

REFRACTORY CASTABLE

LAVA SUPPLYING A COMPREHENSIVE RANGE OF CASTABLE, INCLUDE:

A) Conventional Castable

Normal strength castable suitable for general casting, high mechanical and abrasive resistance

Extra strength castable excellent for high mechanical strength

Thermal shock resistance castable (coarse grain castable)

high mechanical strength and thermal shock resistance

Light weight castable casting in the areas that need to be protected from heat losses

B) High Alumina low cement castable

Normal low cement castable high mechanical strength low shrinkage abrasive resistance and good thermal shock resistance

THE MAIN APPLICATION FOR CASTABLE ARE LISTED BELOW:

- Casting an alternative to fireclay and high alumina brick for application such as glass furnaces, EAF, reheating-furnace, tapping spout, aluminium and jewelry kiln
- Application for cyclone preheated of cement kiln, ceramic kiln, ash coal hoppers coal and incinerators
- Casting an alternative to high alumina brick at EAF roof core, burner block, nose ring and kiln load

Conventional Castable Product Data

Type	Cast 13	Cast 13ES	Cast 15	Cast 16ES	Cast 17CG	Cast 17MT	Cast 18
Maximum Service Temperature [°C]	1300	1300	1500	1600	1700	1700	1800
Maximum Grain Size of Aggregates (mm)	5	5	5	5	12.5	5	5
Approximate Weight Required for Casting [kg/m ³]	2010-2020	2010-2120	2200-2210	2300-2350	2500-2580	2550-2600	2700-2730
Approximate Amount of Water Required For Casting [%]	10-12	10-12	10-12	10-12	10-12	10	10-12
Bulk Density After Drying At 110°C [kg/m ³]	2050-2070	2110-2120	2250-2260	2350-2400	2640-2650	2500-2550	2800-2820
Cold Crushing Strength After Drying At 110s°C [MPa]	35-38	40-45	30-32	40-50	38-40	35-38	49-50
Modulus of Rupture After Drying At 110°C [Kg/m ²]	60-70	70-80	70-75	70-75	80-85	70-80	100-120
Reheat Test, Permanent Linear Change After Heating At 1260°C [%]	+0.5	+0.5	-0.5	-0.5	-0.5	-0.5	-0.18
SiO ₂ [%]	57.1	47.5	45.0	33.1	6.5	6.3	0.5
Al ₂ O ₃ [%]	29.5	32.4	48.6	61.6	85.8	85.5	92.1
Fe ₂ O ₃ [%]	4.2	6.0	1.2	1.5	1.4	1.4	0.5



PLASTIC REFRACTORIES

Low Cement Castable Product Data

Type	C70	NE0165	C82
Maximum Service Temperature (°C)	1600	1650	1700
Maximum Grain Size Of Aggregates (mm)	12.5	12.5	12.5
Approximate Weight Required For Casting (kg/m ³)	2400-2430	2550	2600-2630
Approximate Amount Of Water Required For Casting (%)	5.0-5.5	5.0	5.0-5.5
Bulk Density After Drying At 110°C (kg/m ³)	2430-2440	2560	2630-2640
Cold Crushing Strength After Drying At 110°C (Mpa)	52-55	80-90	34-35
Modulus Of Rupture After Drying At 110°C (Kg/m ²)	60-65	62-65	40
Reheat Test, Permanent Linear Change After Heating At 1260°C (%)	-0.05	-0.15	-0.40
SiO ₂ (%)	36.1	22.4	13.1
Al ₂ O ₃ (%)	61.2	70.1	82.5
Fe ₂ O ₃ (%)	1.2	1.3	1.2
CaO	-	-	1.5

LAVA supplying a comprehensive range of Plastic Castable, Plastic Castable is phos-bonded, bauxite, mullite or corundum-based refractory. Its unsurpassed resistance to acid and neutral as well as basic slags allows it survive the corrosive environments. The plastic castable does not require forms during insulation where anchors are present except for flat arch constructions

Usually the binder of plastic castable is liquid aluminium dihydrogen phosphate, the plasticity can be adjusted when you are doing the installation. We can also supply the plastic castable with powder binder, and plastic castable ready for use (packed in cartons)



Insulating Castable Product Data

Type	CAST 11LW	CAST 13LW
Maximum Service Temperature (°C)	1100	1300
Maximum Grain Size Of Aggregates (mm)	3	5
Approximate Weight Required For Casting (kg/m ³)	800-900	1200-1300
Approximate Amount of Water Required For Casting (%)	40-50	35
Bulk Density After Drying At 110°C (kg/m ³)	900-950	1400-1450
Cold Crushing Strength After Drying At 110°C (MPa)	3-4	11-12
Modulus Of Rupture After Drying At 110°C (Kg/cm ²)	8.0	20-25
Reheat Test, Permanent Linear Change After Heating At 1260°C (%)	-0.08	-0.05
SiO ₂ (%)	55.0	47.1
Al ₂ O ₃ (%)	15.0	40.5
Fe ₂ O ₃ (%)	6.2	1.6

