CERAMITE BKR SERIES

BAUXITE BASED REFRACTORY

Ceramite® BKR Series is a refractory material based on bauxite. Precast products from this refractory are widely used in the aluminium, ferroalloys, mining, cement and steel industries. The aggregates in this formulation have a maximum grain size of 4–5 millimetres (0.16–0.20 inches).

Ceramite BKR series properties include good strength, good wear resistance, and low thermal conductivity.

Refractories in the BKR series are cast products with good thermal and electrical insulating properties and include:

- BKR
- BKR-B (contains a non-wetting additive for aluminium contact)
- BKR-S (self-flowing, meaning it can be successfully cast in most instances without the use of vibration)
- BKR-SB (non-wetting and self-flowing)

COMPOSITION

Material	Approximate Percentage of Weight	
	BKR/BKR-B	BKR-S/BKR-SB
Al_2O_3	76%	76%
SiO_2	8%	10%
CaO	6%	4%
Fe_2O_3	1%	1%

BENEFITS

- Good strength and wear resistance
- Low thermal conductivity
- Thermal shock resistant

APPLICATIONS

- Floor tiles
- Wall crucible lining (In-situ)
- Potroom gas cleaning reactor lining

STORAGE

Pre-fired, cast Ceramite parts for hot applications must not be exposed to water or moisture. If exposed, a full sequence of preheating must be performed.

Pyrotek®

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Property	Units	Temperature °C	BKR	BKR-B	BKR-S	BKR-SB
Density	kg/m³ (lb/ft³)	20	2900 (181)	2800 (175)	2900 (181)	2800 (175)
		600	2700 (168)	2800 (175)	2800 (175)	2800 (175)
Cold Modulus of Rupture	MPa (psi)	20	20 (2900)	-	13 (1885)	-
		600	22 (3190)	20.5 (2370)	24 (3480)	28 (4060)
		850	16 (2320)	17 (2465)	17 (2465)	18 (2610)
		1000	15 (2175)	-	21 (3045)	-
Cold Compressive Strength	MPa (psi)	20	189 (27,410)	-	141 (20,450)	-
		600	220 (31,900)	217 (31,470)	226 (32,780)	248 (35,970)
		850	141 (20,450)	153 (22,190)	151 (21,900)	167 (24,220)
		1000	138 (20,015)	-	161 (23,350)	-
Hot Modulus of Rupture	MPa (psi)	800	22 (3190)	17 (2465)	26 (3770)	-
		1000	15 (2175)	-	26 (3770)	-
Abrasion Resistance (DIN52108)	cm³ loss/square cm	20	4.6	-	4.1	-
		600	4.0	3.9	3.6	4.8
Abrasion Resistance (ASTM C704)	cm³ (in³)	20	-	4.5 (0.27)	3 (0.18)	5.5 (0.34)
		600	4 (0.24)	4.5 (0.27)	4 (0.24)	4.3 (0.26)
Thermal Conductivity	W/m·K (BTU·in/ft²·hr·°F)	300	2.3 (16)	2.4 (16.6)	3.2 (22.2)	2.8 (19.4)
		600	2.1 (14.5)	1.8 (12.5)	2.7 (18.7)	2.1 (14.5)
		800	-	1.5 (10.4)	-	1.7 (11.8)
		900	2.3 (16)	-	2.5 (17.3)	-
Linear Thermal Expansion	%		0.7	0.5	0.6	0.53
Permanent Linear Change	20–850°C (68–1562°F) (%)		–0.41	–0.31	–0.2	-0.3
Maximum Service Temperature	°C (°F)		1200 (2192)	1200 (2192)	1200 (2192)	1200 (2192)
Maximum Grain Size	mm (in)		4	4	4	4

Note: The physical and chemical properties listed represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice.

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