KALCOR A

Zirconium Corundum

Material data sheet

Material description in general

The material KALCOR A is a zirconium corundum, which has a high abrasion resistance and was developed for a very high temperature resistance and thermal shock resistance. KALCOR A is formed into tiles, shaped components and cylinders. This shape capability allows KALCOR A to be manufactures into many different components demanded by various industries.

Material properties

Feature	Unit	Data
Chemical composition	Wt.-% $Al_2O_3 + ZrO_2$	90 - 93
	Wt.-% SiO_2	5 - 8
Hardness	Vickers HV 1	1150
Density	g/cm³ lb/ft^3	≥ 3.3 ≥ 205.01
Open porosity	%	< 9
Thermal coefficient of expansion	K^{-1} (20 - 1000 °C) $°F^{-1}$ (68 – 1832 °F)	6.5×10^{-6} 3.61×10^{-6}
Thermal conductivity	W/mK (20 - 1000 °C) Btu inch/ft^{2}h (68 - 1832 °F)	4.2 29.14
Max. application temperature	°C °F	1300 2372
Max. thermal shock resistance	K/h °F/h	300 572
Wear resistance acc. ASTM C704-15	cm³ with 90°	≤ 1.5

Approximate figures are given for all technical data. They are based on assessment of tests on specific samples and cannot be considered as a guarantee for which Kalenborn would have to assume legal responsibility. Subject to technical changes and errors.

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Installation

- Cylinders or shaped components in cement mortar or special setting compounds
- Mechanical fixing is also possible

Advantages

- Very high abrasion resistance
- Very high temperature resistance
- Very high thermal shock resistance
- High chemical resistance

Applications from energy and the environment, cement and building materials, iron and steel, mining and other industries

centrifuges and driers
chain and screw conveyors
chutes and hoppers
cyclones
diverter
drying drums
immersion pipes
mixers
nozzles
pipes and bends
separators
separators, fans
skip collecting bins
skips and skip chutes
supply channels
venturis

Due to the manufacturing process, it is not possible to exclude small variations in the properties of the product. This affects tolerances in the size, outer appearance and surface finish. Included are some typical features of mineral/ceramic materials, such as spalling, porosity and hairline cracks, all of which can be present within the range of specified tolerances.