

Data sheet

ENGLISH

# IFB Structural Range: Temperatures 1500 - 1800°C (2730 - 3250°F)

Metric and Imperial information - Page 2

## Description

The Structural Range of IFB for applications where temperatures are 1500°C - 1800°C (2730°F - 3250°F).

These products offer superior performance in load bearing applications and in conditions where abrasion from mechanical and chemical abuse or flow of hot gases is severe.

Our Structural Range of IFB deliver big energy savings for many markets and our global manufacturing footprint enables Morgan to meet your regional and global application demands.

## Type

Insulating firebricks

## Classification temperature

- 1500°C (2730°F)
- 1540°C (2800°F)
- 1650°C (3000°F)
- 1800°C (3250°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.

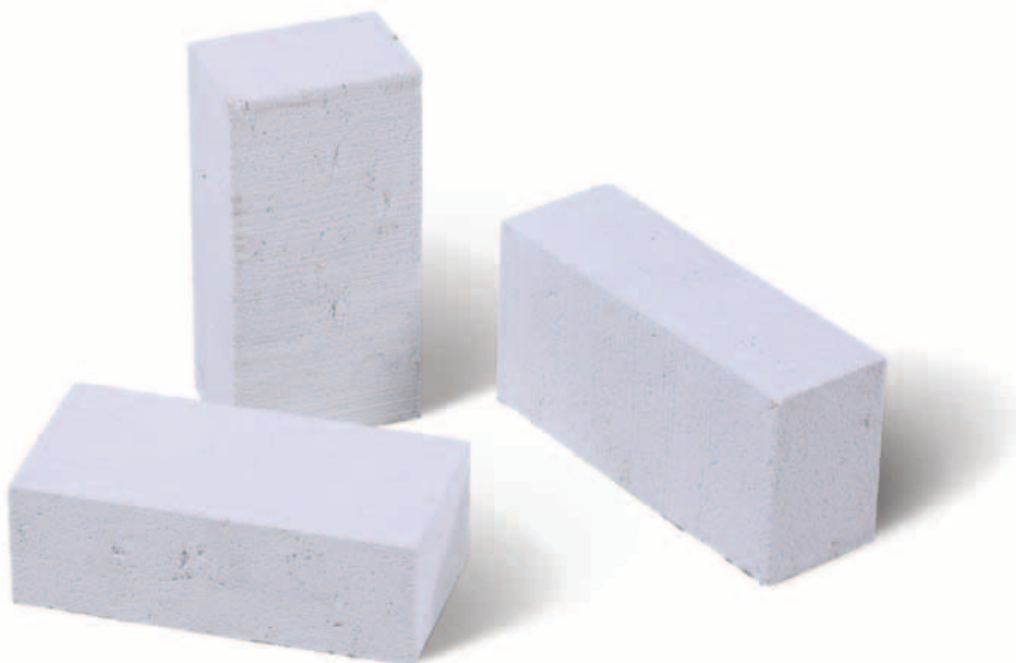
## Features:

- Different production processes are in place with a common goal of delivering a product which provides both mechanical and thermal properties
- The light weight and low thermal conductivity reduce heat absorption, producing significant energy savings and emissions
- Low iron and alkali flux content gives high refractoriness under load in operating conditions
- Available in multiple sizes, up to 700mm (27½") in length and 100mm (4") thickness, which can be machined into special shapes or installed, reducing the need for multiple sections and joints
- 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:

- 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)
- Ceramic industry (including kilns for domestic use)
- Glass industry
- Power generation