Product Data

Item	CPC65	CPC75	CPC80	CPC90
Service Temp (°C)	1550	1600	1650	1700
Bulk Density (g/m ³)	2.4	2.5	2.6	2.8
CCS	110°C	30	65	80
	1110°C	45	70	95
	1500°C	50	90	110
MOR	110°C	8	9	10
	1110°C	9	10	11
	1500°C	10	11	12
Max Grain Size (mm)	5	5	5	5
Chemical Analysis (%)	Al ₂ O ₃	65	75	80
	Fe ₂ O ₃	2.0	2.0	1.8

Mixing Liquid

Shall Be Supplied With The Castable Powder

REFRACTORY MORTAR

PROPERTIES

For bonding the individual brick together. Protecting the joints from corrosion by slag and other furnace. Available for use in acid conditions and suitable for light bonding between insulation bricks. High bonding strength with low shrinkage. It combines high refractoriness with smooth working properties. Available in both ready-to-use wet type and dry type.

APPLICATIONS

Used for laying all types of refractory bricks and a layer between brick of any type.



MORTAR DATA SHEET				
	Mortar 30 HM	Mortar 43 AM	Mortar 70 HM	Mortar 80 PM
CLASSIFICATION	HIGH-DUTY HEAT-SETTING MORTAR	SUPER-DUTY AIR-SETTING MORTAR(WET TYPE)	HIGH-ALUMINA HEAT-SETTING MORTAR	INORGANIC PHOSPHATE-BONDED HIGH-ALUMINA MORTAR(WET TYPE)
CHEMICAL COMPOSITION: (APPROXIMATE)				
SiO ₂ [%]	59	52.4	25.2	10.1
Al ₂ O ₃ [%]	32.3	43.5	70.1	80.0
Fe ₂ O ₃ [%]	1.8	1.4	1.5	1.8
PHYSICAL PROPERTIES				
Orton Cone	30	33-34	37-38	38
Approximate Amount Of Water For Trowelling Consistency	20-25		18-20	220-225
Per 1000 Pcs 9" Standard Brick, Equivalent Thinly Trowelled Joints	160-180	200-210	150-200	
Modulus Of Rupture After Drying At 110°C(kg/cm ²)	20	25	23	45

CALCIUM ALUMINATE CEMENT

LAVA supplying a comprehensive range of Aluminate Cement

Feature

- Rapid-hardening, high strength
- High refractoriness, high-temperature service
- Good resistance to corrosion, high wear resistance
- High thermal shock stability
- Low thermal conductivity, low liner shrinkage
- Good integrity with furnace lining, easy operation,
- Allow direct contact of fire, suitable for various atmosphere



Product Data

Category	CA50			CA70			
Product Grade	A600	A700	A900	CA70	CA70W	CA70S	CA71
Chemical Composition (%)	SiO ₂	≤8.0	≤7.5	≤6.0	≤0.5	≤0.5	≤0.5
	Al ₂ O ₃	≥50.0	≥51.0	≥53.5	68.5-70.5	68.5-70.5	69.5-71.5
	Fe ₂ O ₃	≤2.5	≤2.5	≤2.5	≤0.2	≤0.2	≤0.2
	R ₂ O	≤0.4	≤0.4	≤0.4	≤0.4	≤0.4	≤0.4
	S	≤0.1	≤0.1	≤0.1	-	-	-
	Cl	≤0.1	≤0.1	≤0.1	-	-	-
	CaO	-	-	-	28.5-30.5	28.5-30.5	28.5-30.5
MgO	-	-	-	≤0.4	≤0.4	≤0.4	≤0.4
325M Residue On Sieve (%)	≤15	≤12	≤8	-	-	-	-
S (m ² /kg)	≥300	≥320	≥350	-	-	-	-
Initial Setting Time (min)	≥45	≥60	≥90	120-180	30-90	180-240	150-210
Final Setting Time (h)	≤6	≤6	≤6	150-240	90-180	240-330	210-300
Flexural Strength (MPa)	1d	6	6.5	8.0	7.5-10.0	8.0-10.5	8.5-11.0
	3d	7	7.5	10.0	10.0-12.0	10.5-12.5	11.0-12.5
Compressive Strength (MPa)	1d	45	55	72	40-50	45-55	50-60
	3d	55	65	82	45-55	50-60	55-65