

Castable Refractories

PRODUCT		FIRECLAYS							
		MOLDIT®D	MOLDIT® DLI	MOLDIT® H&B	HOT TOP MOLDIT®	MOLDIT® HT	RICAST®	RP-157®	RP-160®
Max. Service Temp. (°C)		1400 (1316)	1400 (1343)	(1400) 1316	(1500) 1427	(1650) 1582	(1550) 1482	(1350) 1288	(1500) 1427
Dry Material Required. For Estimating (Ton/m³)		1.89	1.89	1.92	2.06	2.08	2.00	2.08	2.08
Modulus of Rupture (kg/cm²)	110°C	69	69	56	85	74	21	84	67
	816°C	32	32	21	45	49	12	39	32
Permanent Linear Change (%)	538°C	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1
	816°C	-0.1	-0.1	-0.3	-0.2	-0.2	-0.3	-0.2	-0.1
Thermal Conductivity (Kcal/mh°C)	260°C	0.73	0.84	0.69	0.61	0.84	0.73	0.46	0.43
	538°C	0.58	0.60	0.67	0.66	0.60	0.60	0.50	0.47
	816°C	0.52	0.56	0.71	0.69	0.56	0.57	0.51	0.50
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	39.7	45.7	39.8	49.1	48.5	47.1	37.6	40.1
	SiO ₂	36.9	37.0	41.4	39.5	43.2	43.4	46.1	48.9
	CaO	13.3	12.1	9.5	8.2	6.0	5.1	9.1	6.8
	Fe ₂ O ₃	7.7	2.8	6.4	1.2	0.9	1.9	3.0	1.2

Castable Refractories

PRODUCT		HIGH ALUMINA				
		SUPER MOLDIT®	SUPER CASTABLE NO.32®	MOLDIT® 70	FRACTO-CRETE® 3400	CASTABLE 141-A®
Max. Service Temp. (°C)		(1600)1538	(1700)1650	(1700)1650	(1800)1760	(1800)1760
Dry Material Required. For Estimating (Ton/m³)		1.92	1.98	2.21	2.56	2.64
Modulus of Rupture (kg/cm²)	110°C	20	37	39	123	77
	816°C	19	29	24	81	5
Permanent Linear Change (%)	538°C	0.1	-0.1	-	-0.1	-0.1
	816°C	-0.1	-0.1	-0.2	-0.2	-0.2
Thermal Conductivity (Kcal/mh°C)	260°C	0.64	0.97	1.25	2.44	1.39
	538°C	0.53	0.79	1.2	1.6	1.28
	816°C	0.56	0.77	1.14	1.2	1.23
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	55.3	55.2	68.6	94.8	97.0
	SiO ₂	35.9	39.0	24.7	0.2	0.1
	CaO	5.9	3.2	3.1	4.8	2.7
	Fe ₂ O ₃	1.0	0.9	1.2	0.1	tr

Castable Refractories

PRODUCT		VIBCAST				
		CERCAST™ SUPERLI	CERCAST™ HT	CERCAST™ 17	AR-153®VC	AR-400®VC
Max. Service Temp. (°C)		(1600) 1500	(1650) 1593	1450 (1370)	1400 (1274)	(1400) 1316
Dry Material Required. For Estimating (Ton/m³)		2.27	2.3	2.63	2	2.64
Modulus of Rupture (kg/cm²)	110°C	83	123	-	102	130
	816°C	44	63	-	114	134
Permanent Linear Change (%)	538°C	-0.1	-0.1	at 1000°C -0.1	-0.5	-0.1
	816°C	-0.1	-0.1	at 1200°C -0.2	-0.1	-0.1
Thermal Conductivity (Kcal/mh°C)	260°C	0.84	0.82	1.48	1.70	0.88
	538°C	0.92	0.93	1.34	1.26	1.17
	816°C	1.00	0.99	1.02	1.17	0.92
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	50.5	55.9	85.3	6.0	62.0
	SiO ₂	39.2	37.2	4.9	31.2	ZrO ₂ 23.2
	CaO	6.8	4.5	5.3	6.1	6.3
	Fe ₂ O ₃	1.2	0.9	1.7	-	-

Castable Refractories

PRODUCT		SPECIAL MIXES	
		FCS-5™	MOLDIT®CHROME
Max. Service Temp. (°C)		(1350) 1316	(1650) 1593
Dry Material Required. For Estimating (Ton/m³)		1.68	3.14
Modulus of Rupture (kg/cm²)	110°C	56	39
	816°C	74	29
Permanent Linear Change (%)	538°C	at 55°C 0.0	-
	816°C	-0.2	-
Thermal Conductivity (Kcal/mh°C)	260°C	-	-
	538°C	0.62	1.10
	816°C	-	1.08
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	34.4	17.2
	SiO ₂	57.6	Cr ₂ O ₃ 40.5
	CaO	7.7	3.9
	Fe ₂ O ₃	0.1	23.2

Castable Refractories

PRODUCT		LIGHTWEIGHT INSULATIONS				
		POURABLE INSULATION	CERLITE® ¹⁸	LITEWATE® ³⁵	LITEWATE® ⁵⁰	LITEWATE® ⁵⁸
Max. Service Temp. (°C)		EXP 649 BACK 571	982	1093	982	EXP 1177 BACK 1250
Dry Material Required. For Estimating (Ton/m ³)		0.56	0.32	0.56	0.67	0.93
Modulus of Rupture (kg/cm ²)	110°C	5	-	14	9	14
	816°C	at 538°C 1	-	7	5	7
Permanent Linear Change (%)	538°C	-0.65	-	-0.10	-0.50	-0.30
	816°C	-0.50	-	at 982°C -0.1	-0.90	-0.40
Thermal Conductivity (Kcal/mh°C)	260°C	0.10	0.10	0.15	0.16	0.29
	538°C	0.12	0.12	0.16	0.15	0.25
	816°C	-	0.15	0.19	0.25	0.24
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	11.30	25.50	31.80	19.40	34.70
	SiO ₂	63.00	37.30	19.90	50.30	37.60
	CaO	21.30	13.50	27.70	14.90	16.10
	Fe ₂ O ₃	1.1	7.7	12.9	2.3	8.0

Castable Refractories

PRODUCT		LIGHTWEIGHT INSULATIONS			
		LITEWATE ^{®70}	LITEWATE ^{®80}	CERLITE ^{®75C}	LINS ^{®50}
Max. Service Temp. (°C)		1260	1371	1510	EXP 1200 BACK 1371
Dry Material Required. For Estimating (Ton/m ³)		1.25	1.28	1.26	0.80
Modulus of Rupture (kg/cm ²)	110°C	32	20	18	18
	816°C	25	10	at 538°C 19	-
Permanent Linear Change (%)	538°C	-0.2	-0.2	-0.3	-0.4
	816°C	-0.4	-0.2	at 1093°C -0.2	-0.5
Thermal Conductivity (Kcal/mh°C)	260°C	0.37	0.45	0.29	0.21
	538°C	0.32	0.36	0.27	0.20
	816°C	0.29	0.29	0.31	0.19
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	33.6	43.7	53.9	68.2
	SiO ₂	41.6	39.2	40.7	21.3
	CaO	12.4	12.0	2.9	8.0
	Fe ₂ O ₃	7.2	2.4	0.9	0.6

Castable Refractories

PRODUCT		ABRASION RESISTANT	
		AR-400®	AR-153®
Max. Service Temp. (°C)		1316	1288
Dry Material Required. For Estimating (Ton/m³)		2.64	2.26
Modulus of Rupture (kg/cm²)	110°C	130	116
	816°C	134	117
Permanent Linear Change (%)	538°C	-0.1	-0.2
	816°C	-0.1	-
Thermal Conductivity (Kcal/mh°C)	260°C	0.88	1.00
	538°C	0.91	0.92
	816°C	0.92	0.82
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	62	56.2
	SiO ₂	ZrO ₂ 23.2	34.5
	CaO	6.3	6.5
	Fe ₂ O ₃	0.5	0.6

