CASTABLES

CLASSIFICATION OF CASTABLES

1) CONVENTIONAL CASTABLE

- Normal Type: Prominent properties for normal casting
  Product name are CAST 13, CAST 14, CAST 15, CAST 16, CAST 18.
- ES-Series Type: Prominent properties for working requiring high load bearing.
  Product name are CAST 13 ES, CAST 15 ES, CAST 16 ES.
- LW-Series Type: Prominent properties for insulation against heat loss to help save energy.
  Product name are CAST 11 LW, CAST 13 LW

2) LOW CEMENT CASTABLE (LCC)

- C-Series Type: Used for work requiring very high mechanical strength.
  Product name are C 60, C 82.
- NEO-Series Type: Suitable for work requiring high mechnical strength.
  Product name are NEO 165, NEO 175

3) ULTRA LOW CEMENT CASTABLE (ULCC)

- Appropriate for work required a service temperature over 1,700℃ and high resis tance to abrasion and chemical attack. Product name are ULCC 90.

PROPERTIES

1) 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.

2) HIGH ALUMINA LOW CEMENT CASTABLE

- Normal low cement castable high mechanical strength low shringkage abrasive resis tance and good thermal shock resistance.

3) SPECIAL APPLICATION TYPE OF CASTABLE

- Alumina- Chrome castable high mechanical strength at high temperature, high slag penetration and abrasive resistance.

APPLICATIONS

- 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.

CAST 13

CLASSIFICATION: FIRECLAY CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,300
Maximum Grain Size of Aggregates	mm.	5
Approximate Weight Required for Casting	kg/m^3	2,010-2,020
Approximate Amount of water Required for Casting	%	10-12
Bulk Density after Drying at 110 ℃	kg/m^3	2,050-2,070
Cold crushing strength after Drying at 110 ℃	MPa	35-38
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	60-70
Reheat test, Permanent linear change		
After heating at 1,260℃	%	+0.5

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	0.55
At 600℃	Kcal/m.hr ℃	0.75
At 800℃	Kcal/m.hr ℃	0.78
At 1,000℃	Kcal/m.hr ℃	0.80

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica(SiO_2)	%	57.1
Alumina(Al_2O_3)	%	29.5
Iron Oxide(Fe_2O_3)	%	4.2

★All the technical data are typical of the properties of commercial standard brick. The data are subject to reasonable variation, should not be used for specification purpose.

CAST 13 ES

CLASSIFICATION: EXTRA-STRENGTH FIRECLAY CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,300
Maximum Grain Size of Aggregates	mm.	5
Approximate Weight Required for Casting	kg/m^3	2,010-2,020
Approximate Amount of water Required for Casting	%	10-12
Bulk Density after Drying at 110 ℃	kg/m^3	2,110-2,120
Cold crushing strength after Drying at 110 ℃	MPa	40-45
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	70-80
Reheat test, Permanent linear change		
After heating at 1,260℃	%	+0.5

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	0.55
At 600℃	Kcal/m.hr ℃	0.75
At 800℃	Kcal/m.hr ℃	0.78
At 1,000℃	Kcal/m.hr ℃	0.80

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica (SiO_2)	%	47.5
Alumina (Al_2O_3)	%	32.4
Iron Oxide (Fe_2O_3)	%	6.0

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CAST 15

CLASSIFICATION: HIGH ALUMINA CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,500
Maximum Grain Size of Aggregates	mm.	5
Approximate Weight Required for Casting	kg/m^3	2,200-2,210
Approximate Amount of water Required for Casting	%	10-12
Bulk Density after Drying at 110 ℃	kg/m^3	2,250-2,260
Cold crushing strength after Drying at 110 ℃	MPa	30-32
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	70-75
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.5

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	0.80
At 600℃	Kcal/m.hr ℃	0.85
At 800℃	Kcal/m.hr ℃	0.88
At 1,000℃	Kcal/m.hr ℃	0.90

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica (SiO_2)	%	45.0
Alumina (Al_2O_3)	%	48.6
Iron Oxide (Fe_2O_3)	%	1.2

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CAST 16 ES

CLASSIFICATION: EXTRA STRENGTH HIGH ALUMINA CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,600
Maximum Grain Size of Aggregates	mm.	5
Approximate Weight Required for Casting	kg/m^3	2,300-2,350
Approximate Amount of water Required for Casting	%	10-12
Bulk Density after Drying at 110 ℃	kg/m^3	2,350-2,400
Cold crushing strength after Drying at 110 ℃	MPa	40-45
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	70-75
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.5

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	0.93
At 600℃	Kcal/m.hr ℃	0.95
At 800℃	Kcal/m.hr ℃	0.98
At 1,000℃	Kcal/m.hr ℃	1.00

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica (SiO_2)	%	33.1
Alumina (Al_2O_3)	%	61.6
Iron Oxide (Fe_2O_3)	%	1.5

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CAST 17 CG

CLASSIFICATION: COARSE GRAIN HIGH ALUMINA CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,700
Maximum Grain Size of Aggregates	mm.	12.5
Approximate Weight Required for Casting	kg/m^3	2,500-2,580
Approximate Amount of water Required for Casting	%	10-12
Bulk Density after Drying at 110 ℃	kg/m^3	2,640-2,650
Cold crushing strength after Drying at 110 ℃	MPa	38-40
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	80-85
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.5

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	1.42
At 600℃	Kcal/m.hr ℃	1.44
At 800℃	Kcal/m.hr ℃	1.28
At 1,000℃	Kcal/m.hr ℃	1.26

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica (SiO_2)	%	6.5
Alumina (Al_2O_3)	%	85.8
Iron Oxide (Fe_2O_3)	%	1.4

