

# PRODUCT DATA

## SMITHFIELD UNBRANDED FIREBRICK

### ALSEY Smithfield Unbranded Medium Duty Firebrick

**Description:**

Medium duty dry press firebrick

#### TYPICAL TEST DATA -- PHYSICAL PROPERTIES

**ASTM C-24**

P.C.E. .... 29  
 Temperature Equivalent (melting), °F..... 3018  
 Service Temperature (max. recommended), °F..... 2700

**ASTM C-133**

Modulus of Rupture (MOR), psi..... 825

**ASTM C-20**

Apparent Porosity, % ..... 19.8  
 Apparent Specific Gravity, g/cc ..... 2.63  
 Bulk Density, lb/ft<sup>3</sup> ..... 130.5  
 Water Absorption, %..... 9.8

**ASTM C-16 Schedule 3 % deformation**

Load Test at 2640°F..... -6.8

**ASTM C-113 Schedule B % linear**

Reheat Change at 2550°F ..... -2.8

**ASTM C-38, 2910°F preheat**

Panel Spalling Loss, % wt..... 9.5

#### Thermal Conductivity (K-Factor)

| At a mean temperature of |          | Btu/in<br>ft <sup>2</sup> hr°F | W/m°C |
|--------------------------|----------|--------------------------------|-------|
| 400°F                    | (205°C)  | 8.2                            | 1.18  |
| 800°F                    | (425°C)  | 8.5                            | 1.23  |
| 1200°F                   | (650°C)  | 9.0                            | 1.30  |
| 1600°F                   | (870°C)  | 9.2                            | 1.33  |
| 2000°F                   | (1095°C) | 9.5                            | 1.37  |
| 2400°F                   | (1315°C) | 9.8                            | 1.41  |

#### TYPICAL CHEMICAL ANALYSIS, Wt. % (calcined basis)

|   |       |
|---|-------|
| Silica (SiO <sub>2</sub> ).....                             | 56.02 |
| Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> ).....       | 37.50 |
| Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> ).....           | 2.09  |
| Titanium Dioxide (TiO <sub>2</sub> ).....                   | 1.99  |
| Potassium Oxide (K <sub>2</sub> O).....                     | 1.47  |
| Magnesium Oxide (MgO).....                                  | 0.36  |
| Calcium Oxide (CaO).....                                    | 0.30  |
| Sodium Oxide (Na <sub>2</sub> O).....                       | 0.074 |
| Zirconium Dioxide (ZrO <sub>2</sub> ).....                  | 0.068 |
| Chromium(III) Oxide (Cr <sub>2</sub> O <sub>3</sub> ).....  | 0.039 |
| Phosphorous Pentoxide (P <sub>2</sub> O <sub>5</sub> )..... | 0.036 |
| Manganese Oxide (MnO).....                                  | 0.007 |
| NiO.....  | 0.012 |
| Total.....  | 99.97 |

Loss on Ignition, 1000°C..... 0.13

We certify that SMITHFIELD (Unbranded) Dry Press Firebrick manufactured at our Alsey, Illinois plant conforms to ASTM Specification C-27 - Class 4.1.4 and 4.1.5 for Medium Duty and Low Duty respectively and C-1261-98 (which includes C-24 and C-67), as well as, C-16, C-20, C-24, C-38, C-113, C-133.

An MSDS is available upon request.

**Contact:**

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