



Kaocrete B is a more plastic material than most refractory castables. It is an excellent plastering material, preferred for patching linings and baffles. Recommended only for relatively thin sections. Kaocrete B has extremely low rebound when gunned.

Kaocrete D is a low-cost castable for service up to 2500°F (1371°C). For casting applications where thermal shock and moderate impact resistance is important.

Kaocrete HS is a high strength cast and gun mix for service up to 2600°F (1427°C). It incorporates an intermediate-purity calcium-aluminate cement and closely sized Kaolin aggregate.

Kaocrete 26 is a general purpose, low iron monolithic that can be cast or gunned into place. Designed for applications up to 2600°F (1427°C), Kaocrete 26 combines good volume stability with low cost.

Kaocrete 28-LI is a general-purpose, low iron monolithic which contains an intermediate-purity calcium aluminate cement that can be cast or gunned into place. Designed for applications up to 2800°F (1538°C), Kaocrete 28-LI a economical choice for high-temperature applications.

Kaocast is an alumina-silica refractory castable capable of withstanding up to 3000°F (1649°C). It possesses excellent volume stability. Many furnace operators select Kaocast for all purpose service where operating temperatures are between 2500°F (1371°C) and 3000°F (1649°C).

Kaocrete 30 is a 3000°F (1649°C) castable designed for high strength at temperatures of 1500°F (816°C) to 3000°F (1649°C). For cast applications only.

Kaocrete 32-CM is a 3200°F (1760°C), casting grade, refractory castable with a 70% alumina content. It possesses excellent volume stability and high strength.

Features

- Recommended use limit up to 3000°F (1649°C)
- Aggregate chemistry and grain sizing
- High purity binder systems
- Installed by cast, gun or plaster

Applications

- Around water-cooled boiler tubes
- Boiler ash hoppers
- Kiln cars
- Piers
- Car bottoms
- Seal tanks in FCCU vessels
- Burner blocks
- Ladle metallurgy lance material

Kaocrete Dense Castables

Product Information

Specifications	Kaocrete B	Kaocrete D	Kaocrete HS	Kaocrete 26	Kaocrete 28-LI	Kaocast	Kaocrete 30	Kaocrete 32-CM
Recommended use limit, °F (°C)	2300 (1260)	2500 (1371)	2600 (1427)	2600 (1427)	2800 (1538)	3000 (1649)	3000 (1649)	3200 (1760)
Avg. lb req. to place one cubic foot ¹ (kg)	100 (45)	128 (58)	123 (56)	122 (55)	127 (58)	126 (57)	140 (64)	144 (65)
Nom. density, pcf, fired (kg/m ³)	97 - 107 (1554 - 1715)	125 - 136 (2019 - 2179)	118 - 132 (1891 - 2115)	118 - 132 (1891 - 2115)	121 - 133 (1939 - 2131)	124 - 131 (1987 - 2099)	137 - 148 (2196 - 2372)	142 - 153 (2276 - 2452)
Recommended Water Ranges, % by weight ²								
Casting (by vibrating)	24 - 27	9 - 11.5	9 - 11.5	10 - 11.5	10 - 11.5	10 - 12.5	8 - 9.5	9 - 10.5
Method of installation ³	G,P	C	C,G	C,G	C,G	C,G	C	C
Pounds per bag (kg)	50 (23)	50 (23)	50 (23)	50 (23)	50 (23)	50 (23)	50 (23)	50 (23)
Shelf life, months	12	12	12	12	12	12	12	12

Physical Properties⁴

Modulus of rupture, psi (MPa) ASTM C 133

Dried 18-24 hrs. @ 220°F (104°C)	200 - 600 (1.4 - 4.1)	1000 - 1400 (6.9 - 9.7)	1100 - 1600 (7.6 - 11.0)	500 - 900 (3.4 - 6.2)	600 - 1000 (4.1 - 6.9)	700 - 1200 (4.8 - 8.3)	700 - 1300 (4.8 - 9.0)	500 - 1000 (3.4 - 6.9)
Fired 5 hrs. @ 1500°F (816°C)	100 - 300 (0.7 - 2.1)	400 - 800 (2.8 - 5.5)	450 - 650 (3.1 - 4.5)	250 - 450 (1.7 - 3.1)	200 - 500 (1.4 - 3.4)	200 - 400 (1.4 - 2.8)	400 - 800 (2.8 - 5.5)	300 - 600 (2.1 - 4.1)
Fired 5 hrs. @ use limit	200 - 400 (1.4 - 2.8)	1000 - 1500 (6.9 - 10.3)	900 - 1200 (6.2 - 8.3)	1000 - 1500 (6.9 - 10.3)	1000 - 1500 (6.9 - 10.3)	500 - 900 (3.4 - 6.2)	1500 - 2000 (10.3 - 13.8)	1500 - 2500 (10.3 - 17.2)

Cold crushing strength, psi (MPa)

