

# K-VIT

## Fully Vitrified Ceramic Lining Systems



### Key Benefits

- Relatively inexpensive
- Abrasion and corrosion resistant
- Enhanced material flow
- Quick and easy to install

**K-VIT is a vitreous ceramic material used in the form of tiles, and is ideally suited as a low-cost form of protection for plant suffering from sliding abrasion and erosion. K-VIT has good resistance to abrasion and corrosion with excellent flow promotion characteristics.**

### Manufacture

Our K-VIT ceramic tiles are manufactured from a controlled blend of natural minerals. The primary minerals used for the manufacture of our K-VIT tiles are alumina and silicate, which are mixed together along with other minerals to achieve a fine homogenous slurry. At the end of this process the sub micron slurry is injected into a preheated spray drier where the moisture content is eliminated and leaves a pure dry residue of prepared spray dried powder. In order for the powder to take shape, a blend of binders and waxes are added to the product to enable it to be pressed into the flat shape for tile production. The tile is then conveyed in what is known as the green state and subjected to a controlled firing process via a tunnel kiln, where the tiles are heated up to maximum firing temp of 950°C, sustained at that temperature for a period, and then cooled down, again at a controlled rate. This manufacturing process produces a flat tile with a good degree of resistance to sliding abrasion and corrosion, which in turn enhances the surface of the tile to produce a very low coefficient of friction.

### Application

Our K-VIT tiles are predominantly used to counter a degree of wear taking place in plant and equipment that is used to convey or store bulk solid materials. Due to its vitreous state it has an excellent resistance to water absorption, throughout the thickness of the tile. With its primary characteristics being wear and corrosion resistance as well as having a low coefficient of friction it offers industry an easily installed, inexpensive lining system, that will give a degree of protection to plant suffering from abrasion and erosion when conveying or storing bulk solids or by-products by mechanical or hydraulic means. With a hardness rating of +6 on the MOHS harness scale and able to withstand operating temperatures in excess of 150°C, K-VIT is ideally suited to counter the problems associated with small to medium sized solids and minerals.

### Forms of supply

K-VIT is produced as a flat tile ranging in size from 150mm sq to 300mm sq, in thicknesses of 9, 12 and 14mm.

### Installation

The majority of installations are carried out using a range of adhesives with differing characteristics depending on the application. Kingfisher can supply a full range of adhesives, dependant upon the plant application.

As with most wear resistant materials the success of the systems 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-VIT 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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### Physical and Mechanical Properties

PARAMETERS	UNIT	Value
Density	g/cm	2.2
Porosity	EN 99	0%
Bending strength	EN 100	27N/mm <sup>2</sup>
Hardness	MOHS	+6
Deep scratch resistance	EN 102	205mm <sup>3</sup>
Thermal linear expansion	EN 103	9
Maximum service temp	°C	150
Breaking load		
@9mm thk	N	2000
@12mm thk	N	4000
@14mm thk	N	6000

### Chemical Composition

MINERAL CONTENT	APPROXIMATE FIGURES %
SiO <sub>2</sub>	70.1
Al <sub>2</sub> O <sub>3</sub>	21.5
K <sub>2</sub> O	2.6
Na <sub>2</sub> O	2.2
Fe <sub>2</sub> O <sub>3</sub>	0.8
TiO <sub>2</sub>	0.7
CaO	0.3
MgO	0.2
SO <sub>3</sub>	0.1

SIZE	VARIATION TO EN98
Length and width	+/- 0.6%
Thickness	+/- 5%
Warpage of edge	+/- 0.5%
Wedging	+/- 0.6%
Flatness	+/- 0.5%

### Typical list of applications

- Bunkers
- Chutes
- Flumes
- Hoppers
- Underpans
- Silos
- Tanks



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