

HMA Greenbank has developed in-house techniques for ceramic lining of components which maximises the operating life of equipment.

Basalt

HMA Greenbank Cast Basalt has been well proven in a wide variety of industries as a cost effective long-lasting lining material. It is an ideal lining material used to extend operating life of equipment manufactured or lined with lower wearing materials such as steel, cast iron, rubber and polyurethane.

HMA Greenbank Cast Basalt offers extraordinary abrasion resistance and is resistant to most acids and alkalis.

The manufacture of Basalt lined pipework and equipment is a specialised process. HMA Greenbank has developed unique in-house techniques to overcome the issues associated with ceramic lined components, the result of which maximise the operating life of equipment. As a result, HMA Greenbank Cast Basalt has been widely adopted throughout industry as the leading product for abrasive slurry and pneumatic product transfer applications. The inherent properties of Basalt make it highly cost effective in areas requiring abrasion resistance.



Basalux 20/25

The Basalux lining technique is a combination of Basalt and Alumina and has been developed to increase bend wear life over that of full Basalt lined bends and at the same time provide a reduction in cost over that of full Alumina lined piping. This is achieved by applying the high wearing Alumina ceramic to the extrados of the bend and the Basalt ceramic to the intrados. This lining combination is only possible due to HMA Greenbank's unique lining process.



Basalt

PHYSICAL PROPERTIES

Properties of Basalt

Properties	Unit	Basalt
Specific mass	kgm ⁻³	3000
Volume mass	kgm ⁻³	2900-3000
Absorbtion capacity	mass %	0
Apparent capacity	volume %	0
True porosity	volume %	1 - 3
Compression strength	MPa	300
Bending strength	MPa	40
	20°C	
	500°C	-
	700°C	-
	900°C	-
	1100°C	-
Tension strength	MPa	10
Modulus of elasticity in tension (Youngs modulus)	GPa	110
Poisson ratio		0,23
Coefficient of linear thermal Expansivity 0-200°C	K ⁻¹ 10 ⁶	8
0-400°C	K ⁻¹ 10 ⁶	9
Thermal conductivity	Wm ⁻¹ K ⁻¹	1,9
	20C	
	200°C	1,9
	400°C	2
	600°C	2
	800°C	2,1
	1000°C	2,2
	1200°C	-
Specific heat	Jkg ⁻¹ K ⁻¹	840
Application temperature	°C	400
Thermal shock resistance	°C	100
Chemical resistance in 70% h2SO4	mass %	9
	In 1% NaOH	1,5
Insulation resistance	W . 10°	10
Mohs hardness	-	8
Vickers hardness	HV(MPa)	700 - 800
Abrasion resistance Din	cm ³ /50cm ²	max.5
Wear resistance EN 102	mm ³	max.110
Antisliding capability of tiles	planar	10-19standard 19-27 antislip

Applications:

Basalt can be cast and shaped into almost any shape and is well suited for the following applications

- Lining of piping for mineral slurries and pneumatic conveyed materials.
- Chute linings under screen.
- Cyclone linings.
- Scraper conveyors.
- Conical sumps
- Blast furnace bunkers
- Coal load out facilities, Ports and rail junctions
- Ash sluice linings