Dried 18-24 hrs. @ 220°F (104°C)	1000-1800 (6.9 - 12.4)	4500-7000 (31.0 - 48.3)	5000-7000 (34.5 - 48.3)	2500-3400 (17.2 - 23.4)	3000-4000 (20.1 - 27.6)	2100-3000 (14.5 - 20.1)	5000-7000 (34.5 - 48.3)	3500-4300 (24.1 - 29.7)
Fired 5 hrs. @ 1500°F (816°C)	700-1500 (4.8 - 10.3)	3500-6000 (24.1 - 41.4)	3500-6000 (24.1 - 41.4)	1700-2500 (11.8 - 17.2)	1700-3000 (11.8 - 20.1)	1500-2500 (10.3 - 17.2)	4000-5500 (27.6 - 38.0)	3000-4000 (20.1 - 27.6)
Fired 5 hrs. @ use limit	400-800 (2.8 - 5.5)	4500-6000 (31.0 - 41.4)	4000-6000 (27.6 - 41.4)	2800-3800 (19.3 - 26.2)	4000-6000 (27.6 - 41.4)	2000-3000 (13.8 - 20.1)	4500-5500 (31.0 - 38.0)	7000-8000 (48.3 - 55.2)

Perm. linear change, % (ASTM C 113)⁵, Dried 18-24 hrs. @ 220°F (104°C)

	0.0 to -0.2	0 to -0.2	0 to -0.2	0 to -0.2	0 to -0.2	0 to -0.2	0 to -0.2	0 to -0.2
Fired 5 hrs. @ 1500°F (816°C)	-0.5 to -2.0	-0.1 to -0.4	-0.1 to -0.4	-0.1 to -0.4	-0.1 to -0.4	-0.1 to -0.4	-0.1 to -0.4	-0.1 to -0.4
Fired 5 hrs. @ use limit	-1.0 to -2.5	-0.4 to -1.0	-0.5 to +0.5	0 to +1.0	-0.5 to +0.5	-0.5 to +0.5	0 to +0.5	0 to +1.5

Chemical Analysis, (Nominal, %)

Alumina, Al ₂ O ₃	38	45	47	47	49	60	62	70
Silica, SiO ₂	46	40	40	43	42	33	32	25
Ferric oxide, Fe ₂ O ₃	1.3	2.3	1.0	1.1	0.9	1.0	0.7	0.9
Titanium oxide, TiO ₂	1.3	2.1	2.0	2.4	2.4	1.9	1.6	1.8
Calcium oxide, CaO	12	9.8	8.5	6.4	6.0	3.4	3.3	2.4
Magnesium oxide, MgO	0.9	trace	0.2	-	-	0.1	0.2	0.1
Alkalies, as, Na ₂ O	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2

Thermal Conductivity, Btu·in./hr·ft²·°F (ASTM C 417)

Mean temperature

@ 500°F (260°C)	3.3 (0.47)	6.2 (0.89)	5.9 (0.85)	5.6 (0.81)	6.0 (0.86)	8.1 (1.17)	9.7 (1.40)	11.6 (1.67)
@ 1000°F (538°C)	3.5 (0.50)	6.6 (0.95)	6.2 (0.89)	6.0 (0.86)	6.3 (0.91)	7.8 (1.12)	9.6 (1.38)	11.1 (1.60)
@ 1500°F (816°C)	3.8 (0.54)	6.8 (0.98)	6.5 (0.94)	6.3 (0.91)	6.6 (0.95)	7.7 (1.11)	9.6 (1.38)	10.9 (1.57)
@ 2000°F (1093°C)	4.1 (0.59)	6.9 (0.99)	6.7 (0.97)	6.4 (0.92)	6.7 (0.97)	7.7 (1.11)	9.7 (1.40)	10.4 (1.50)

- Guniting installation may require 10-30% average due to rebound and on-site loss.
- Water requirements indicated are offered as a guide. Actual water required may be subject to field conditions.
- Installation Key: C=Cast, G=Gun, P=Plaster
- Properties indicated are for vibratory cast materials only unless specified otherwise.
- Fired linear change values reflect samples taken from a dried to fired state.

Thermal Ceramics is a trademark of The Morgan Crucible Company plc. Kaocrete is a trademark of Thermal Ceramics Inc.

Marketing Communications Offices Thermal Ceramics Americas

T: (706) 796 4200
F: (706) 796 4398

Thermal Ceramics Asia Pacific

T: +65 6733 6068
F: +65 6733 3498

Thermal Ceramics Europe

T: +44 (0) 151 334 4030
F: +44 (0) 151 334 1684

North America - Sales Offices Canada

T: +1 (905) 335 3414
F: +1 (905) 335 5145

Mexico

T: +52 (555) 576 6622
F: +52 (555) 576 3060

United States of America

Eastern Region
T: +1 (800) 338 9284
F: +1 (866) 785 2764

Western Region

T: +1 (866) 785 2738
F: +1 (866) 785 2760

South America - Sales Offices

Argentina
T: +54 (11) 4373 4439

F: +54 (11) 4372 3331

Brazil

T: +55 (21) 2418 1366
F: +55 (21) 2418 1205

Chile

T: +56 (2) 854 1064
F: +56 (2) 854 1952

Colombia

T: +57 (2) 2282935/2282803/2282799

F: +57 (2) 2282935/2282803/23722085

Guatemala

T: +50 (2) 4733 295/6

F: +50 (2) 4730 601

Venezuela

T: +58 (241) 878 3164
F: +58 (241) 878 6712

The values given herein are 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. Therefore, the data contained herein should not be used for specification purposes. Check with your Thermal Ceramics office to obtain current information.