

# TJM<sup>®</sup> Bubble Alumina Insulating Firebrick Series

## Product Data Sheet



### Product Description

The TJM Bubble Alumina Insulating Firebrick (IFB) series are industry leaders in applications where the ability to operate in environments with a classification temperature up to 1800°C (3272°F) is critical.

TJM Bubble Alumina IFB Series are specially manufactured using high-quality raw materials. The bricks are widely used in lithium-ion battery anode and cathode kilns, speciality glass and ceramic kilns and various high-temperature kilns.

Each grade is formulated to meet specific thermal and physical requirements.

Our IFB range - JM, K, and TJM - delivers significant energy savings for many markets, and our global manufacturing footprint enables Morgan to meet your regional and global application demands.

### Features

- High hot load deformation resistance
- High hot compressive strength
- Good resistance to corrosion.
- High purity
- High stability in complex chemical atmospheres at high temperatures
- Tight dimensional tolerances
- Large bricks and specialty shapes to reduce joints
- Purpose-designed packaging protects bricks in transit and facilitates on-site handling

### Applications

- Lithium-ion battery anode and cathode kilns
- Petrochemical heaters, flues, refining vessels and reactor chambers
- Ceramic industry
- Glass industry
- Hot Face and Backup insulation in industrial furnaces

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Properties	TJM Ba90	TJM Ba95	TJM Ba99	TJM Ba99A
Classification Temperature, °C (°F)	1760 (3200)	1760 (3200)	1800 (3300)	1800 (3300)
Brick markings	TJM-Ba90	TJM-Ba95	TJM-Ba99	TJM-Ba99A
Density, kg/m <sup>3</sup> (pcf), ASTM C134	1400 (87.4)	1400 (87.4)	1400 (87.4)	1400 (87.4)
Modulus of rupture, MPa (psi), ASTM C133	6 (870)	4.5 (652.5)	3.5 (507.5)	3.5 (507.5)
Cold Crushing strength, MPa (psi), ASTM C133	18 (2610)	15 (2175)	10 (1450)	10 (1450)
Reversible Linear Thermal Expansion, max. %	1.2	1.2	1.3	1.3
Linear Shrinkage, % after 24 hours soaking, ASTM C210				
5 hours, 1600°C (2912°F)	-0.3	-0.3	-0.2	-0.2
Chemical Analysis, %				
Alumina, Al <sub>2</sub> O <sub>3</sub>	92	97	99	99.2
Silica, SiO <sub>2</sub>	7	2	0.3	0.2
Iron Oxide, Fe <sub>2</sub> O <sub>3</sub>	0.1	0.1	0.1	0.1
Titania, TiO <sub>2</sub>	0.2	0.1	0.1	0.1
Lime, CaO	0.1	-	tr	tr
Magnesia, MgO	0.1	0.1	tr	tr
Alkali as, Na <sub>2</sub> O + K <sub>2</sub> O	0.3	0.2	0.2	0.2
Thermal Conductivity, W/m·K, ASTM C-182				
200°C	0.70	0.70	0.70	0.70
400°C	0.75	0.75	0.75	0.75
600°C	0.80	0.80	0.80	0.80
800°C	0.90	0.90	0.90	0.90
1000°C	0.90	0.90	0.90	0.90
Thermal Conductivity, BTU·in/hr·ft <sup>2</sup> ·°F, ASTM C-182				
392°F	4.86	4.86	4.86	4.86
752°F	5.20	5.20	5.20	5.20
1112°F	5.55	5.55	5.55	5.55
1472°F	6.24	6.24	6.24	6.24
1832°F	6.24	6.24	6.24	6.24

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product, and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials.