		BHARATH HEAVY ELECTRICAL LIMITED RAMACHANDRAPURAM HYDRABAD-502032 TELANGANA, INDIA		Phonos: 040-2318 4088 Fax : 040-23020085 E-MAIL : anilrbk@bhel.in		ENQUIRY
						PURCHASE DEPARTMENT
SUPPLIER'S COPY		Enquiry No: HPEP/CMM/Paints/RC /2025-26		Enq. Date 06.01.2025	No. of. Items As per Annexure I (Group A –20 & Group B -61)	DUE DATE OF QUOTATION 28.01.2025 ,11.00AM
Enq. Sl.No	Specification	Material Code	Item Description	Unit	Quantity	Delivery Schedule
01	As per Annexure -I	As per Annexure -I	Paints procurement through rate contract as per Annexure -I	L	As per Annexure I	Rate contract for supply of paints for a period of One year with a delivery period of 30 days from placement of individual POs against RC.
<p>Remarks: (Please read the long description of the items carefully before quoting)</p> <p>We propose to enter into a Rate Contract for procurement of “Paints”, as per enclosed specifications and list of Items. In this connection following documents are enclosed.</p> <ol style="list-style-type: none"> 1) Annexure I - List of Items proposed to be procured through Rate Contract 2) Pre-Qualification Criteria(PQC) 3) BHEL Technical Specifications 4) ITB and ITB Annexures 5) Special Conditions of Contracts(SCC) 6) Price Bid Format(To be filled and submitted only in Part -II Bid as price Bid) 7) RA Guidelines <p>This is TWO Part Bid Enquiry and Reverse Auction is applicable for this Enquiry. Part I documents Annexure I, PQC, BHEL Technical specifications, ITB along with Annexures, SCC, RA guidelines. Bidders shall submit the above listed documents duly signed & stamped along with the Company catalogue and other details.</p> <p>Part II documents price bid in BHEL price bid format duly filled, signed & stamped.</p> <p>Technical bid & Price bid should be sent separately by mentioning the Enquiry No on the cover and same shall be submitted/dropped at our Vendor Complex, BHEL, R C Puram, Hyderabad 502032. The complete bid shall be submitted in a single sealed cover superscribing the Enquiry number and due date, addressed to Sr DGM/CMM, Vendor Complex, BHEL, Hyderabad and sent by appropriate mode to above address or dropped in tender box located at vendor complex on or before the specified time and date of submission of offers, preferably in the bidder's envelope.</p> <p>Bidder can also submit offer through email. Technical offer to be submitted to mail ID technicalbid_hyd@bhel.in, and price bid to be submitted to mail ID pricebid_hyd@bhel.in only as an attachment. Interchanging the information in the mails may lead to rejection of the offer. Bidder shall have no claim on e-mail offers sent to any other e-mail ID.</p> <p>In case of e-mail offers, the mail subject should contain Enquiry Number, Due date and Bidder name. Bidder address including contact details shall be mentioned in the content of the mail. Without these details, the offer is liable for rejection.</p>						
						For and on-behalf of Bharat Heavy Electricals Limited B Anil Kumar Manager / Purchase / CMM

List of Items in the Enquiry

