

ABRESIST

Fused Cast Basalt

Material data sheet (MDS)

General material description

ABRESIST is a mineral wear protection made from fused cast natural basalt. The material has an optimized structural hardness. It is characterized by outstanding chemical resistance. It is particularly suitable for applications in which the material to be conveyed mainly causes abrasive wear. The hard and smooth surfaces of ABRESIST also promote extraordinary sliding properties. ABRESIST is manufactured in the delivery forms of tiles, shaped components and cylinders. The KALIMPACT ABRESIST hard-rubber compound is recommended for high impact resistance. Prefabricated panels allow quick assembly.

Material properties

Feature	Unit	Data
Chemical composition	Wt.-% SiO ₂	43 - 48
	Wt.-% Al ₂ O ₃	12 - 15
	Wt.-% FeO ₃ + FeO	11 - 14
	Wt.-% CaO	9 - 13
	Wt.-% MgO	9 - 13
Hardness acc. DIN EN ISO 14705	Vickers HV1	770
Density	g/cm ³	≥ 2.85
	lb/ft ³	≥ 177.92
Open porosity	%	0
Thermal coefficient of expansion	K ⁻¹ (20 - 350 °C)	7x10 ⁻⁶
	°F ⁻¹ (68 - 662 °F)	3.88x10 ⁻⁶
Thermal conductivity	W/mK (20 - 300 °C)	2.2
	Btu inch/ft ² h (68 - 572 °F)	15.25
Max. application temperature	°C	400
	°F	752
Max. thermal shock resistance	K/h	70
	°F/h	126
Wear resistance acc. ASTM C704-15	cm ³ with 90°	≤ 3.7
	in ³	≤ 0.225
Wear resistance acc. DIN 52108	cm ³ with 50 cm ²	≤ 5.0
	in ³	< 0.305

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

- As fittings in cement mortar. In special cases, other laying materials can be used –
- e.g. KALFIX plastic mortar or water glass cement where higher temperatures are concerned
- Mechanical fixing (screwing or welding) is feasible as well
- KALIMPACT ABRESIST panels

Advantages

- High abrasion resistance
- Exceptional sliding, even with moist goods
- Outstanding chemical resistance
- No corrosion

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

ash pipelines	pipe bends
belt discharge chutes	pipes
bunkers	pneumatic backfill lines
channels	prilling tower bottoms
chutes	pulpers
circulating air separators	receivers
continious flow conveyors	screw conveyor troughs
cyclone	separators
dissolving tanks	setting basins
drying sections	shaft spirals
dust collection systems	sifters
dust collecting pipes	silos
fans	sinter troughs
fuel gas ducts	spiral chute for material transport
flumes	tailings lines
gravel release tunnels	tanks
hoppers of rotary dryers	thickeners
hydrocyclones	turbular chain conveyors
launders	turbo separators
mill scale flumes	vibration troughs
mixer troughs	washing drums

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 such as spalling, cavities, porosity and hairline cracks, all of which can be present within the range of specified tolerances.