

Data sheet

ENGLISH

IFB Insulation Range: Temperatures 1350 - 1650°C (2450 - 3000°F)

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Description

The Insulation Range of IFB for applications where temperatures are 1350°C - 1650°C (2450°F - 3000°F).

The IFB range is manufactured via cast (K®) and slinger (JM™) processes, is a market leader in applications such as Petrochemical and Ceramics where the ability to operate in environments above 1000°C (1800°F) is critical. The range also provides low thermal conductivity due its unique manufacturing process.

Our IFBs deliver energy savings for multiple markets and our global manufacturing footprint enables Morgan to meet your regional and global application demands.

Type

Insulating firebricks.

Classification temperature

- 1350°C (2450°F)
- 1370°C (2500°F)
- 1430°C (2600°F)
- 1540°C (2800°F)
- 1650°C (3000°F)

Maximum continuous use temperature

The maximum continuous use temperature depends on the application. Please contact your local Morgan Advanced Materials representative for technical advice and guidance.

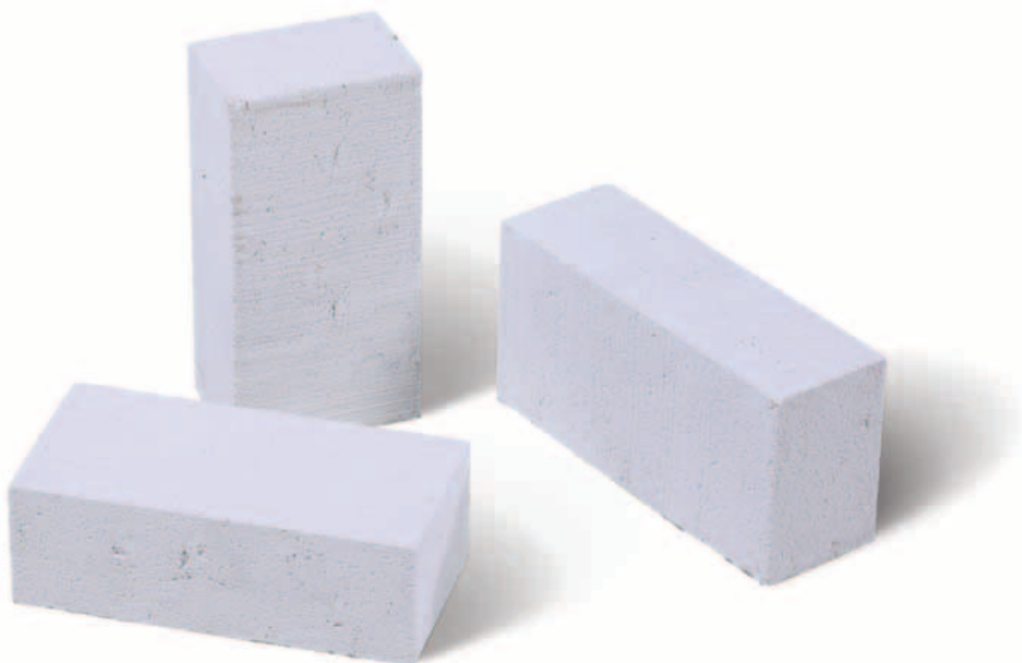
Features:

- Produced mainly by slinger process, our IFB's have stronger mechanical properties while maintaining some of the lowest thermal conductivity on the market
- The light weight and low thermal conductivity reduce heat absorption, producing significant energy savings and reducing emissions
- Low iron and alkali flux content gives high refractoriness under load in operating conditions
- Available in multiple sizes, up to 700 mm (27½") in length, which can be machined into special shapes or installed, reducing the need for multiple sections and joints
- Low heat storage
- High levels of purity due to premium quality raw material
- High hot compressive strength
- A comprehensive range of mortars is available to enable long last joints with superior performance

Typical Applications

Hot face refractory lining or as back-up insulation in:

- Aluminium (anode bake furnaces, primary electrolytic cells, holding and melting furnaces and secondary re-melt furnaces)
- Petrochemical (kilns, flues, refining vessels and heaters and reactor chambers)
- Iron and steel industry (heat treatment and galvanising)
- Coke and iron making (blast furnaces, hot blast stoves, hot blast and bustle main)
- Hobby and laboratory kilns
- Ceramic industry (including kilns for domestic use)
- Lime and cement kilns
- Glass industry



