



## BNZ s.a.

### 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 fluorides. 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 insulation.

## Mattone refrattario isolante

| Valori tipici                                 |                      | RI 23      | RI 23 B   | Calor A   | Calor B   | Calor CA   | Calor 26  | Calor 26 B |
|---|----------------------|------------|-----------|-----------|-----------|------------|-----------|------------|
| <b>Classificazione</b>                        |                      |            |           |           |           |            |           |            |
| ISO 2245                                      |                      | 130-0.65-L | 130-0.7-L | 135-0.8-L | 135-0.9-L | 135-1.1-L  | 140-0.8-L | 140-0.9-L  |
| ASTM C 155                                    |                      | 23         | 23        |           |           |            | 26        |            |
| <b>Temperatura di classificazione</b>         |                      | °C         | 1300      | 1300      | 1350      | 1350       | 1430      | 1430       |
| <b>Densità</b>                                |                      |            |           |           |           |            |           |            |
| ASTM C 134                                    | kg/m <sup>3</sup>    | 650        | 700       | 820       | 900       | 1100       | 820       | 900        |
| <b>Resistenza alla compressione a freddo</b>  |                      |            |           |           |           |            |           |            |
| ASTM C 133                                    | MPa – flat<br>– edge | 1.3        | 2.0       | 2.5       | 4.0       | 5.4<br>8.2 | 2.2       | 4.0        |
| <b>Variazione lineare permanente</b>          |                      | %          |           |           |           |            |           |            |
| ASTM C 210                                    |                      |            |           |           |           |            |           |            |
| 24 ore alla Temperatura, °C                   |                      |            |           |           |           |            |           |            |
| 1300  |                      | -0.5       | -0.5      | —         | —         | —          | —         | —          |
| 1350  |                      | —          | —         | -0.5      | -0.5      | -0.5       | —         | —          |
| 1400  |                      | —          | —         | —         | —         | —          | -0.5      | -0.5       |
| <b>Dilatazione termica lineare</b>            |                      | %          |           |           |           |            |           |            |
| Reversibile 20–1000°C                         |                      | 0.5        | 0.5       | 0.5       | 0.5       | 0.5        | 0.6       | 0.6        |
| <b>Conducibilità termica</b>                  |                      |            |           |           |           |            |           |            |
| ASTM C 182                                    | W/mk                 |            |           |           |           |            |           |            |
| Temperatura media, °C                         |                      |            |           |           |           |            |           |            |
| 200   |                      | 0.17       | 0.17      | 0.21      | 0.23      | 0.29       | 0.24      | 0.26       |
| 400   |                      | 0.19       | 0.19      | 0.24      | 0.27      | 0.32       | 0.26      | 0.29       |
| 600   |                      | 0.22       | 0.23      | 0.28      | 0.30      | 0.36       | 0.29      | 0.32       |
| 800   |                      | 0.26       | 0.27      | 0.32      | 0.35      | 0.40       | 0.32      | 0.35       |
| 1000  |                      | 0.30       | 0.31      | 0.37      | 0.40      | 0.45       | 0.36      | 0.39       |
| 1200  |                      |            |           |           |           |            | 0.40      | 0.43       |
| <b>Analisi chimica</b>                        |                      | %          |           |           |           |            |           |            |
| Alumina – Al <sub>2</sub> O <sub>3</sub>      |                      | 34.0       | 34.0      | 34.0      | 34.0      | 34.0       | 43.0      | 43.0       |
| Silica – SiO <sub>2</sub>                     |                      | 57.0       | 57.0      | 57.0      | 57.0      | 57.0       | 50.0      | 50.0       |
| Ferric Oxide – Fe <sub>2</sub> O <sub>3</sub> |                      | 1.2        | 1.2       | 1.2       | 1.2       | 1.2        | 1.0       | 1.0        |
| <b>Tolleranze dimensionali</b>                |                      | mm         | ± 1       | ± 1       | ± 1       | ± 1        | ± 1       | ± 1        |

Le proprietà chimico-fisiche dei mattoni refrattari isolanti sopra riportate rappresentano valori ottenuti su formati standard secondo metodi di prova normalmente accettati e sono soggette alle normali variazioni di produzione. Queste informazioni sono fornite a titolo di servizio tecnico e possono essere cambiate senza preavviso. I valori riportati non devono essere quindi adoperati a scopo di specifica.



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 46 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.

Documento: CALOR  
Edizione: Mar-01  
Sostituisce: Jan-00

## 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.



## BNZ s.a.

### BNZ s.a.

#### Plémet, France

Les Landelles  
22210 Plémet  
France  
Phone: +33-2-96 25 61 01  
Fax: +33-2-96 25 64 18  
bnz.plemet@wanadoo.fr

### Insulating Fire Brick Plant Location

#### Zelienople

191 Front Street  
Zelienople, PA 16063 USA  
Phone: 001/724-452-8650  
001/800-955-8650  
Fax: 001/724-452-1346  
brick@bnzmaterials.com

### CS85,™ Marinite® & Transite® Plant Location

#### Billerica

400 Iron Horse Park  
North Billerica, MA 01862 USA  
Phone: 001/978-663-3401  
001/800-888-0061  
Fax: 001/978-663-2735  
board@bnzmaterials.com

### Corporate Headquarters

#### Denver

6901 South Pierce Street  
Suite 260  
Littleton, CO 80128 USA  
Phone: 001/303-978-1199  
001/800-999-0890  
Fax: 001/303-978-0308

info@bnzmaterials.com  
www.bnzmaterials.com

## Limitation of Liability

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.