Castable Refractories

PRODUCT		ALUMINUM					
		ALUGUARD™ A	ALUGUARD™ B	ALUGUARD 60	ALUGUARD 70	ALUGUARD™75	ALUGUARD SC
Max. Service Temp. (°C)		1371	1371	1260	1371	1093	1371
Dry Material Required. For Estimating (Ton/m³)		2.77	2.65	2.46	2.5	1.2	2.48
Modulus of Rupture (kg/cm²)	110°C	-	-	-	-	29	-
	816°C	62	54	75	75	14	62
Permanent Linear Change (%)	538°C	-	-0.1	-	-	-	-
	816°C	-0.1	-	-0.1	-0.1	-0.8	-0.1
Thermal Conductivity (Kcal/mh°C)	260°C	2.44	at 1000°C 1.05	0.97	0.99	0.37	-
	538°C	2.44	at 1200°C 1.31	0.97	0.99	0.32	-
	816°C	1.20	-	-	-	0.29	-
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	93.4	86.5	59.0	69.3	40	10.5
	SiO ₂	0.2	2.8	35.0	24.4	32.6	2.0
	CaO	4.3	5.8	1.7	1.7	14.8	2.5
	Fe ₂ O ₃	0.2	0.9	1.1	1.2	6.1	SiC 80.3

Castable Refractories

PRODUCT		SILICON CARBIDE	
		ONXY™75	ONXY™85
Max. Service Temp. (°C)		1500	1500
Dry Material Required. For Estimating (Ton/m³)		2.4	2.6
Modulus of Rupture (kg/cm²)	110°C	67	82
	1370°C	105	239
Thermal Conductivity (Kcal/mh°C)	1200°C	8.43	8.68
Chemical Composition (% Calcined Basis)	SiC	74	83.1
	Al ₂ O ₃	14.4	10.6
	SiO ₂	4.8	2.0
	Fe ₂ O ₃	1.3	0.4
	CAO	3.7	2.5

High Dense & Strength Castables

PRODUCT		CRITERION® 50	CRITERION® 60	CRITERION® 70	CRITERION® 72C	CRITERION® 75
Max. Service Temp. (°C)		1538	1649	1760	1704	1704
Dry Material Required. For Estimating (Ton/m³)		2.37	2.48	2.56	2.64	2.72
Cold crushing Strength (kg/cm²)	110°C	672	613	552	-	437
	1371°C	667	690	659	-	655
Permanent Linear Change (%)	816°C	-0.1	-0.2	-0.1	-0.03	-0.1
	1371°C	0.2	-0.2	-0.1	0.69	-0.1
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	50.8	60.6	71.3	71.7	76.5
	SiO ₂	44.8	34.5	22.9	20.2	18
	CaO	1.8	1.8	1.8	1.9	2.0
	Fe ₂ O ₃	0.8	1.0	1.0	Cr ₂ O ₃ 3.0	0.9

High Dense & Strength Castables

PRODUCT		ALUGARD™70	ALUGARD SC 85XL	CRITERION® 92C	ALUGARD™95	CRITERION® 96
Max. Service Temp. (°C)		1649	1649	1871	1593	1760
Dry Material Required. For Estimating (Ton/m³)		2.64	2.63	2.95	3.06	3.04
Cold crushing Strength (kg/cm²)	110°C	844	317	200	682	878
	1371°C	901	1093°C 608	165	816°C 703	834
Permanent Linear Change (%)	816°C	-0.2	-0.1	+0.01	-0.1	0
	1371°C	-0.2	1093°C -0.1	-0.07	816°C -0.1	+0.2
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	70.0	8.5	92.1	92.6	95.7
	SiO ₂	22.0	5.5	0.6	2.8	2.8
	CaO	1.9	SiC 81.4	1.7	1.9	1.7
	Fe ₂ O ₃	1.0	-	Cr ₂ O ₃ 5.0	-	0.1

