



उत्पाद मैनुअल
HIGH ALUMINA REFRACTORY CEMENT
IS 15895:2018 के अनुसार

PRODUCT MANUAL
FOR HIGH ALUMINA REFRACTORY CEMENT
ACCORDING TO IS 15895:2018

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में अभ्यास और पारदर्शिता के संचालन में पारदर्शिता सुनिश्चित करने के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	उत्पाद Product	:	IS 15895:2018
	शीर्षक Title	:	High Alumina Refractory Cement
	संशोधनों की संख्या No. of amendments	:	NIL
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	NA – Sample of each purity and grade shall be tested
c)	नमूने का आकार Sample Size	:	30 kg
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annexure-A

4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annexure-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	(i) Pyrometric Cone Equivalent. (ii) Fineness (iii) Chemical Composition. (iv) Setting time.		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 15895:2018 with the following scope:		
	Name of the product	High Alumina Refractory Cement	
	Grades	Medium Purity/High Purity (Grade I, Grade II)	

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
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ANNEX-A

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard

SI No.	Tests used in with Clause Reference	Test equipment
1	Cl 4.2, Fineness	Variable flow type air permeability apparatus (Blaine Type)
		Timer with start-stop mechanism (LC 0.2 s)
		Mercury for calibration
		Balance, Standard weights
		Reference Cement of known specific surface
		Mercury of reagent grade.
		Circular discs of filter paper of medium porosity (Mean pore diameter 7 μm).
		Pyknometer
		Manometer liquid
		Light grease
2	Cl 4.1, Pyrometric Cone Equivalent	PCE Furnace as per IS 1528 part-1 temp upto 2000deg cel
		Standard Pyrometric cones
		Plaque, Bonding material
		Digital Pyrometer
		Standard Mould (metal, preferably brass)
		Transformer with Dimmer start
3	Cl. 4.5, Setting time	Vicat apparatus
		Needle for Consistency, IST& FST testing

		Moulds
		Stopwatch
		Balance and Standard Weights
		Gauging trowel of weight 210 ± 10 g
4	Cl. 4.4, Strength	Vibration machine with timer & cube mould
		fitting assembly 12000 ± 400 vibration per min.
		Compressive Strength machine
		Poking Rod , Petroleum Jelly
		Tachometer
		Cube Moulds 70.6 70.6 mm, Poking rod
		Gauging trowel (210 ± 10 g)
		Standard sand grade 1, 2 and 3 (as per IS 650)
		Graduated glass cylinders 150 to 200 ml
		Humidity chamber with temperature & RH Control $20 \pm 2^{\circ}$ C, RH 90 to 100 %
5	Cl 4.3, Chemical Composition	XRF apparatus if agreed between purchaser and manufacturer or apparatus/chemicals as per IS 4032, IS 12107 (Part 1), IS 12107 (Part 3), IS 12107 (Part 5) and IS 12107 (Part 6)
6	General equipment for Cement testing	
a)	To control humidity & temperature in lab	1. Humidity chamber with temperature & RH control $20 \pm 2^{\circ}$ C, RH 90 to 100 %
		2. Suitable arrangement to demonstrate maintenance of temp. of $20 \pm 2^{\circ}$ C & RH $90 \pm 5\%$ constantly
c)	To control the residue of cement	Sieves of size (300, 212, 150, 90, 75 & 45μ)
d)	To measure temperature	Thermometers
e)	Lab ball mill (motorized)	To grind the clinker in lab ball mill for testing
f)	To weigh the material	1. Platform type balance
		2. Electrical balance

		3 Weight box with standard weights
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The list above is indicative only and may not be considered as exhaustive

ANNEX B

SCHEME OF INSPECTION AND TESTING

1. **LABORATORY-** A laboratory shall be maintained, which shall be suitably equipped (as given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the method given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipment. The following equipments shall be calibrated at a frequency shown against each and records kept

Sl. No.	TEST EQUIPMENT	FREQUENCY OF CALIBRATION
1	Blaine's apparatus	Daily with licensee's own Standard cement sample and monthly with standard cement samples supplied by NCCBM.
2	Compressive strength Testing machine	Once in a month with Licensee's own Proving Ring and the Proving Ring shall be Calibrated once in two years from a NPL/NABL Accredited Calibrating body
3	Vibration machine	Once in a month by licensee's own Tachometer. The tachometer shall be calibrated once in a year from NPL/NABL accredited outside agency
4	Digital Pyrometer	Pyrometer shall be calibrated once in a year from NPL/NABL accredited outside agency

2. **TEST RECORD-** The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. **PACKING AND MARKING** - The Standard Mark as given in the Schedule of the licence shall be printed or stenciled on each cement bag/packet provided always that the material so marked conforms to each requirement of the specification.

3.2 The cement shall be stored in such a manner as to permit of easy access for proper inspection and, in a suitable weather-tight package to protect the cement from hydration and to minimize loss during transport. The storage life should be less than six months.

3.3 The cement bag/packet shall also be marked with the following in legible and permanent manner in a location where it is accessible and visible:

- Name, address and registered trade-mark of manufacturer
- Net quantity of cement per bag
- Batch/control unit number in terms of week, month and year of packing
- BIS licence number and "For BIS certification details please visit www.bis.gov.in"

5. **CONTROL UNIT-** For the purpose of this scheme, the entire quantity of high alumina cement of the same grade and purity packed in one day shall be taken as one control unit.

6. LEVELS OF CONTROL: - The tests as indicate in Table 1 and at the levels of controls in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and records maintained in accordance with paragraph 2 above.

6.1 All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark.

7. MANUFACTURER'S CERTIFICATE:-The manufacturer shall satisfy himself that the cement conforms to the requirements of this standard, if requested, shall furnish a certificate to this effect to the purchaser or his representative.

5. REJECTION - Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act,2016.

TABLE1
LEVELS OF CONTROL

(1)				(2)	(3)		
TEST DETAILS				Test equipment requirement R:required(or)S: Sub-contracting permitted	LEVELS OF CONTROL		
Clause	Requirement	Test Methods Clause Reference			Number of sample	Frequency	Remark
4.1	Pyrometric Cone Equivalent (Refractoriness)		IS 1528 (Part 1)	R	One	One sample shall be tested once in a month /whenever there is change of source of supply of material as per relevant Indian Standard as given in IS 15895: 2018.	-
4.2	Fineness		IS 4031 (Part 2)	R	One	Each control unit	-
4.3	Chemical Composition						
i)	Al ₂ O ₃	4.3	IS 15895:2018	R	One	Each control unit	-
ii)	SiO ₂	4.3	-do-	R	One	Each control unit	-
iii)	Fe ₂ O ₃	4.3	-do-	R	One	Each control unit	-
iv)	TiO ₂	4.3	-do-	R	One	Each control unit	-
v)	CaO	4.3	-do-	R	One	Each control unit	-

vi)	MgO	4.3	-do-	R	One	Each control unit	-
4.4	Strength	Annex A	-do-	R	One	Each control unit	
4.5	Setting time	Annex B	-do-	R	One	Each control unit	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note 2: The control unit and levels of control as decided by the Bureau are obligatory to which the licensee shall comply with.