

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION		PY 52036
		PURCHASE SPECIFICATION		Rev. No. 01
		PRE-FORMED CALCIUM SILICATE THERMAL INSULATION		Page 1 of 3

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PRE-FORMED CALCIUM SILICATE THERMAL INSULATION

1.0 GENERAL

This specification covers design and material requirements for supply of above ground, external calcium silicate insulation of piping and equipment operating upto 650 degC for the purpose of heat conservation, process stabilization, temperature maintenance, personnel and fire protection.

This specification is suitable for use in normal process plant atmospheres.

All the codes/standards mentioned in this specification shall be of latest issue.

2.0 CODES AND STANDARDS:

Following codes and standards to be followed for supply of Calcium silicate preformed blocks, slabs and pipe sections:

IS 8154 : Preformed Calcium Silicate Insulation (For temperatures up to 650 deg C)

3.0 MATERIAL REQUIREMENTS:

Manufacturing, Physical & Chemical properties, Inspection and Testing of Calcium silicate preformed blocks, slabs and pipe sections to be supplied under this specification shall conform to the latest edition of the **IS 8154** at an application density specifically as per Job Specification for any project.

4.0 SCOPE OF SUPPLY:

4.1 Pre-formed Calcium Silicate blocks shall be supplied as per the detailed BOQ specified in the Job Specification.

4.2 In addition, the following materials also shall be supplied:

- Calcium Silicate Powder (for filling the joints and gaps), measured in Kgs, quantity of which shall be **at least 5% of the total weight of the Blocks**. Vendor shall provide the calculation.
- Sodium Silicate Powder (Adhesive bond), measured in Kgs, quantity of which shall be **at least 1.5 Kg per Sq.m calculated on the Total Surface Area of the Insulation Block Layers**. Vendor shall provide the calculation.

5.0 TESTING

All testing and quality requirements shall be as per IS 8154.

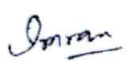
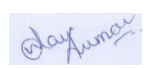
6.0 PACKING

All the items shall be packed suitably in closed wooden cases in order to avoid damage during transit and storage at BHEL. Suitable supports shall be provided inside the cases in order to avoid internal movement. Each packing case must contain 2 copies of the shipping list giving details of all the contents of the case.

7.0 MARKING ON PACKING CASE

The following marking shall be done on each packing case minimum on two sides and also at the top:

- BHEL Purchase Order Number
- Complete address of the consignee and destination as per BHEL Purchase Order.
- Name of the material
- Indication of the source of manufacture
- Shape and size

Refer Doc	LAYOUTS & PIPING ENGINEERING PROJECT ENGINEERING & SYSTEMS DIVISION	PREPARED	CHECKED	APPROVED	DATE
		 IMRAN	 UDAY G	 G SRIKANTH	13.06.19

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- f) Quantity of material
- g) Maximum service temperature.

8.0 GUARANTEE

Vendor shall guarantee all insulation material against the defects due to manufacturing affecting performance for a period of twenty four months from the date of supply and shall repair/replace promptly, without cost, any part or parts of the material that fails within said period. All the test certificates required as per this document shall also be furnished along with the supply of materials.

9.0 DOCUMENTATION

Along with offer:

One copy each of the following documents shall be submitted along with offer, without which offers will not be scrutinised:

- a) Bill of materials with material specification details, tests, weight etc.
- b) Any deviation to this standard, separately under a heading of Technical Deviations

After placement of order:

Four **copies** each of the following documents **for approval**:

- a) Bill of materials with material specification details. Quality plan adopted by the supplier during manufacture and inspection / testing
- b) Application Guidelines

Five copies of the following test certificates shall be furnished to BHEL **along with each consignment** attested by authorized inspector:

- a) Chemical and Mechanical Test Certificates
- b) Test Certificates

Bidder shall confirm in their bid for compliance in all respect for the submission of documents as follows:

S. No	Description	Along with offer	After placement of Order (Note-2)	After Supply completion
1	Bill of materials with material specification details	I (1)		
2	Quality Assurance Plan (QAP)	I (1)	A (4)	
3	Any deviations to this standard	A (1)		
4	Test Certificate		I (5)	
5	Guarantee Certificate		I (2)	

Notes:

- 1) I: For Information, A: For Approval
F: All above documents shall be made as 'FINAL' and submitted both in hard copies and soft copies
- 2) After placement of PO, all documentations required as applicable in above table shall be submitted within 7 days of PO placement.
- 3) BHEL will furnish their approvals / comments within 15 days after submission of drgs/ doc

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VARIANT TABLE:

Var No	Project	Scope of supply	Material Code
01	IOCL Baroda	PEMC-04389	PY9852036017
02	TCL Mithapur	PEMC-07415	PY9852036025

RECORD OF REVISIONS:

Rev No	Date	Revision Detail	Revised by	Approved by
00	19.02.14	FIRST ISSUE	VUK	DVS
01	13.06.19	NEW VARIANT ADDED AND GENERAL REVISION	IMRAN	GS

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