Special Plastics

PRODUCT		QUICK RAM PLASTICS				
		QUICK RAM 60 HS	QUICK RAM 70 HS	QUICK RAM 80 HS	QUICK RAM 95 HS	QUICK RAMHS BLU HS
Max. Service Temp. (°C)		1650	1650	1650	1700	1650
Bond Type		Chemical	Chemical	Chemical	Chemical	Chemical
Dry Material Required. For Estimating (Ton/m ³)		2.56	2.6	2.84	2.96	2.64
Modulus of Rupture (kg/m ²)	110°C	4	24	16	15	18
	1399°C	50	138	115	165	85
Permanent Linear Change (%)	816°C	-0.5	-0.5	-0.8	-0.7	-0.2
	1399°C	-0.3	-0.6	+0.8	-1.0	+0.1
Thermal Conductivity (Kcal/mh°C)	538°C	0.63	0.68	1.63	1.93	1.54
	816°C	0.75	0.81	1.57	1.85	1.48
	1093°C	0.87	0.93	1.48	1.92	1.37
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	57.4	66.6	79.6	95.6	74.7
	SiO ₂	39.0	29.4	15.8	3.7	21.8
	Fe ₂ O ₃	1.2	1.2	1.2	0.2	1.9

Special Plastics

PRODUCT		VIBRATABLES				
		55-RAM® GVM	60-RAM® GVM	80-RAM® GVM	85-RAM® GVM	90-RAM® GVM
Max. Service Temp. (°C)		1700	1700	1750	1750	1800
Bond Type		Chemical	Chemical	Chemical	Chemical	Chemical
Dry Material Required. For Estimating (Ton/m ²)		2.4	2.45	2.51	2.66	2.98
Modulus of Rupture (kg/cm ²)	110°C	168	157	131	139	182
	1399°C	235	223	219	102	-
Permanent Linear Change (%)	816°C	0.0	0.0	0.0	+0.1	+10.1
	1399°C	+0.6	+0.4	+0.4	+0.9	-
Thermal Conductivity (Kcal/mh°C)	538°C	0.60	0.60	1.20	1.89	2.23
	816°C	0.77	0.77	1.12	1.46	1.81
	1093°C	0.95	0.95	1.12	1.29	1.63
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	53.5	60.2	65.8	79.1	91.0
	SiO ₂	40.5	33.5	27.7	13.4	5.3
	Fe ₂ O ₃	0.8	1.1	1.1	1.3	0.2

Special Plastics

PRODUCT		RAMMING MIXES					
		EMERALD RAM® RM	85-RAM® RM	90-RAM® RM	BLU-RAM® RM	RAMTITE® 25RM	RAMTITE® 60RM
Max. Service Temp. (°C)		1900	1750	1800	1800	1650	1700
Bond Type		Chemical	Chemical	Chemical	Chemical	Heat	Heat
Dry Material Required. For Estimating (Ton/m³)		3.22	2.93	3.04	2.77	2.40	2.40
Modulus of Rupture (kg/cm²)	110°C	105	127	116	105	7	6
	1399°C	311	158	137	254	35	42
Permanent Linear Change (%)	816°C	+0.1	-0.3	-0.4	-0.2	-0.5	-0.4
	1399°C	-0.3	+0.7	+0.5	-0.2	+0.6	+0.3
Thermal Conductivity (Kcal/mh°C)	538°C	2.15	1.89	2.23	1.2	0.77	1.46
	816°C	2	1.46	1.81	1.12	0.77	0.77
	1093°C	1.72	1.29	1.63	1.12	0.95	0.86
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	84.6	83.4	90.8	73.8	41.9	53.5
	SiO ₂	2.3	10.3	7.3	20.0	54.9	41.9
	Fe ₂ O ₃	Cr ₂ O ₃ 9.5	1.0	0.4	0.9	0.6	1.5

