

TENDER

TENDER NOTIFICATION NO. - FCX/22231023

FOR

**Repairing of Magnesium Oxychloride flooring in test bay
and old UHV lab of NTB inside factory area.**

PRICE BID



FACTORY CIVIL CONSTRUCTION & MAINTENANCE DIVISION

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

BHOPAL – 462 022 (M.P)

PREAMBLE OF PRICE BID

1.0 This Price Bid consists of Three Schedule:

1.1 Schedule A

Schedule A consists of **Two** Annexure:

The evaluation currency for this tender shall be INR. Total price of the package combining **Annexure I & Annexure II** to be quoted by the bidders which shall form the basis for comparison for deciding lowest bid. For further processing and award, total quoted amount by the L1 (lowest) bidder for the package shall be used for deriving individual item rate by BHEL based on % (percentage) weightage specified at Annexure I & Annexure II of Price Schedule.

1.2 Schedule B

It consists of details of free issue materials by BHEL.

1.3 Schedule C

It consists of details of tools & tackles provided by BHEL either on higher basis or on free of cost basis which are mentioned in price bid.

2.0 The work to be carried out under the contract shall, except as otherwise provided in tender conditions, include all labour, materials, tools, plant, equipment, and transport which may be required in preparation of and for full & entire execution and completion of the Works. The descriptions given in the Schedule of Quantities shall, unless otherwise stated, be held to include waste on materials, carriage and cartage, carrying in return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion as aforesaid in accordance with good practice and recognized principles as laid down in Technical Specification & elsewhere in Tender

3.0 The price bid should not contain any condition. Conditional price Bids shall be summarily rejected.

4.0 The bidder should not leave any column blank in Price Schedules.

5.0 Price Quoted shall include all taxes, & duties except **GST**.

6.0 Unless otherwise specified in the items involving cement, reinforcement steel or structural steel, these items shall be issued free of cost by BHEL.

FACTORY CIVIL CONSTRUCTION & MAINTENANCE DIVISION**Price Schedule**

Name of work:- Repairing of Magnesium Oxychloride flooring in test bay and old UHV lab of NTB inside factory area.

SUMMARY

	Details ANNEXURE	Total Amount (Rs.)
	Total price of the package combining of Annexure-I & Annexure-II.	

Amount in words: Rs.

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NOTE:

- 1 The evaluation currency for this tender shall be INR. Total price of the package combining of **Annexure-I & Annexure-II** to be quoted by the bidders which shall form the basis of comparison for deciding lowest bid.
For further processing & award total quoted Amount for the package by the L1 (lowest) bidder shall be used for deriving Individual item rate by BHEL based on % (percentage) weightage specified at **Annexure-I & Annexure-II** of Price Schedule.
- 2 In case of “discrepancy in words and figures”, the same shall be adjusted in accordance with following rule:
 - (a) If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
 - (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.
 - (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
 - (d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.

FACTORY CIVIL CONSTRUCTION & MAINTENANCE DIVISION**Price Schedule A : Anneuxre - I**

Name of work:- Repairing of Magnesium Oxychloride flooring in test bay and old UHV lab of NTB inside factory area.

Sr. No.	Based on DSR' 2012	Item Description	Qty.	Unit	% Weightage of item amount against total amount
1		Carriage of materials by mechanical transport including loading, unloading and stacking --- 1 Km lead			
a)	1.1.1	Lime, Moorum, building rubbish	4.25	cum	0.0637
		Total Annexure -I			0.06

FACTORY CIVIL CONSTRUCTION & MAINTENANCE DIVISION**Price Schedule A : Anneuxre - II**

Name of work:- Repairing of Magnesium Oxychloride flooring in test bay and old UHV lab of NTB inside factory area.

Sr. No.	Item Description	Qty.	Unit	% Weightage of item amount against total amount
1	Surface preparation : Removal of dust/dirt , grease ,oil , other contaminants or loosely adhering deposits / particles using compressed air or wire brush or any other suitable means to make entire area suitable for laying of Heavy duty Magnesium oxychloride flooring as per the manufacturer's specifications and to the satisfaction of Engineer-in-charge. (Note:- During removal of dirt/ dust etc, the entire area to be kept barricaded/covered properly so that dirt/dust etc. does not spread in adjacent manufacturing areas).	85.00	Sqm	4.1214
2	Demolishing existing old epoxy/ PU /concrete floor to the desired extent with demolition hammer / chipping machine / floor cutting machine or any other suitable mechanical tool to the satisfaction of Engineer-in-charge. (Note:- While demolishing the entire area to be barricaded/ covered properly so that dirt/dust etc does not spread in adjacent manufacturing areas).	4.25	Cum	1.1639
				0.0000
3	Providing and laying heavy duty Magnesium Oxychloride flooring having compressive strength minimum 600 kg/ sq-cm at 28 days as per manufacturer's specifications over prepared RCC floor using all tools and tackles as per the instructions of engineer-in-charge. The floor work shall be done as per the technical specification and terms & conditions attached herewith at Annexure-N.	4.25	Cum	94.6510
	Total : Annexure II			99.94
	Total : Annexure I + Annexure II			100.00