Data sheet

Metric and Imperial information

# IFB Structural Range: Temperatures 1500 - 1800°C (2730 - 3250°F)

	TJM™B7	TJM28	TJM30	TJM-Ba90	Insalcor®
ISO 2245 Classification	-	-	-	180 I.3L	180 I.3L
Manufacturing Method	Extrusion	Extrusion	Extrusion	Pressing	Pressing
Manufacturing Location	Asia	Asia	Asia	Asia	NA
<b>Physical Properties</b>					
Classification Temperature, °C (°F)	1500 (2750)	1540 (2800)	1650 (3000)	1790 (3250)	1790 (3250)
Density, kg/m <sup>3</sup> (pcf), ASTM C-134	900 (56.16)	900(56.16)	1100 (68.64)	1314 (82)	1314 (82)
Modulus of Rupture, MPa (psi), ASTM C-133	2.5 (362.5)	1.8 (261)	2 (290)	2.4 (350)	2.4 (350)
Cold Crushing Strength, MPa (psi), ASTM C-133	3.5 (507.5)	2.5 (362.5)	3 (435)	6.9 (1000)	6.9 (1000)
Permanent Linear Shrinkage, (ASTM C-210) % after 24 hrs Soaking					
@ 1500°C (2732°F)	-0.5	-	-	-	-
@ 1510°C (2750°F)	-	-0.7	-	-	-
@ 1570°C (2858°F)	-	-	-1	-	-
@ 1730°C (3146°F)	-	-	-	0.4	0.4
Reversible Linear Expansion, max. %	0.8	0.8	0.9	1.2	1.2
Deformation under hot load, % after 90 min. (ASTM C-16) (JM brick tested according to ISO 3187)					
1320°C @ 0.069 Mpa (2408°F @ 10 psi)	0.2	0.2	0.1	-	-
1450°C @ 0.069 Mpa (2642°F @ 10 psi)	-	-	-	0.1	0.1
<b>Thermal Conductivity, W/m•K (BTU•in/hr•ft<sup>2</sup>•°F), ASTM C-182</b>					
200°C (392°F)	0.32 (2.22)	0.32 (2.22)	0.36 (2.5)	-	-
260°C (500°F)	-	-	-	0.79 (5.48)	0.79 (5.48)
400°C (752°F)	0.33 (2.29)	0.33 (2.29)	0.38 (2.64)	-	-
540°C (1004°F)	-	-	-	0.8 (5.55)	0.8 (5.55)
600°C (1112°F)	0.34 (2.36)	0.34 (2.36)	0.41 (2.84)	-	-
800°C (1472°F)	0.38 (2.64)	0.37 (2.57)	0.43 (2.98)	-	-
815°C (1500°F)	-	-	-	0.91 (6.31)	0.91 (6.31)
1000°C (1832°F)	0.42 (2.91)	0.41 (2.84)	0.45 (3.12)	-	-
1100°C (2012°F)	-	-	-	1.09 (7.56)	1.09 (7.56)
1200°C (2192°F)	-	0.46 (3.19)	0.48 (3.33)	-	-
1370°C (2500°F)	-	-	-	1.33 (9.23)	1.33 (9.23)
<b>Chemical Composition, %</b>					
Al <sub>2</sub> O <sub>3</sub>	65	65	73	90	77
SiO <sub>2</sub>	32	32	25	9	21
Fe <sub>2</sub> O <sub>3</sub>	0.8	0.7	0.6	0.3	0.4
TiO <sub>2</sub>	-	0.4	0.2	0.2	0.6
CaO	-	0.2	0.1	0.1	0.1
MgO	-	0.1	0.1	0.1	-
MgO + Na <sub>2</sub> O + K <sub>2</sub> O	-	-	-	-	0.4
Na <sub>2</sub> O + K <sub>2</sub> O	0.8	0.8	0.7	0.3	-

Contact

**Europe:**

Telephone:  
+44 (0) 151 334 4030

E-mail:  
marketing.tc@morganplc.com

**North America:**

Telephone:  
+1 (706) 796 4200

E-mail:  
northamerica.tc@morganplc.com

**South America:**

Telephone:  
+54 (11) 4373 4439

E-mail:  
marketing.tc@morganplc.com

**Asia:**

Telephone:  
+65 6595 0000

E-mail:  
asia.mc@morganplc.com

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.

Morgan Advanced Materials plc Registered in England & Wales at Quadrant, 55-57 High Street, Windsor, Berkshire SL4 1LP UK Company No. 286773