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CAST 17 MT

CLASSIFICATION: HIGH ALUMINA CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,700
Maximum Grain Size of Aggregates	mm.	5
Approximate Weight Required for Casting	kg/m^3	2,550-2,600
Approximate Amount of water Required for Casting	%	10
Bulk Density after Drying at 110 ℃	kg/m^3	2,500-2,550
Cold crushing strength after Drying at 110 ℃	MPa	35-38
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	70-80
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.5

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	1.41
At 600℃	Kcal/m.hr ℃	1.44
At 800℃	Kcal/m.hr ℃	1.27
At 1,000℃	Kcal/m.hr ℃	1.26

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica (SiO_2)	%	6.3
Alumina (Al_2O_3)	%	85.5
Iron Oxide (Fe_2O_3)	%	1.4

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CAST 18

CLASSIFICATION:CORUNDUM CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,800
Maximum Grain Size of Aggregates	mm.	5
Approximate Weight Required for Casting	kg/m^3	2,700-2,730
Approximate Amount of water Required for Casting	%	10-12
Bulk Density after Drying at 110 ℃	kg/m^3	2,800-2,820
Cold crushing strength after Drying at 110 ℃	MPa	49-50
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	100-120
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.18

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	1.57
At 600℃	Kcal/m.hr ℃	1.42
At 800℃	Kcal/m.hr ℃	1.31
At 1,000℃	Kcal/m.hr ℃	1.28

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica(SiO_2)	%	0.5
Alumina(Al_2O_3)	%	92.1
Iron Oxide(Fe_2O_3)	%	0.5

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CAST 11 LW

CLASSIFICATION:INSULATING CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,100
Maximum Grain Size of Aggregates	mm.	3
Approximate Weight Required for Casting	kg/m^3	800-900
Approximate Amount of water Required for Casting	%	40-50
Bulk Density after Drying at 110 ℃	kg/m^3	900-950
Cold crushing strength after Drying at 110 ℃	MPa	3-4
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	8.0
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.08

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	0.21
At 600℃	Kcal/m.hr ℃	0.30
At 800℃	Kcal/m.hr ℃	0.35
At 1,000℃	Kcal/m.hr ℃	0.40

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica (SiO_2)	%	55.0
Alumina (Al_2O_3)	%	15.0
Iron Oxide (Fe_2O_3)	%	6.2

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CAST 13 LW

CLASSIFICATION:INSULATING CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,300
Maximum Grain Size of Aggregates	mm.	5
Approximate Weight Required for Casting	kg/m^3	1,200-1,300
Approximate Amount of water Required for Casting	%	35
Bulk Density after Drying at 110 ℃	kg/m^3	1,400-1,450
Cold crushing strength after Drying at 110 ℃	MPa	11-12
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	20-25
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.05

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	0.28
At 600℃	Kcal/m.hr ℃	0.30
At 800℃	Kcal/m.hr ℃	0.33
At 1,000℃	Kcal/m.hr ℃	0.35

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica (SiO_2)	%	47.1
Alumina (Al_2O_3)	%	40.5
Iron Oxide (Fe_2O_3)	%	1.6

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C 60

CLASSIFICATION:HIGH-ALUMINA LOW CEMENT CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,600
Maximum Grain Size of Aggregates	mm.	12.5
Approximate Weight Required for Casting	kg/m^3	2,400-2,430
Approximate Amount of water Required for Casting	%	5.0-5.5
Bulk Density after Drying at 110 ℃	kg/m^3	2,430-2,440
Cold crushing strength after Drying at 110 ℃	MPa	52-55
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	60-65
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.05

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	0.95
At 600℃	Kcal/m.hr ℃	0.94
At 800℃	Kcal/m.hr ℃	0.93
At 1,000℃	Kcal/m.hr ℃	0.93

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica(SiO_2)	%	36.1
Alumina(Al_2O_3)	%	61.2
Iron Oxide(Fe_2O_3)	%	1.2

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C 82

CLASSIFICATION:HIGH-ALUMINA LOW CEMENT CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,700
Maximum Grain Size of Aggregates	mm.	12.5
Approximate Weight Required for Casting	kg/m^3	2,600-2,630
Approximate Amount of water Required for Casting	%	5.0-5.5
Bulk Density after Drying at 110 ℃	kg/m^3	2,630-2,640
Cold crushing strength after Drying at 110 ℃	MPa	34-35
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	40
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.40

THERMAL EXPANSION

At 400℃	Kcal/m.hr ℃	1.50
At 600℃	Kcal/m.hr ℃	1.35
At 800℃	Kcal/m.hr ℃	1.30
At 1,000℃	Kcal/m.hr ℃	1.25

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica(SiO_2)	%	13.1
Alumina(Al_2O_3)	%	82.5
Iron Oxide(Fe_2O_3)	%	1.2

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NEO 165

CLASSIFICATION:HIGH-ALUMINA LOW CEMENT CASTABLE

PHYSICAL PROPERTIES

Maximum service temperature	℃	1,650
Maximum Grain Size of Aggregates	mm.	12.5
Approximate Weight Required for Casting	kg/m^3	2,550
Approximate Amount of water Required for Casting	%	5.0
Bulk Density after Drying at 110 ℃	kg/m^3	2,560
Cold crushing strength after Drying at 110 ℃	MPa	80-90
Modulus of rupture after Drying at 110 ℃	Kg/cm^2	62-65
Reheat test, Permanent linear change		
After heating at 1,260℃	%	-0.15

CHEMICAL COMPOSITION: (APPROXIMATE)

Silica(SiO_2)	%	22.4
Alumina(Al_2O_3)	%	70.1
Iron Oxide(Fe_2O_3)	%	1.3
Calcium Oxide(CaO)	%	1.5

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