Note 1 The contractor shall give a performance warranty of 02 years for Magnesium oxychloride flooring from the date of actual completion of contract. S.D. will be kept with BHEL towards the defect liability period and shall be released @ 50% with passage of each successful year of defect liability period.

2 In case of any defect noticed during the warranty period which is attributable to the poor workmanship / poor material quality, the same shall to be made good by the contractor free of cost and on priority. Security Deposit (SD) shall be kept with BHEL against above defect liability.

FACTORY CIVIL CONSTRUCTION & MAINTENANCE DIVISION**Price Schedule A : Anneuxre - II**

Name of work:- Repairing of Magnesium Oxychloride flooring in test bay and old UHV lab of NTB inside factory area.

Sr. No.	Item Description	Qty.	Unit	% Weightage of item amount against total amount
3	The contractor is required to mobilize the resources (man, machine & materials) within 48 hours of intimation by BHEL for attending to the warranty related issues and the same has to be attended within 10 days of intimation. The time includes completing all formalities pertaining to issuance of passes, labour entry etc. inside factory area. Beyond this stipulated time of 10 days, shall attract recovery @ Rs. 5000/- per day up to a maximum of 20 days from the date of intimation. This recovery shall be effected from the contractor's security deposit or any dues lying with BHEL.			
4	In the event of failure on the part of the contractor in attending to complaints within a maximum period of 20 days as stipulated above, Security Deposit (SD) shall be forfeited and work shall be carried out at contractor's risk & cost.			
5	This warranty does not include rectification / restoration of Magnesium oxy chloride floor damaged due to abuse of floor or act of God and any other reasons not attributable to the contract. Abuse of Magnesium oxy chloride floor shall mean dragging of objects causing abrasion gouging of floor due to protruding metallic object, chipping due to falling of sharp objects, damage caused due to impact more than the specified capacity of Magnesium oxy chloride floor etc.			
6	However , the extent of repair to of Magnesium oxy chloride floor due to abuse shall be inspected jointly i.e. by the department and the contractor / agency. Though the reasons for damages may not be attributable to the contractor / agency but this shall not absolve the contractor from his responsibilities. The same shall be repaired by the contractor without invalidating the warranty clause as per the original contract.			
7	If the repair of Magnesium oxychloride floor damaged due to abuse consists of area more than 0.5 sqm the department shall pay the contractor for this repair work separately. The area less than 0.5 sqm damaged due to abuse has to be rectified / repaired by the contractor without any price implication along with rectification of floor falling under warranty terms.			
8	The contractor shall submit the manufacturer's test certificates of materials/chemicals to be used in the work. He will use only those materials/ chemicals which are approved by Engineer-in-charge as per technical specification of the contract .			
9	The materials/chemicals shall , if required , be got tested in a Govt. or Govt. approved laboratory or any recognised test house as per the instruction of Engineer-in-charge in the presence of an authorised representative of BHEL . The materials/ chemicals shall be got approved by BHEL before application . Testing charges shall be borne by the contractor at no extra cost over and above the quoted rates.			
10	Offers from only original manufacturer or his authorized applicator of the products shall qualify techno-commercially along with other qualifying criteria mentioned in NIT.The tenderer shall , in this connection , submit supporting documents with the technical bid.			
11	The contractor shall take all safety precautions during handling of materials/ chemicals by workers. The workers shall use/ wear all personal protective equipments (PPEs) during the course of work.			

Annexure-N

TECHNICAL SPECIFICATIONS AND APPLICATION PROCEDURE OF MAGNESIUM OXYCHLORIDE FLOORING

A. FLOORING SPECIFICATIONS :

1. The following standards shall be followed vis-à-vis production of materials, transportation, mixing, laying and testing :-
 - a) IS: 657-1982 reaffirmed 2006 --- Specification for materials for use in the manufacture of magnesium oxy-chloride flooring compositions.
 - b) IS: 658-1982 reaffirmed 2006 --- Code of practice for magnesium oxy-chloride composition floors.
 - c) IS: 10132-1982 reaffirmed 2006 --- Method of Test for Materials for Use in the Preparation of Magnesium oxy-chloride Flooring Compositions.
2. Magnesium oxy-chloride flooring shall consist of dry mix combination of Magnesium-oxide, Calcium carbonate, Silica, Quartz sand, Saw dust, Talcum powder mixed with aggregate and Magnesium chloride solution at workable consistency.