Annexure -I

GROUP- A (20 Items)						
SL NO	MATERIAL CODE	MATERIAL DESCRIPTION	MU	TENTATIVE Qty for RC	SPEC.NO	SHADE
1	AA5610026121	S.E.APPLE GREEN	LTR	2140	AA56126, Rev:06	APPLE GREEN
2	AA5610026024	S.E.AZURE BLUE	LTR	3220	AA56126, Rev:06	AZURE BLUE
3	HY5610067014	S.E HAMMERTONE PAINT (DARK BLUE)	LTR	2220	AA56126, Rev:06	DARK BLUE
4	AA5610026512	S.E.DEEP ORANGE	LTR	120	AA56126, Rev:06	DEEP ORANGE
5	AA5610026130	S.E.SEA GREEN	LTR	420	AA56126, Rev:06	SEA GREEN
6	AA5610026237	S.E.SMOKE GREY	LTR	560	AA56126, Rev:06	SMOKE GREY
7	AA5610026300	HIGH QLTY SE PAINT(GOLDEN YELLOW)	LTR	1400	AA56126,Rev:06	GOLDEN YELLOW
8	AA5610026032	HGH QLTY SE PAINT (SKY Blue)(RAL5015)	LTR	2900	AA56126 Rev:06	RAL 5015 (Sky Blue)
9	HY5610071046	SE BUS GREEN	LTR	60	AA56126, Rev:06	BUS GREEN
10	HY5610071062	SE MACHINE GREEN	LTR	540	AA56126, Rev:06	MACHINE GREEN
11	HYN561000042	S.E.LIGHT BLUE	LTR	160	AA56126, Rev:06	LIGHT BLUE
12	AA5610026555	H.Q.F.G OD FNSH SYTC ENML PNT(BLACK)	LTR	820	AA56126, Rev:06	BLACK
13	AA5610026504	H.Q.F.G OD FNSH SYTC ENML PNT(P.O. RED)	LTR	1000	AA56126, Rev:06	POST OFFICE RED
14	AA5610027560	H.Q.F.G OD FNSH SYTC ENML PNT(WHITE)	LTR	1680	AA56127,Rev- 02	WHITE
15	AA5610026202	SYNTHETIC ENAMEL PAINT (LIGHT GREY)	LTR	980	AA56126, Rev:06	LIGHT GREY
16	AA5610026210	S.E DARK ADMIRALTRY GREY	LTR	560	AA56126, Rev:06	DARK ADMIRALTRY GREY
17	AA5610026326	CANERY YELLOW ENEMAL PAINT	LTR	240	AA56126, Rev:06	CANARY YELLOW
18	AA5610032563	OIL RESISTANT AIR DRYING (White paint)	LTR	760	AA56132,Rev. No.05	WHITE
19	HY5670062302	THINNER FOR ENAMIL PAINTS	LTR	4140	AA56701,REV:05	NO SHADE
20	HY5610026997	SYNTHETIC ENAMEL PAINT- GREY- RAL 9002	LTR	1200	AA56126, Rev:06	GREY, RAL 9002
Group A Total Qty				25120		
GROUP-B (61 Items)						
SL NO	MATERIAL CODE	MATERIAL DESCRIPTION	MU	TENTATIVE Qty for RC	SPEC.NO	SHADE
1	HY5610031680	EPOXIDE FINISH PAINT (BLUE)	LTR	2800	AA56131,REV.No-07	BLUE,RAL 5012
2	HY5610031621	EPOXIDE FINISH PAINT (FRENCH BLUE)	LTR	20	AA56131,REV.No-07	FRENCH BLUE
3	HY9050001041	EPOXY HIGH BUILD COATING	LTR	2800	HY9050001,Rev.08	GREY
4	HY5610031974	EPOXY PRIMER YELLOW 8532	LTR	2000	AA56109	YELLOW
5	HY5610034620	HR Aluminium Paint	LTR	1060	AA56149,Rev No.01	ALUMINIUM
6	AA5670008006	EPOXY THINNER	LTR	7400	AA56708,REV.NO-04	NO SHADE
7	HY9050001106	ACRYLIC POLYESTER POLYUR.PAINT-LIT.GREY	LTR	1200	HY9050001,Rev.08	LIGHT GREY
8	HY9050001114	ACRYLIC POLYESTER POLYUR.PAINT-W.GREY	LTR	1000	HY9050001,Rev.08	WHITE GREY
9	HY9050001084	ACRYLIC POLYURETHANE PAINT-W.ALUMINIUM WHITE PAINT	LTR	1100	HY9050001,Rev.08	WHITE ALUMINIUM
10	HY9050001092	ACRYLIC POLYURETHANE PAINT-D.ADRLY.GREY	LTR	1100	HY9050001,Rev.08	DARK ADMIRALTY GREY
11	HY9050001190	ACRYLIC POLYURETHANE PAINT-BASALT GREY	LTR	1100	HY9050001,Rev.08	BASALT GREY
12	HY5610011019	ALKYD ROXD ZN PHSPHT ANTI CORROSIVE SYPP	LTR	1600	AA56111,Rev.03	RED OXIDE
13	HY5610006228	CARBOLINE 134 ALPHTC URTHN PAINT:RAL9002	LTR	2140	AA56106,Rev:00	RAL 9002
14	AA5610031400	CR EPOXIDE FNSH LT. BROWN	LTR	120	AA 56131,Rev- 07	LIGHT BROWN
15	HY9050001033	EPOXY ZINC RICH PRIMER	LTR	920	HY9050001,Rev.08	GREY/RED OXIDE
