

## TECHNICAL DATA SHEET

### Insulating Firebricks

**DESCRIPTION:**

Insulating Firebricks, also known as soft bricks or IFB, are used in high temperature applications ranging from 2,000°F (1,093°C) to 3,200°F (1,760°C). The bricks are manufactured from high purity refractory clays and other ceramic raw materials according to international standards, and are suitable to operate in various temperatures and atmospheres up to 3000°F. IFB bricks do contain a carefully graded organic filler which is burned out during the manufacturing process to provide a uniform controlled pore structure. This high porous rate provides excellent insulating properties while contributing to the bricks lightweight.



**Benefits**

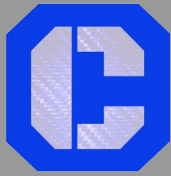
- High purity and superior insulating values
- Excellent strength at ambient and elevated temperatures
- High compression and cold crushing strength
- Low thermal conductivity
- Precise dimensions and machining
- Lightweight and energy-efficient
- Lower heat storage than denser refractories
- Extremely low levels of iron and other impurities
- Quick and economical heating to operating temperatures

**Typical Applications**

- Lining Kilns
- Insulating Ovens, Furnaces, and Flues
- Fireplaces and Fireboxes
- Glass and Ceramic industries
- Electrolytic Aluminum Industries
- Iron & Steel Industries
- Power Generation Industries
- Non-Ferrous Metals industries

### Technical Specifications Board

Chemical Composition (%)					
Chemical Contents	IN-23	IN-26	IN-28	IN-30	IN-32
Al <sub>2</sub> O <sub>3</sub>	45	51	64	72	78.3
SiO <sub>2</sub>	50	43	33	26	20.7
Fe <sub>2</sub> O <sub>3</sub>	0.9	0.8	0.7	0.5	0.2
TiO <sub>2</sub>	1.2	1.3	0.9	0.5	0.5
CaO & MgO	1.5	1.5	1.0	0.3	0.2
Na <sub>2</sub> O & K <sub>2</sub> O	0.4	0.4	0.4	0.2	0.1



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Typical Physical Properties						
Type	UNIT	IN-23	IN-26	IN-28	IN-30	IN-32
Classification Temperature ASTM C 155	°F °C	2300°F 1260°C	2600°F 1427°C	2800°F 1538°C	3000°F 1649°C	3200°F 1760°C
Density ASTM C 134	lb/ft <sup>3</sup> kg/m <sup>3</sup>	39 618	50 801	55 881	65 1036	75 1201
Modulus of Rupture ASTM C 133	lb/in <sup>2</sup> MPa	124 0.85	247 1.70	290 2.0	450 3.10	300 2.1
Cold Crushing Strength ASTM C 210	lb/in <sup>2</sup> MPa	174 1.20	377 2.60	435 3.00	609 4.20	450 3.1

Percent Linear Change 24hrs. @ Soaking Temp. (ASTM C 210)					
Type	IN-23	IN-26	IN-28	IN-30	IN-32
2250°F (1232°C)	0%	-	-	-	-
2550°F (1399 °C)	-	- 0.4%	-	-	-
2750°F (1510 °C)	-	-	- 0.7%	-	-
2950°F (1621 °C)	-	-	-	- 0.7%	-
3150°F (1732 °C)	-	-	-	-	- 0.4%

Thermal Conductivity w/m-k (ASTM C 182)					
Type	IN-23	IN-26	IN-28	IN-30	IN-32
500°F (260°C)	1.0 (0.14)	1.6 (0.23)	2.3 (0.33)	2.8 (0.40)	3.9 (0.56)
1000°F (538 °C)	1.3 (0.19)	1.9 (0.27)	2.4 (0.35)	2.9 (0.42)	4.1 (0.59)
1500°F (816 °C)	1.6 (0.23)	2.2 (0.32)	2.6 (0.37)	3.1 (0.45)	4.2 (0.61)
2000°F (1093 °C)	1.8 (0.26)	2.6 (0.37)	2.7 (0.39)	3.3 (0.48)	4.3 (0.62)