



BNZ Materials, Inc.

BNZ s.a. Calor Series IFB

BNZ s.a. Grades

RI 23 High melting point; used for glass furnace insulation as well as general furnace usage.

RI 23 B is a higher cold crush strength version of RI 23. Used for anode baking furnaces worldwide.

Calor A is the traditional Grade 25 IFB for furnace and kiln applications.

Calor B is a stronger, denser version of the Calor A.

Calor CA is a high strength version of Calor A, used extensively for aluminum reduction cells worldwide with proven resistance to aluminum, metal and

associated process flourides. Also used for general insulation as a high cold crush strength 25 grade insulation.

Calor 26 and 26 B are general purpose 26 grade insulations, suitable for anode baking furnaces and glass melting tank unsulation.

Typical Data

BNZ s.a. GRADES

Properties		RI 23	RI 23 B	Calor A	Calor B	Calor CA	Calor 26	Calor 26 B
Classification Group								
ISO 2245		130-0.65-L	130-0.7-L	135-0.8-L	135-0.9-L	135-1.1-L	140-08-L	140-0.9-L
ASTM C 155		23	23				26	
Classification Temperature	°F	2372	2372	2462	2462	2462	2606	2606
	°C	1300	1300	1350	1350	1350	1430	1430
Density, Avg.	lb/ft ³	41	44	51	56	69	51	56
ASTM C 134	kg/m ³	650	700	820	900	1100	820	900
Cold Crushing Strength	lb/ft ²	190	290	360	580	780/1100	320	580
ASTM C 133	MPa	1.3	2.0	2.5	4.0	5.4/8.2 Flat/Edge	2.2	4.0
Permanent Linear Change	%							
ASTM C 210								
24 hrs at soaking temp: °F (°C)								
2372 (1300)		-0.5	-0.5	—	—	—	—	—
2462 (1350)		—	—	-0.5	-0.5	-0.5	—	—
2552 (1400)		—	—	—	—	—	-0.5	-0.5
Reversible Linear Thermal Expansion	%							
at 0–1800°F (20–1000°C)		0.5	0.5	0.5	0.5	0.5	0.6	0.6
Thermal Conductivity	Btu-in/ft ² , hr, °F							
ASTM C 182	(W/mk)							
Mean temperature, °F (°C)								
392		1.2	1.2	1.4	1.6	2.0	1.7	1.8
(200)		0.17	0.17	0.21	0.23	0.29	0.24	0.26
752		1.3	1.3	1.7	1.9	2.2	1.8	2.0
(400)		0.19	0.19	0.24	0.27	0.32	0.26	0.29
1112		1.5	1.6	1.9	2.1	2.5	2.0	2.2
(600)		0.22	0.23	0.28	0.30	0.36	0.29	0.32
1472		1.8	1.9	2.2	2.4	2.8	2.2	2.4
(800)		0.26	0.27	0.32	0.35	0.40	0.32	0.35
1832		2.1	2.2	2.6	2.8	3.1	2.5	2.7
(1000)		0.30	0.31	0.37	0.40	0.45	0.36	0.39
To convert Btu-in/ft ² , hr, °F to Kcal-m ² , hr, °C, multiply by 0.124.								
Chemical Analysis	%							
Alumina – Al ₂ O ₃		34.0	34.0	34.0	34.0	34.0	43.0	43.0
Silica – SiO ₂		57.0	57.0	57.0	57.0	57.0	50.0	50.0
Ferric Oxide – Fe ₂ O ₃		1.2	1.2	1.2	1.2	1.2	1.0	1.0
Dimensional Tolerances	in.	0.040	0.040	0.040	0.040	0.040	0.040	0.040
	mm	± 1	± 1	± 1	± 1	± 1	± 1	± 1

* ASTM C 113

All s.a. grades above are available in slab form up to 600 x 400 x 100 mm format.



BNZ Materials, Inc.

BNZ Materials manufactures, and is a worldwide supplier of a range of specialty industrial insulations. BNZ Insulating Fire Brick has been manufactured continuously at Zelienople, Pennsylvania for more than 60 years.

In addition to the Insulating Fire Brick product line, BNZ also manufactures many grades of Structural Insulations under the tradenames Marinite, Transite and CS85. These products are designed for use from ambient temperatures to 1800°F, in densities from 36 to 100 pcf, and will meet the demanding requirements of a variety of industries and their specific needs.

Contact BNZ for more information on these products and their applications.

Insulating Fire Brick Plant Location

Zelienople

191 Front Street
Zelienople, PA 16063
Phone: **724-452-8650**
800-955-8650
Fax: 724-452-1346

CS85™, Marinite® & Transite® Plant Location

Billerica

400 Iron Horse Industrial Park
North Billerica, MA 01862
Phone: 978-663-3401
800-888-0061
Fax: 978-663-2735

BNZ s.a.

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22210 Plémet
France
Phone: (33) 2 96 25 61 01
Fax: (33) 2 96 25 64 18

Corporate Headquarters

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6901 South Pierce Street
Suite 260
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Phone: 303-978-1199
800-999-0890
Fax: 303-978-0308

www.bnzmaterials.com

Warranty

BNZ Materials warrants that its products are manufactured in accordance with its applicable material specifications and are free from defects in workmanship and materials using BNZ's specifications as a standard. Every claim under this warranty shall be deemed waived unless in writing and received by BNZ within thirty (30) days of the date the defect was discovered and within one (1) year of the date of the shipment of the product.

BNZ MAKES NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, IN FACT OR IN LAW, INCLUDING WITHOUT LIMITATION, THE WARRANTY OF MERCHANTABILITY OR THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, OTHER THAN THE LIMITED WARRANTY SET FORTH ABOVE.

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It is expressly understood and agreed that the limit of BNZ's liability shall be the resupply of a like quantity of non-defective product and that BNZ shall have no such liability except where the damage or claim results solely from breach of BNZ's warranty.

IT IS ALSO AGREED THAT BNZ SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, OR OTHER DAMAGES FOR ANY ALLEGED NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY, OR ANY OTHER THEORY, OTHER THAN THE LIMITED LIABILITY SET FORTH ABOVE.