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Metric and Imperial information

IFB Insulation Range: Temperatures 1350 - 1650°C (2450 - 3000°F)

	JM™25	K®25	K26	JM26	JM28	JM30
ISO 2245 Classification	-	-	-	I40 0.8L	I50 0.9L	I60 1.0L
Manufacturing Method	Slinger	Cast	Cast	Slinger	Slinger	Slinger
Manufacturing Location	EU	NA	NA	EU	EU	EU
Product Identification - printed on brick	25	25	26	26	28	30
Physical Properties						
Classification Temperature, °C (°F)	1350 (2450)	1370 (2500)	1430 (2600)	1430 (2600)	1540 (2800)	1650 (3000)
Density, kg/m ³ (pcf), ASTM C-134	770 (48)	617 (38.5)	617 (38.5)	800 (50)	890 (55.5)	1020 (64)
Modulus of Rupture, MPa (psi), ASTM C-133	1 (145)	0.95 (138)	0.9 (130.5)	1.5 (217.5)	1.8 (261)	2 (290)
Cold Crushing Strength, MPa (psi), ASTM C-133	1.3 (188.5)	1.3 (188.5)	1.3 (188.5)	1.6 (232)	2.1 (304.5)	2.3 (334)
Permanent Linear Shrinkage, % after 24 hrs Soaking (ASTM C-210)						
@ 1290°C (2354°F)	-0.2	-	-	-	-	-
@ 1350°C (2462°F)	-	-0.3	-	-	-	-
@ 1400°C (2552°F)	-	-	-0.8	-0.2	-	-
@ 1510°C (2750°F)	-	-	-	-	-0.4	-
@ 1620°C (2948°F)	-	-	-	-	-	-0.6
Reversible Linear Expansion, max. %	0.55	0.8	0.7	0.7	0.8	0.8
Deformation under hot load, % after 90 min. (ASTM C-16 JM brick tested according to ISO 3187)						
1200°C @ 0.069 Mpa (2192°F @ 10 psi)	-	0.2	0.2	-	-	-
1260°C @ 0.069 Mpa (2300°F @ 10 psi)	-	-	-	0.2	0.1	-
1320°C @ 0.069 Mpa (2408°F @ 10 psi)	-	-	-	-	0.2	0.1
1370°C @ 0.069 Mpa (2498°F @ 10 psi)	-	-	-	-	-	0.5
Specific Heat Capacity, kJ/kg·K @ 1000°C (1832°F)	-	1.07	1.07	1.10	1.10	1.10
CO Attack (popouts after 200 hrs), ASTM C-288	-	-	-	-	Class A	Class A
Thermal Conductivity, W/m·K (BTU·in/hr·ft²·°F), ASTM C-182						
260°C (500°F)	-	0.15 (1.04)	0.16 (1.11)	-	-	-
400°C (752°F)	0.24 (1.67)	-	-	0.25 (1.73)	0.3 (2.08)	0.38 (2.64)
540°C (1004°F)	-	0.18 (1.25)	0.19 (1.32)	-	-	-
600°C (1112°F)	0.25 (1.73)	-	-	0.27 (1.87)	0.32 (2.22)	0.39 (2.71)
800°C (1472°F)	0.27 (1.87)	-	-	0.3 (2.08)	0.34 (2.36)	0.4 (2.78)
815°C (1500°F)	-	0.2 (1.39)	0.21 (1.46)	-	-	-
1000°C (1832°F)	0.3 (2.08)	-	-	0.33 (2.29)	0.36 (2.50)	0.41 (2.84)
1100°C (2012°F)	-	0.22 (1.53)	0.24 (1.67)	-	-	-
1200°C (2192°F)	-	-	-	0.35 (2.43)	0.38 (2.64)	0.42 (2.91)
1370°C (2500°F)	-	-	0.27 (1.87)	-	-	-
Chemical Composition, %						
Al ₂ O ₃	58	47	48	58	67.1	73.4
SiO ₂	38	38	36	38.8	30.0	24.6
Fe ₂ O ₃	0.9	0.2	0.3	0.8	0.60	0.50
TiO ₂	0.4	1.4	1.2	0.3	0.5	0.50
CaO	0.2	13.5	12.3	0.1	0.1	Trace
MgO + Na ₂ O + K ₂ O	1.8	0.5	0.4	1.9	1.0	0.90

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