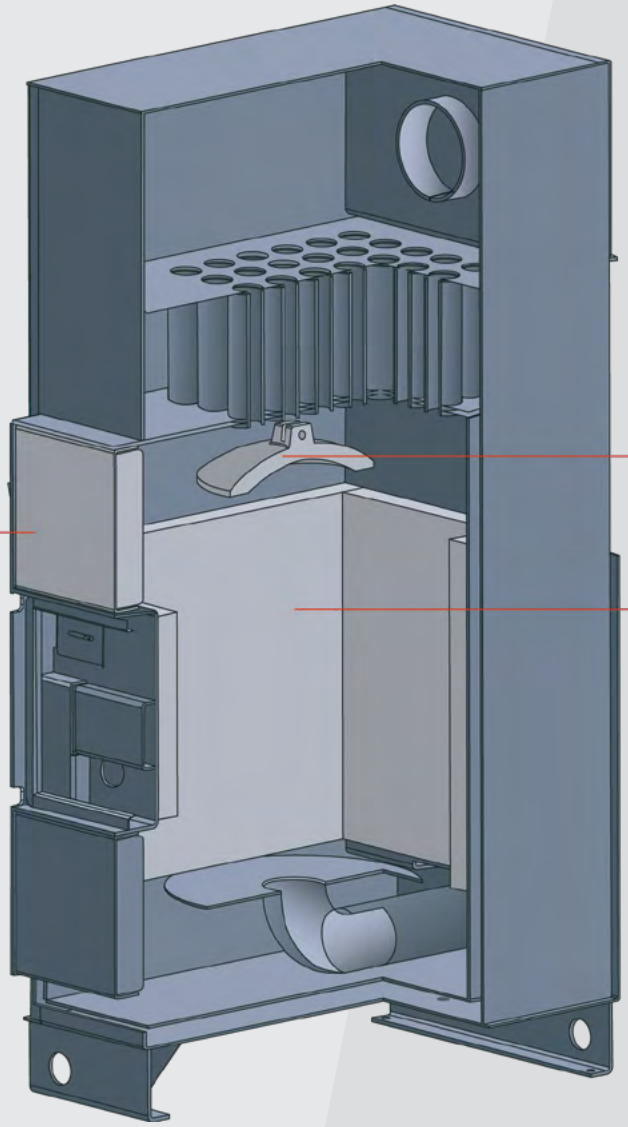
Combined mullite refractory concrete with the addition of silicon carbide.

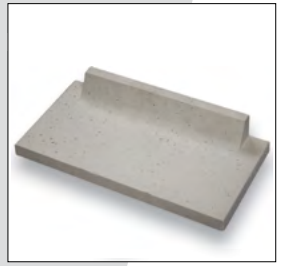
Shaped blocks for doors

Manufacturers of coal-fired boilers choose refractory concrete over vermiculite and ceramic fibre primarily for its high mechanical durability.

LACfire 1200 IZO **up to 1100 °C**

An insulating refractory concrete with stable dimensions and very low thermal conductivity.

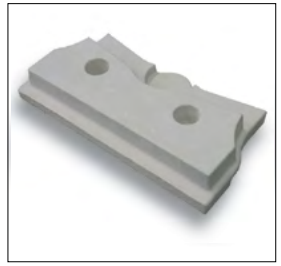




Shaped block for combustion chambers

Deflector

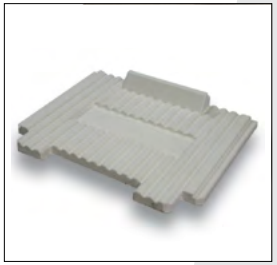
Reflector



Shaped block for doors

FIREPLACES

LAC's shaped blocks improve the efficiency of fireplaces and enable optimal burning, and thus reduce fuel consumption as they let fireplaces use their full potential. Furthermore, since our shaped blocks accumulate heat superbly, the combustion chamber will last a long time at operational temperatures.

