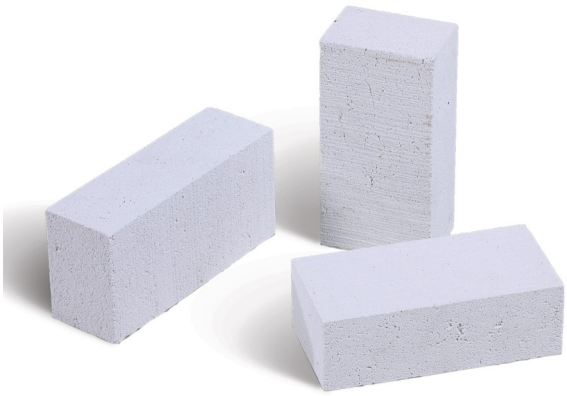
IFB Insulation 1350 to 1650°C

Product Data Sheet



Product Description

The Insulation Range of IFB for applications where temperatures are 1350°C - 1650°C (2450°F - 3000°F) includes JM™25, K®25, K26, JM26, JM28, JM30 and JM30 HA.

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.

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

Applications as hot face refractory or 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

www.morganthermalceramics.com
Email: marketing.tc@morganplc.com
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Product Data Sheet

	JM™25	K®25	K®26	JM™26	JM™28	JM™30	JM™30 HA
ISO 2245 Classification	-	-	-	140 0.8L	150 0.9L	160 1.0L	-
Manufacturing Method	Slinger	Cast	Cast	Slinger	Slinger	Slinger	Slinger
Manufacturing Location	Europe	Americas	Americas	Europe	Europe	Europe	Europe
Product Identification - printed on brick	25	25	26	26	28	30	30 HA
Classification Temperature, °C (°F)	1350 (2450)	1370 (2500)	1430 (2600)	1430 (2600)	1540 (2800)	1650 (3000)	1650 (3000)
Density, kg/m^3 (pcf), ASTM C-134	770 (48.0)	617 (38.5)	617 (38.5)	800 (49.9)	890 (55.5)	1020 (63.6)	1250 (78.0)
Modulus of Rupture, MPa (psi), ASTM C-133	1 (145)	0.95 (137.7)	0.9 (130.5)	1.5 (217.5)	1.8 (261)	2 (290)	2.1 (304.6)
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 (333.5)	3.2 (464.1)
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	-	-
@ 1570°C (2858°F)	-	-	-	-	-	-	-
@ 1620°C (2948°F)	-	-	-	-	-	-0.6	±0.1
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	-
Thermal Conductivity, W/m•K (BTU•in/hr•ft^2•°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)	0.47 (3.26)
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)	0.48 (3.33)
800°C (1472°F)	0.27 (1.87)	-	-	0.3 (2.08)	0.34 (2.36)	0.4 (2.78)	0.49 (3.40)
815°C (1499°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)	0.5 (3.47)
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)	0.51 (3.54)
1370°C (2498°F)	-	-	0.27 (1.87)	-	-	-	
Specific Heat Capacity, kJ/kg•K @ 1000°C (1832°F)		1.07	1.07	1.10	1.10	1.10	-
Chemical Composition, %							
Al_2O_3	58	47	48	58	67.1	73.4	79.7
SiO_2	38	38	36	38.8	30.0	24.6	18.0
Fe_2O_3	0.9	0.2	0.3	0.8	0.60	0.50	0.40
TiO_2	0.4	1.4	1.2	0.3	0.5	0.50	0.3
CaO	0.2	13.5	12.3	0.1	0.1	Trace	0.1
MgO + Na_2O + K_2O	1.8	0.5	0.4	1.9	1.0	0.90	0.7
CO Attack (popouts after 200 hrs), ASTM C-288	-	-	-	-	Class A	Class A	-

Whilst the values and application information in this datasheet are typical, they 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 - Thermal Ceramics.

www.morganthermalceramics.com
Email: marketing.tc@morganplc.com
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