

## K and TJM Insulating Firebricks

### Description

Thermal Ceramics produces high temperature insulating firebricks by using advanced production technology. Insulating firebricks are made from high purity refractory clays, with graduated additions of alumina for the higher temperature products, and a carefully graded organic filler which burns out during manufacture to give a uniform, controlled pore structure.

### Features

#### • Low thermal conductivity

Gives good thermal insulation, enabling the use of thin walled constructions.

#### • Low heat storage

Due to their light weight and low thermal conductivity, bricks absorb minimal heat, giving significant energy savings in cyclically operated kilns.

#### • Purity

The very low iron and alkali flux content confers good refractoriness and the high alumina content contributes to their stability in reducing atmosphere.

#### • High hot compressive strength

#### • Accurate dimensions

Enable the bricks to be laid more quickly, with thin, uniform joints, allowing the construction of strong and stable structures.

#### • Large dimensions

They can be produced in large dimensions such as 230x610x64/76 and 250x640x64 mm as well.

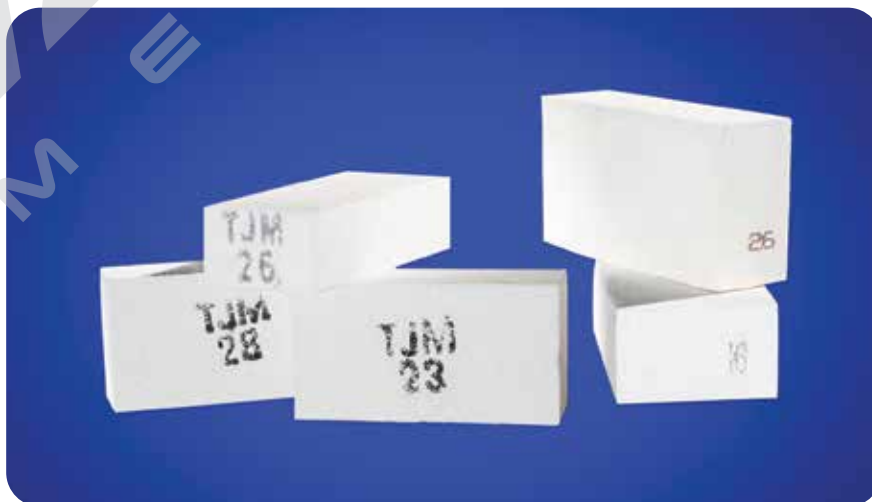


#### • Purpose-designed packaging

Appropriate packaging ensures safe transport and facilitates on-site handling of the bricks.

### Applications

- Back-up insulation for carbon baking furnaces.
- Back-up insulation for aluminium electrolytic cells.
- Ceramic, hobby and industrial kilns.
- Back-up insulation for blast furnaces.
- Insulation for reheating furnaces.
- Atmosphere controlled furnaces.
- Sidewalls of the ethylene furnaces.
- Door and chimney systems of kilns.



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Main Properties	K-23	TJM-23	K-25	TJM-26	K-26	TJM-28
Classification Temperature, °C	1260	1260	1370	1430	1430	1540
Density, kg/m <sup>3</sup> (ASTM C-134)	480-576	500	593-656	800	640-720	900
Cold Crushing Strength, MPa (ASTM C-133)	1,0	1,0	1,38	2,0	1,55	2,5
Modulus of Rupture, MPa (ASTM C-133)	0,79	0,70	1,00	1,80	1,07	1,80
Permanent Linear Change, % (ASTM C-210) (After 24 hours soaking at temperatures)						
1230 °C	0 to -0,1	-0,2	-	-	-	-
1343 °C	-	-	-0,3	-	-	-
1400 °C	-	-	-	-0,5	-0,8	-
1510 °C	-	-	-	-	-	-1,0
High Temperature Resistance Deformation after 90 minutes, % (ASTM C-16)						
0.034 MPa at 1100 °C	0	0,1	0	-	-	-
0.069 MPa at 1204 °C	0,3	-	0,1	-	0,2	-
0.069 MPa at 1260 °C	-	-	-	0,3	-	-
0.069 MPa at 1320 °C	-	-	-	-	-	0,2
Thermal Conductivity, W/m.K (ASTM C-182)						
200 °C	-	0,15	-	0,28	-	0,32
260 °C	0,13	-	0,15	-	0,17	-
400 °C	-	0,18	-	0,29	-	0,33
538 °C	0,15	-	0,18	-	0,19	-
600 °C	-	0,22	-	0,32	-	0,34
800 °C	-	0,27	-	0,35	-	0,37
815 °C	0,19	-	0,20	-	0,22	-
1000 °C	-	0,32	-	0,39	-	0,41
1093 °C	0,23	-	0,22	-	0,25	-
1200 °C	-	-	-	0,43	-	0,46
1371 °C	-	-	-	-	0,28	-
Chemical Composition, %						
Al <sub>2</sub> O <sub>3</sub>	38,0	45,0	46,0	55,0	48,0	64,0
SiO <sub>2</sub>	45,0	48,0	37,5	41,0	37,5	32,0
Fe <sub>2</sub> O <sub>3</sub>	0,3	1,0	0,3	0,9	0,3	0,7
TiO <sub>2</sub>	1,6	-	1,4	-	1,2	-
CaO	15,0	-	14,0	-	13,0	-
MgO	0,1	-	0,1	-	0,1	-
Na <sub>2</sub> O+K <sub>2</sub> O	0,5	1,2	0,4	0,9	0,3	0,8

The values given herein are typical average values obtained in accordance with standard test methods and subject to normal manufacturing variations. They are supplied as technical data and may change without notice. Contact our company to obtain detailed information.