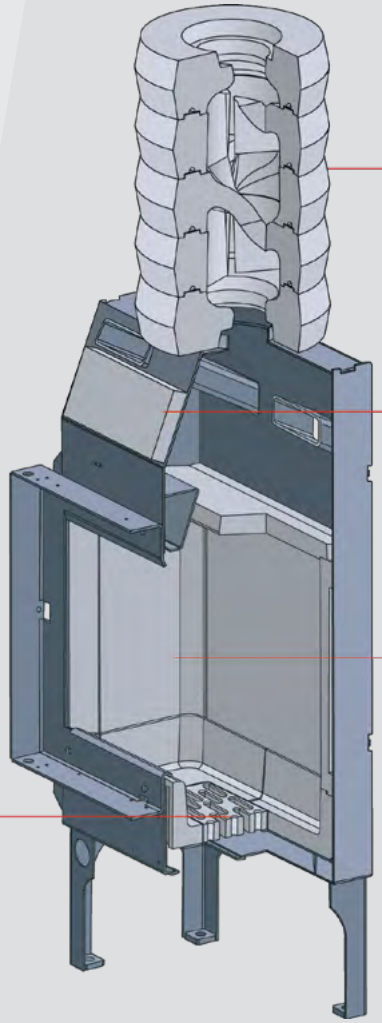


Shaped block for combustion chambers

Grate

Circular grate

Accumulation lining



Shaped blocks for combustion chambers

In our shaped blocks for combustion chambers, we primarily emphasise superb mechanical durability. The combustion chamber must also include a deflector, which acts as a shield for the combustion chamber. We thus design our deflectors so as to extend the flow of gases into the route for flue gases at high temperatures so that the flame is directed, split up, and routed in precisely the way that our customers need.

KZB 2 **up to 1350 °C**

Refractory concrete is ideal for places where mechanical and thermal stress occurs.

Grate

A refractory concrete grate fundamentally improves the combustion process because it pre-heats the air, which is brought in under the grate and then led into the combustion chamber.

KZB 3 **up to 1450 °C**

Refractory concrete with high strength and low permanent length change, withstands mechanical abrasion and impact well.

KZB 4 **up to 1600 °C**

Refractory concrete extremely resistant to temperature changes and abrasion.

Accumulation lining

You should consider buying an accumulation lining if you want to get more use out of the heat from a fireplace stove.

KZB 8 **up to 1000 °C**

Highly accumulative refractory concrete with a bulk density of 3.6 kg/l and a gradual temperature gradient. We recommend using it for facings, linings, and accumulation lining blocks.

KZB 7 **up to 1100 °C**

Insulating refractory concrete with dimensional stability and very low thermal conductivity.

INDUSTRY

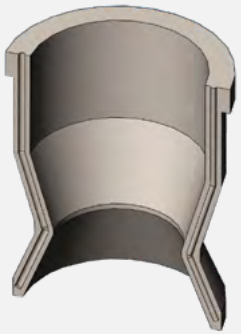
Always consult our technical office on your choice of refractory concrete material for a specific application. LAC refractory castable shaped blocks are commonly used in oxidising and reducing atmospheres and find application in many industries.

1. Power boilers, waste incinerators, furnaces

Blocks for burners of gas and oil boilers, flow walls of fluidised bed boilers, boilers, flow walls of fluidised bed boilers, shaped blocks for biomass combustion boilers, lining for log combustion boilers, shaped blocks for various small furnaces (boilers, stoves, fireplaces), lining for cremation furnaces.

PZB **up to 1800 °C**

Dense liquefied refractory concrete (DCC).



Burner

Firing aid

2. Ceramic and silicate industry

Brick kilns – refractory concrete parts for ceilings and walls, burner blocks, shaped blocks for furnace bogies.