The dry mix combination shall be as follows:-

Magnesium oxide –55% by weight
Calcium carbonate-17.5% by weight
Silica-10% by weight
Quartz sand-10% by weight
Saw dust-5% by weight
Talcum powder-2.5% by weight

The mixes may vary up to 5-7% during mixing

Ratio for Dry mix: Aggregate = 1: 2 to 2.25 by weight

Magnesium chloride solution shall be prepared at specific gravity of 1.18+/-0.02.

B. APPLICATION:

1) Preparation of the Base:-

The base shall be sound, rigid, free from rising dampness and not unduly porous. The existing concrete base should be roughened to a suitable degree by tooth chiseling, picking or by any other suitable process before oxy-chloride composition is laid.

2) Preparation of Floor Finish Mixture :-

a) Magnesium Chloride Solution - Magnesium chloride both before and after it has been dissolved should not be allowed to come into contact with any floors or walls. Whenever possible, the work of breaking up and dissolving the solid material or diluting the solution should be performed outside the building. Where the work has to be done inside, adequate protection should be provided under and around all vessels containing the chloride by means of tarpaulins, trays or other suitable devices. The solid chloride should be broken up and dissolved in a watertight vessel by covering the same with clean water, that is, clean and free from deleterious acids, alkalis, salts or organic material and stirring the same from time to time. The solution should be allowed to stand overnight so that residue, dust, impurities, etc., may settle to the bottom. The clean concentrated solution should be well stirred after each dilution before determining the specific gravity. The solution shall be prepared sufficiently early so that it is cooled to room temperature before use. The specific gravity of the chloride solution should be maintained at a selected value within the limits.

b) Proportions of Dry Materials – as mentioned above at sr. no. 2 of Annexure N

c) Proportion of Chloride Solution-A strong floor finishing composition may be formed by adding only sufficient magnesium chloride solution to dampen the dry mixed materials. For single coat and top coat mixes, some additional solution is usually required to enable the mix to be placed and brought to a smooth finish. The extra chloride does not improve the strength of the mixture. The use of its excessive quantity will, rather, have harmful effects.

The quantity of solution required for a given weight of dry mixture cannot be stated with accuracy. However, the following guidelines are provided :

Single coat and top coat mixes - Single coat and top coat mixes should be gauged with no more solution than is needed to produce a stiff mix which is just sufficiently plastic to be spread with trowel.

3) Final Mixing - The mixing of the chloride solution with the dry mix should be carried out in trough or box or on a bunker and in no case directly on the floor. The quantity of material mixed in any one batch

should be such as can be laid easily before initial set begins. The addition of further quantities of chloride solution during laying should not be permitted. If the mix becomes too stiff to be worked, it should be discarded.

4) Laying the Floor Finish - If the floor finish is to be laid on a concrete base, this should be thoroughly dry before commencement of laying. After laying, the top surface is to be finished with the help of floater.

5) Expansion joint treatment - **No** expansion joint is required for Magnesium Oxy-chloride flooring .

C. INSPECTION AND TESTING :-

a) Inspection - The work shall be inspected before commencement of laying of floor, during laying and after completion of laying. Special attention to be paid to the following points:

- a) General condition of the base,
 - b) Protection of all metal work liable to corrosion,
 - c) Correct mixing,
 - d) Proper compaction, and
 - e) Correct curing.
- b) Testing

General - The testing of the flooring composition shall be carried out on specimens made from samples or from the mixes being laid. Sample less should be taken from at least three different parts of the mixing vessel and thoroughly mixed together. Testing shall be done as per IS:10132-1982, reaffirmed 2006.

Dy. Manager(FCX)

Engineer (FCX/Zone-A)

FACTORY CIVIL CONSTRUCTION & MAINTENANCE DIVISION

Price Schedule : B

Name of work:- Repairing of Magnesium Oxychloride flooring in test bay and old UHV lab of NTB inside factory area.

NIL

Price Schedule : C

Name of work:- Repairing of Magnesium Oxychloride flooring in test bay and old UHV lab of NTB inside factory area.

1 Hire charges.

i) Jack Hammer @108.00/- per day (Subject to availability)

ii) Drill machine rod/jack hammer rod Rs. 100.00 per rod