Special Plastics

PRODUCT		PATCHING AND TROWELLING PRODUCTS			
		EMERALD RAM® TR	85-RAM®PC	90-RAM®PC	BLU-RAM® PC
Max. Service Temp. (°C)		1900	1750	1800	1800
Bond Type		Chemical	Chemical	Chemical	Chemical
Dry Material Required. For Estimating (Ton/m³)		2.77	2.93	2.93	2.58
Modulus of Rupture (kg/m²)	110°C	103	57	66	93
	1399°C	313	129	172	203
Permanent Linear Change (%)	816°C	-0.1	-0.5	-0.6	+0.3
	1399°C	-0.3	-0.5	-0.6	+0.3
Thermal Conductivity (Kcal/mh°C)	538°C	2.15	1.89	1.3	0.86
	816°C	2.00	1.46	1.72	0.77
	1093°C	1.72	1.29	2.06	0.86
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	81.9	76.0	92.4	71.6
	SiO ₂	2.9	17.4	4.2	22.4
	Fe ₂ O ₃	Cr ₂ O ₃ 11.3	1.0	0.4	0.9

Plastic Refractories

PRODUCT		ALUMINA-CHROME PLASTIC REFRACTORIES	
		EMERALDRAM® HS	EMERALDRAM®
Max. Service Temp. (°C)		1900 (427~1871)	1900 (427~1871)
Bond Type		Chemical	Chemical
Dry Material Required. For Estimating (Ton/m³)		3.22	3.25
Modulus of Rupture (kg/cm²)	110°C	96	104
	1399°C	269	314
Permanent Linear Change (%)	538°C	-0.2	-0.1
	1399°C	-0.3	-0.3
Thermal Conductivity (Kcal/mh°C)	538°C	2.17	2.17
	816°C	1.95	1.95
	1093°C	1.76	1.76
Chemical Composition (% , Calcined Basis)	Al ₂ O ₃	85.1	84.6
	SiO ₂	1.4	2.3
	Fe ₂ O ₃	Cr ₂ O ₃ 10.0	Cr ₂ O ₃ 9.6

Plastic Refractories

PRODUCT		HIGH ALUMINA PLASTIC REFRACTORIES					
		83-RAM®	85-RAM®	85-RAM® HS	90-RAM®	90-RAM® HS	BLU-RAM® HS
Max. Service Temp. (°C)		1750 (1316~1649)	1750 (427~1649)	1750 (427~1649)	1800 (427~1704)	1800 (427~1704)	1800 (427~1704)
Bond Type		Heat	Chemical	Chemical	Chemical	Chemical	Chemical
Dry Material Required. For Estimating (Ton/m ³)		2.69	2.88	2.96	2.92	2.96	2.74
Modulus of Rupture (kg/cm ²)	110°C	25	58	88	63	76	79
	1399°C	91	129	158	105	188	154
Permanent Linear Change (%)	538°C	-1.2	-0.6	-0.7	-0.6	-0.6	-0.2
	1399°C	-0.6	-0.5	-0.7	-0.3	-0.6	-0.2
Thermal Conductivity (Kcal/mh°C)	538°C	1.88	1.88	1.75	2.21	1.93	1.2
	816°C	1.48	1.48	1.56	1.81	1.85	1.14
	1093°C	1.25	1.25	1.48	1.64	1.91	1.12
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	81.1	83.6	85.6	90.8	93.0	73.8
	SiO ₂	14.6	10.3	6.6	7.3	2.7	20.7
	Fe ₂ O ₃	1.3	1.0	0.9	0.4	0.5	1.0

