

K-CAST

Monolithic Ceramic Lining System



Key Benefits

- Supplied in a dry powder form
- Can be cast, trowelled or spray applied
- Offers good abrasion resistance
- Offers constant performance at elevated temperatures

K-CAST is applied by trowel or by casting to provide a highly flexible solution to a wide variety of abrasion induced problems. The material offers excellent heat resistance as well as good impact and sliding induced abrasion resistance.

Manufacture

Our range of K-CAST BKR, BCR and CSR products are manufactured from mixing a dry blend of three main materials. This hardwearing material is attributed to the selection of fine angular grains of bauxite and silicon carbide aggregate, which are no greater than 5mm in size having been screened to ensure conformity of product. These materials are blended with both alumina sulphate cement and micro silica powder, which being a by product of the silicon processing industry, gives the product its ultra dense structure resulting in an extremely hard wearing compound. K-CAST is supplied in dry powder form in 25kg bags where mixing with controlled amount of water initiates a chemical reaction that after a strict mixing process results in a homogenous paste that can either be gravity cast into a mould or pattern, trowelled onto an expanded steel mesh substrate to the desired thickness using standard masonry tools or sprayed onto varying positions.

Application

There are many uses for our K-CAST range of materials, we however specialising in the fight against plant and component degradation use the product to enhance the life of capital equipment.

With its main characteristics being abrasion, heat and thermal shock resistance, the applications tend to lean towards plant and equipment that have all of these factors apparent. Equipment used to handle bulk solid materials in either pneumatic or hydraulic states of conveyance benefit from being protected with K-CAST systems.

Forms of supply

As the material is supplied in a powder form and can be applied by trowel or casting, then the only limit of supply is based upon the limit on complexity of manufacture of moulds and patterns. The only restriction on this process of manufacture is the minimum wall thickness recommended, with it being no less than 15mm to ensure structural integrity.

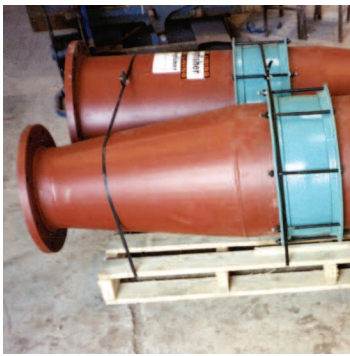
Installation

This material can either be applied by casting into a prepared mould, trowelling the paste onto a substrate or sprayed onto an expanded steel mesh attached by either mechanical fixings or a welded process. It can be supplied with either stainless, mild steel or fibre needles (dependant on maximum temperature of plant process to assist the bond strength of the different minerals used in its make up. Occasionally, the use of pneumatic vibrators or pokers are used to encourage flow in difficult patterns, which results in a blemish free substrate when the moulds or patterns are stripped down after the K-CAST has cured.

As with most wear resistant materials the success of the system often depends on the quality and accuracy of the installation. We recommend consultation takes place with one of our qualified engineers in order to assess the suitability of choosing our K-CAST material for particular applications. If need be Kingfisher can carry out the installation using its own fully trained work force or supervise your own employees.

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Typical list of applications

- Classifiers
- Cyclones
- Ducting
- Filters
- Gas scrubbers
- Pipework
- Separators

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Physical and Mechanical Properties

PARAMETERS	Unit	BKR	BCR	CSR
Density	g/cm ³	2.85	2.85	2.66
Max. particle size	mm	5	5	4
Wear resistance	DIN 52108	1.0m	0.25mm	0.1mm
Compressive strength after:				
7 days	Mpa	187	170	164
drying @ 110 C	Mpa	230	220	223
firing @ 600 C	Mpa	210	220	191
firing @ 1000 C	Mpa	141	110	121
Flexural strength after:				
7 days	Mpa	21	18	21
drying @ 110 C	Mpa	23	20	21
firing @ 600 C	Mpa	18	23	15
firing @ 1000 C	Mpa	13	9	15
Service temperature	°C	1200	1000	1000
Modulus of rupture prefired @ 1000 C/24 hrs	Mpa	16	13	19

Chemical Composition

Mineral Content	Approximate figures %		
	K-CAST BKR	K-CAST BCR	K-CAST CSR
Al ₂ O ₂	70-90	-	-
SiO ₂	5-15	15-25	5-15
SiC	-	50-70	50-80

The balance of the compositions is made up of the following minerals:- TiO₂, Fe₂O₃, CaO as a small percentage.

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