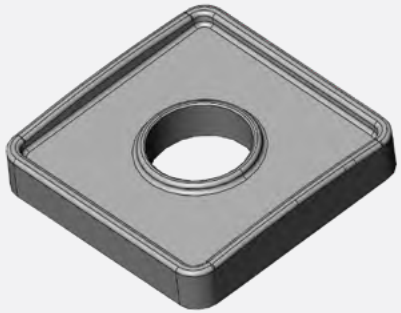
Ceramic kilns – burner blocks, shaped blocks for furnace bogies, parts for electric furnaces.

Cement kilns – burner blocks, burner protective sleeves, shaped blocks for furnace foot and coolers, anchor shaped blocks.

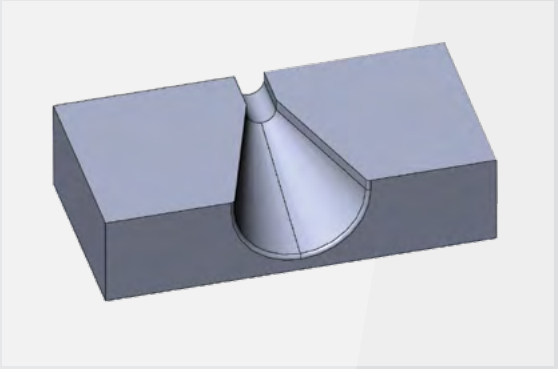
PZB **up to 1800 °C**

Dense liquefied refractory concrete (DCC).

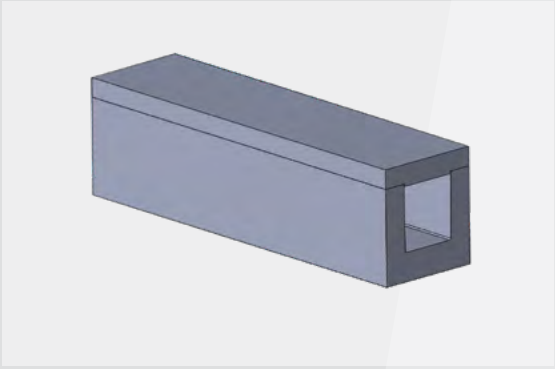
Firing aid



Spacer column

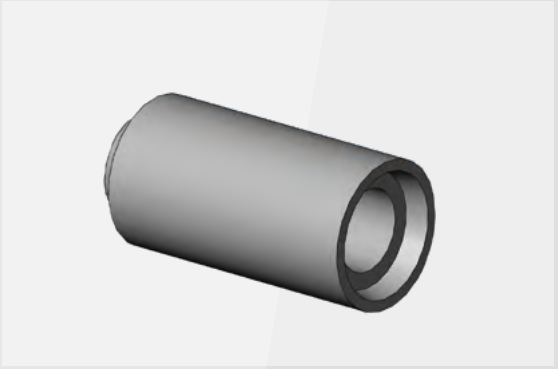


Tapping brick

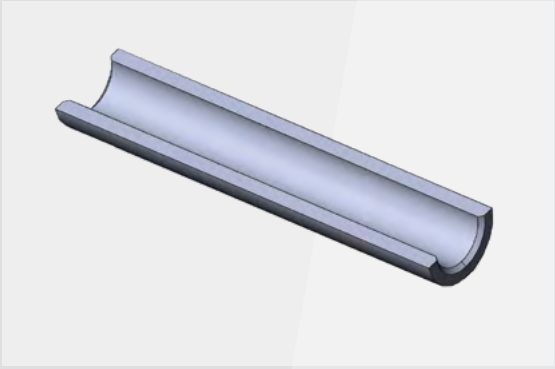


Casting spout

Casting pipe



Shaped block for induction coils



3. Glassworks

Shaped blocks for the construction and reconstruction of glass furnaces – glass-making doors including supporting structure, shaped blocks for burners and exhausts, thresholds for picking up hot melt.

