SR-90 and SR-99 Firebricks

Product Data Sheet

Product Description

The SR-90, SR-99, and SR-99LS firebricks are premium high alumina firebricks that are capable of handling very difficult applications. These premium bricks are very dense and have excellent load bearing strength at temperatures above 1650°C (3000°F) and they provide excellent thermal shock resistance. The extremely low silica content of both products make them ideal for hydrogen atmospheres.

Features

- 90% and 99% alumina firebrick
- Low SiO_2 contents for use in hydrogen atmospheres
- Very high service temperature, >1650°C (>3000°F)
- Excellent high temperature stability

Applications

- Sulphur recovery units
- Incinerators
- Secondary ammonia reformers

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	SR-90	SR-99	SR-99LS
Color	white	white	white
Hot Face use Temperature, °C (°F)	1704 (3100)	1760 (3200)	1760 (3200)
Melting Temperature, °C (°F)	1915 (3480)	2016 (3660)	2016 (3660)
Porosity, ASTM C 20, %	14 - 22	12 - 19	20
Permeability, $ft^3/hr•ft^2•in/psi$	35	30	-
Abrasion loss, cm^3, ASTM C 704	5 - 10	-	-
Density, kg/m^3 (pcf), ASTM C 134			
fired	2708-3029 (169-189)	2885-3205 (180-200)	2885-3205 (180-200)
kg/229 mm straight (lb/9 in straight)	4.7 (10.4)	5.1 (11.3)	5.1 (11.3)
Modulus of Rupture, MOR, MPa (psi), ASTM C 133			
ambient	8.3-19.3 (1200-2800)	9.7-27.6 (1400-4000)	
Cold crushing strength, CCS, MPa (psi), ASTM C 133			
ambient	34.5 - 96.5 (5000 - 14000)	34.5 - 96.5 (5000 - 14000)	41.4 - 103.5 (6000 - 15000)
Deformation under hot load, ASTM C 16, 10 psi (0.07 MPa), %			
1.5 hrs @ 1538°C (2800°F)	+0.5 to -1.0	0 to -2.0	-
Linear Shrinkage, ASTM C 210, 24 hours, %			
1650°C (3000°F)	-0.1 to +0.4	0 to -0.3	-
5 hrs @ 1760°C (3200°F)	1.5	-	-
Chemical Analysis, %			
Alumina, Al_2O_3	90.3	99.2	99.5
Silica, SiO_2	9.1	0.4	0.1
Ferric Oxide, Fe_2O_3	0.1	0.1	trace
Titanium Oxide, TiO_2	trace	trace	trace
Calcium Oxide, CaO	0.1	0.1	trace
Magnesium Oxide, MgO	0.1	trace	trace
Alkalis as Na_2O and K_2O	0.2	0.2	0.2
Thermal Conductivity, W/m•K (BTU•in/hr•ft^2•°F), per ASTM C201			
260°C (500°F)	3.55 (24.6)	5.61 (38.9)	5.61 (38.9)
538°C (1000°F)	3.1 (21.5)	4.42 (30.7)	4.42 (30.7)
815°C (1500°F)	2.8 (19.4)	3.68 (25.5)	3.68 (25.5)
1093°C (2000°F)	2.55 (17.7)	3.11 (21.6)	3.11 (21.6)
1371°C (2500°F)	2.38 (16.5)	2.75 (19.1)	2.75 (19.1)

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