Plastic Refractories

PRODUCT		HIGH ALUMINA PLASTIC REFRACTORIES					
		BLU-RAM®	55-RAM® HS	70-RAM® HS	80-RAM® HS	RAMTITE® 60	WASP® 60
Max. Service Temp. (°C)		1800 (427~1704)	1650 (427~1538)	1700 (427~1593)	1750 (427~1694)	1700 (982~1649)	1700 (427~1593)
Bond Type		Chemical	Chemical	Chemical	Chemical	Heat	Chemical
Dry Material Required. For Estimating (Ton/m³)		2.77	2.51	2.55	2.64	2.4	2.5
Modulus of Rupture (kg/cm²)	110°C	105	37	48	45	7	36
	1399°C	255	144	86	110	43	51
Permanent Linear Change (%)	538°C	-0.2	-0.2	-0.7	-0.8	-0.4	0.4
	1399°C	-0.2	+1.5	0.2	+0.1	0.3	+0.3
Thermal Conductivity (Kcal/mh°C)	538°C	1.2	0.62	0.62	1.2	0.62	0.62
	816°C	1.14	0.74	0.74	1.14	0.74	0.74
	1093°C	1.12	0.87	0.87	1.12	0.87	0.87
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	73.8	55.3	60.4	64.9	53.5	51.1
	SiO ₂	20	38.4	33.4	28.2	41.9	41.4
	Fe ₂ O ₃	0.9	1.8	1.2	1.3	1.5	1.4

Plastic Refractories

PRODUCT		FIRE CLAY PLASTIC REFRACTORIES		
		WASP® 29	WASP® 30	RAMTITE® 25
Max. Service Temp. (°C)		1650 (110~1593)	1500 (427~1399)	1650 (649~1593)
Bond Type		Air	Chemical	Heat
Dry Material Required. For Estimating (Ton/m³)		2.4	2.4	2.4
Modulus of Rupture (kg/cm²)	110°C	40	23	8
	1399°C	35	53	41
Permanent Linear Change (%)	538°C	-0.5	-0.4	-0.7
	1399°C	+0.6	+0.9	+0.2
Thermal Conductivity (Kcal/mh°C)	538°C	0.73	0.73	0.73
	816°C	0.77	0.77	0.77
	1093°C	0.98	0.98	0.98
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	41.9	43.6	45.5
	SiO ₂	54.9	50.6	51.0
	Fe ₂ O ₃	0.6	1.4	1.2

Plastic Refractories

PRODUCT		ALUMINA-GRAPHITE PLASTIC REFRACTORIES			
		GRAFLOK™ 60	GRAFLOK™ 85	TROUGH-GUARD™ 101	GRAFLOK™
Max. Service Temp. (°C)		1600	1700	1800	1500
Bond Type		Air	Air	Air	Heat
Dry Material Required. For Estimating (Ton/m ³)		2.34	2.63	2.84	2.05
Modulus of Rupture (kg/cm ²)	110°C	13	32	28	-
	1399°C	25	37	81	-
Permanent Linear Change (%)	538°C	-0.9	+0.4	-	-
	1399°C	-0.4	+0.3	-	-
Thermal Conductivity (Kcal/mh°C)	538°C	12.0	18.8	21.7	9.8
	816°C	11.4	19.8	19.5	9.4
	1093°C	11.2	12.5	17.6	10.9
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	42.2	58.9	69.8	41.8
	SiO ₂	38.3	9.2	4.0	43.5
	C+SIC	16.8	18.5	20.2	11.0

Plastic Gunning Materials

PRODUCT		SURE-FIRE					
		SURE-FIRE™ 45	SURE-FIRE™ 50	SURE-FIRE™ 55	SURE-FIRE™ 60	SURE-FIRE™ 70	SURE-FIRE™ 85
Max. Service Temp. (°C)		1538	1593	1649	1649	1649	1593
Dry Material Required. For Estimating (Ton/m³)		2.48	2.45	2.45	2.4	2.6	2.9
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	44.8	48.4	53.1	57.7	73.1	87.1
	SiO ₂	54	47.7	43.4	38.8	22.7	7.9
Modulus of Rupture (kg/cm²)	110°C	4	4	4	5	17	36
	1399°C	35	81	50	52	159	293
Hot Modulus of Rupture (kg/cm²)	816°C	22	22	23	29	123	86
	1371°C	17	14	16	21	68	41