Small refractory castable elements for ladle furnaces – melting cakes, beaks, screens, cakes for drum furnaces, etc.

PZB **up to 1800 °C**

Dense liquefied refractory concrete (DCC).

4. Ferrous and non-ferrous foundries

Pocket blocks for ladles, shaped blocks for ladle linings, runners and channels for electric induction furnaces, furnace and ladle lids, shaped blocks for walking beam furnace hearths, impact plates for ladles, special shaped blocks, funnels and pipes, suspended shaped blocks for galvanizing furnaces.

PZB **up to 1800 °C**

Dense liquefied refractory concrete (DCC).

ACCESSORIES

Heating elements

We produce and supply heating elements both as a part of heating panels and as separate components. We always design and develop them with the customer's application in mind so that we can provide the most appropriate solution.

Cast ceramics

White refractory ceramic material resistant to high temperatures. It is not electrically conductive and is suitable for the production of electric furnace elements.
We also produce grey cast ceramics with the addition of SiC, which has a much higher strength and minimal permanent length changes compared to white ceramics.

VT paste

A fine mullite-based paste with a burnt kaolinite admixture. Used for filling joints, as a binder between shaped blocks or in combination with steel sheeting.

KKB paste

Coarse-grained, mullite-based paste with a corundum admixture. The composition is predestined for the application of thicker layers, for filling larger holes and expansion joints between the shaped blocks and the steel body of the boiler.

Boilermaker's paste

After application, the paste surface dries and the core retains its internal toughness. When exposed to heat, the dilatation does not crumble and does not crack on the surface.

Refractory ceramic fibre ropes

We offer a wide range of high-quality refractory fibre ropes and fabrics.










PARAMETERS OF REFRACTORY CASTABLE SHAPED BLOCKS

Quality	Type	Base materials	Classification temperature	Bulk density	Cold compressive strength	Permanent length changes	Thermal conductivity
			(°C)	(kg/m³)	(MPa)	(%)	(W/m.K)
LACfire 1500	Dense liquefied concrete	Mullite	1350	2210	80	-0.07	1.97
LACfire 1550/30	Combined refractory concrete	Mullite, SiC	1450	2400	90	-	2.35
LACfire 1800/20 SiC	Combined refractory concrete	Corundum, SiC	1600	2870	120	-0.19	3.22
LACfire 1800/80 SiC	Combined refractory concrete	Mullite, SiC	1600	2570	110	-0.12	3.22
LACfire AKU	Accumulation refractory concrete	Mullite	1500	-	-	-	-
KZB 2	Dense liquefied concrete	Mullite	1350	2230	82	-0.07	1.35
KZB 3	Combined refractory concrete	Mullite, SiC	1450	2350	105	-0.15	1.85
KZB 4	Combined refractory concrete	Corundum, SiC	1600	2890	118	-0.2	1.9
KZB 7	Insulating refractory concrete	Mullite	1100	1250	10	-0.1	0.6
KZB 8	Dense liquefied concrete	Mullite	1000	-	-	-	-
PZB 1	Industrial refractory concrete	Mullite	1500	2230	82	-0.07	1.35
PZB 2	Industrial refractory concrete	Mullite	1350	-	-	-	-
PZB 3	Industrial refractory concrete	Corundum, SiC	1500	2350	105	-0.15	1.85
PZB 4	Industrial refractory concrete	Corundum, SiC	1800	2890	115	-0.2	1.9
PZB 5	Industrial refractory concrete	SiC	1800	-	-	-	-
PZB 6	Industrial refractory concrete	Mullite	1200	1250	10	-0.1	0.6
PZB 7	Industrial refractory concrete	Mullite	1100	-	-	-	-
Cast ceramics	Refractory products	Aluminosilicates, SiC	1300	2300	-	-	-

The stated values have been measured in our laboratory and are for informational purposes only.
These cannot be used as accurate or guaranteed values.

PRODUCTION PLANTS

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