

## BNZ Materials BNZ-23 Insulating Firebrick

Category : Ceramic , Oxide , Silicon Oxide

### Material Notes:

BNZ produces many types of Insulating Fire Brick (IFB) for use in applications from 2,000°F (1,093°C) to 3,200°F (1,760°C). Each type is formulated to meet specific thermal and physical requirements and after firing is machined to precise tolerances. Made from high purity refractory clays and other ceramic raw materials, these IFB contain a carefully graded organic filler which is burned out during manufacture to give a uniform controlled pore structure. Information provided by BNZ Materials Inc.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_BNZ-Materials-BNZ-23-Insulating-Firebrick.php](http://www.lookpolymers.com/polymer_BNZ-Materials-BNZ-23-Insulating-Firebrick.php)

| Physical Properties | Metric   | English   | Comments                                 |
|---------------------|--|---|--|
| Density             | 0.593 g/cc                                       | 0.0214 lb/in <sup>3</sup>                         | ASTM C134                                |
| Deformation         | 0.00 %<br>@Temperature 1093 °C,<br>Time 5400 sec | 0.00 %<br>@Temperature 1999 °F,<br>Time 1.50 hour | 10 psi load, Hot Load Strength; ASTM C16 |

| Mechanical Properties | Metric       | English   | Comments                       |
|-----------------------|--------------|-----------|--------------------------------|
| Modulus of Rupture    | 0.000700 GPa | 0.102 ksi | ASTM C133                      |
| Compressive Strength  | 0.900 MPa    | 131 psi   | Cold Crush Strength; ASTM C133 |

| Thermal Properties               | Metric   | English  | Comments                      |
|----------------------------------|--|--|-------------------------------|
| CTE, linear                      | 5.60 μm/m-°C<br>@Temperature 20.0 -<br>1093 °C | 3.11 μin/in-°F<br>@Temperature 68.0 -<br>1999 °F           |                               |
| Thermal Conductivity             | 0.140 W/m-K<br>@Temperature 260 °C             | 0.972 BTU-in/hr-ft <sup>2</sup> -°F<br>@Temperature 500 °F | ASTM C182                     |
|                                  | 0.190 W/m-K<br>@Temperature 538 °C             | 1.32 BTU-in/hr-ft <sup>2</sup> -°F<br>@Temperature 1000 °F | ASTM C182                     |
|                                  | 0.230 W/m-K<br>@Temperature 816 °C             | 1.60 BTU-in/hr-ft <sup>2</sup> -°F<br>@Temperature 1500 °F | ASTM C182                     |
|                                  | 0.260 W/m-K<br>@Temperature 1093 °C            | 1.80 BTU-in/hr-ft <sup>2</sup> -°F<br>@Temperature 1999 °F | ASTM C182                     |
| Maximum Service Temperature, Air | 1260 °C  | 2300 °F  | Normal oxidizing atmosphere   |
|                                  | 0.00 %   | 0.00 %   | Permanent Linear Change; ASTM |

| Shrinkage<br>Thermal Properties | @Temperature 1232 °C,<br>Metric<br>Time 36400 sec | @Temperature 2250 °F,<br>English<br>Time 24.0 hour | C210<br>Comments |
|---------------------------------|---|--|------------------|
|---------------------------------|---|--|------------------|

| Component Elements Properties | Metric | English | Comments                  |
|-------------------------------|--------|---------|---------------------------|
| Al2O3                         | 35 %   | 35 %    |                           |
| CaO                           | 2.1 %  | 2.1 %   |                           |
| Fe2O3                         | 0.90 % | 0.90 %  |                           |
| MgO                           | 0.00 % | 0.00 %  |                           |
| Na2O                          | 0.40 % | 0.40 %  | Includes K <sub>2</sub> O |
| SiO2                          | 60.3 % | 60.3 %  |                           |
| TiO2                          | 1.3 %  | 1.3 %   |                           |

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