Plastic Gunning Materials

PRODUCT		SURE-FIRE				
		SURE-FIRE™ 55P	SURE-FIRE™ 70P	SURE-FIRE™ 85P	SURE-FIRE™ TQ	SURE-FIRE™ ER
Max. Service Temp. (°C)		1649	1593	1593	1593	1871
Dry Material Required. For Estimating (Ton/m³)		2.47	2.63	3.04	2.88	2.95
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	52.3	67.1	86.9	72.2	83.6
	SiO ₂	42.6	27.8	5	SiC 14.6	Cr ₂ O ₃ 9.6
Modulus of Rupture (kg/cm²)	110°C	43	25	140	72	-
	1139°C	79	43	221	73	-
Hot Modulus of Rupture (kg/cm²)	816°C	79	38	185	-	-
	1371°C	12	9	41	-	-

Plastic Gunning Materials

PRODUCT		CERAMATIC WALL BLOCK PLASTIC REFRACTORIES				
		CERMATIC® BLOCK25	CERMATIC® BLOCK 60 ¹	CERMATIC® BLOCK 80 ¹	CERMATIC® BLOCK 85 ¹	CERMATIC® BLOCK 90 ¹
Bond Type		Heat	Chemical	Chemical	Chemical	Chemical
Dry Material Required. For Estimating (Ton/m ³)		2.40	2.50	2.64	2.96	2.96
Modulus of Rupture (kg/cm ²)	110°C	6	36	45	88	76
	1399°C	18	51	110	158	188
Permanent Linear Change (%)	538°C	-0.7	-0.4	-0.8	-0.7	-0.2
	1399°C	0.2	0.3	0.1	-0.7	-0.3
Thermal Conductivity (Kcal/mh°C)	538°C	0.78	0.66	1.28	1.86	2.06
	816°C	0.83	0.81	1.23	1.69	2.00
	1093°C	1.05	0.93	1.2	1.59	2.06
Chemical Composition (% Calcined Basis)	Al ₂ O ₃	45.5	51.1	64.9	85.6	93.0
	SiO ₂	51	41.4	28.2	6.6	2.7
	Fe ₂ O ₃	1.2	1.4	1.3	0.9	0.5

Mortars & Hot Stop

PRODUCT		MORTARS			
		SUPER # 3000®	STEELTITE® ***	METALOK™ **	H-ALUMINA ***
Max. Service Temp. (°C)		Air Set 1650	Air Set 1650	1760	1800
Refractoriness (SK)		33	31	-	38
Bonding Strength (kg/cm²)	110°C	93	48	-	-
	550°C	79	-	-	-
	1100°C	79	at 1200°C 86	21	at 1200°C 5
	1400°C	-	-	43	19
	1600°C	-	-	-	51
	1650°C	-	-	-	-
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	52.2	49.0	55.4	75.0
	SiO ₂	44.0	46.0	39.2	18.5
	Fe ₂ O ₃	0.2	0.7	1.7	1.7

Mortars & Hot Stop

PRODUCT		MORTARS			
		MORT-AIRSET™**	CHEMAL™ MORTAR**	SUREBOND®	EMERALD MORTAR
Max. Service Temp. (°C)		1650	1800	1500	1800
Refractoriness (SK)		-	37	18	38
Bonding Strength (kg/cm²)	110°C	64	61	36	60
	550°C	46	42	57	-
	1100°C	64	-	36	-
	1400°C	100	29	143	30
	1600°C	-	-	-	50
	1650°C	-	-	-	-
Chemical Composition (%, Calcined Basis)	Al ₂ O ₃	52.9	86.3	4.3	78
	SiO ₂	40.7	6.9	92	8.0
	Fe ₂ O ₃	1.0	1.6	0.1	Cr ₂ O ₃ 5.0