16	HY5610005922	HEAT RESISTANT ALUMINIUM SILICON FINISH PAINT	LTR	620	AA56134,Rev No.04	RAL 9006
17	HY5610031710	HIGH BUILD MIO INTERMEDIATE COAT PAINT	LTR	300	AA56112 Rev 02	RAL7032, pebble grey
18	HY5610005914	IN ORGANIC ZINC SILICATE	LTR	2460	AA56113,Rev. No. 02	GREY

19	HY9050001017	INORGANIC ZINC SILICATE COATING	LTR	3100	HY9050001,Rev.08	GREY
20	BA9707002000	POLYAMIDE CURED HIGH BUILD EPOXY	LTR	2400	BA07002,REV.NO- 01	RAL 9002
21	HY5610006074	POLYAMIDE CURED HIGH BUILD MIO EPOXY	LTR	4400	AA56112,Rev No. 02	DARK BROWN
22	AA5610001013	RED OXIDE ZINC CHROME PRIMER	LTR	200	AA56101 Rev:09	RED OXIDE
23	HY5670062159	THINNER FOR AL PAINT	LTR	700	AA56708,REV.NO-04	NO SHADE
24	HY9050001157	THINNER FOR HB MIO EPOXY INTRMDT PAINT	LTR	1200	HY9050001,Rev.08	NO SHADE
25	HY9050001122	THINNER FOR INORGANIC ZINC SILICATE	LTR	1700	HY9050001,Rev.08	NO SHADE
26	HY9050001025	EPOXY ZINC PHOSPHATE PRIMER	LTR	1800	HY9050001,Rev.08	GREY/RED OXIDE
27	HY9050001130	THINNER FOR EPOXY ZINC PHOSPHATE	LTR	900	HY9050001,Rev.08	NO SHADE
28	HY9050001149	THINNER FOR EPOXY ZINC RICH PRIMER	LTR	500	HY9050001,Rev.08	NO SHADE
29	HY9050001220	EPOXY HIGH BUILD MIO	LTR	1300	HY9050001,Rev.08	GREY
30	HY9050001238	THINNER FOR EPOXY HIGH BUILD MIO	LTR	500	HY9050001,Rev.08	NO SHADE
31	HY9050001050	HEAT RESISTANT SILICON ALUMINIUM PAINT	LTR	3240	HY9050001,Rev.08	RAL 9006
32	HY9050001165	THINNER FOR HEAT RESISTANT SILICON ALUMINIUM PAINT	LTR	1380	HY9050001,Rev.08	NO SHADE
33	HY9050001173	THINNER FOR ACRYLIC POLYURETHENE PAINT	LTR	3160	HY9050001,Rev.08	NO SHADE
34	HY9050001181	THINNER FOR ACRYLIC POLYSTER POLYURETHANE PAINT	LTR	700	HY9050001,Rev.08	NO SHADE
35	HY9050001289	ACRYLIC POLYURETHANE PAINT-JET BLACK	LTR	400	HY9050001,Rev.08	JET BLACK,RAL 9005
36	HY9050001335	HEAT.RES.SIL ALUM PAINT-600DEG-RAL7012	LTR	400	HY9050001,Rev.08	RAL 7012
37	HY9050001360	ACRYLIC POLYURETHANE PAINT-SMOKE GREY	LTR	200	HY9050001,Rev.08	IS 692
38	HY9050001386	ACRYLC POLYURETHANE-PEBBLE GREY RAL7032	LTR	760	HY9050001,Rev.08	PEBBLE GREY,RAL 7032
39	HY5610031702	CHEMICAL RESISTANCE POLYURETHANE PAINTS	LTR	300	AA56142 Rev 06	RAL7032, pebble grey
40	HY9050001297	EPOXY PHENOLIC PRIMER	LTR	400	HY9050001,Rev.08	ALUMINIUM
41	HY9050001068	ACRYLIC POLYURETHANE PAINT PHIROZI BLUE	LTR	40	HY9050001,Rev.08	PHIROZI BLUE
42	HY9050001076	ACRYLIC POLYURETHANE PAINT BRIL.GREEN	LTR	40	HY9050001,Rev.08	BRILLIANT GREEN
43	HY9050001246	ACRYLIC PU FINISH PAINT BLUE GREY	LTR	40	HY9050001,Rev.08	BLUE GREY
44	HY9050001270	ACRYLIC PU FINISH PAINT WHITE GREY	LTR	800	HY9050001,Rev.08	WHITE GREY
45	HY9050001203	INERT POLYMER MATRIX ALUMINIUM	LTR	40	HY9050001,Rev.08	ALUMINIUM
46	HY9050001211	THINNER FOR INERT POLYMERIC MATRIX COATING	LTR	20	HY9050001,Rev.08	NO SHADE
47	HY5670062140	THINNER FOR INORGANIC ZINC SILICATE PRIMER	LTR	700	AA56708,REV.No-04.	NO SHADE
48	HY5670062086	THINNER/INORGANIC ZINC PRIMER	LTR	100	AA56708,REV.No-04.	NO SHADE
49	HY5610005760	CARBOLINE 4674	LTR	40	AA56708,REV.No-04.	ALUMINIUM
50	HY5610005817	THINNER 10	LTR	40	AA56708,REV.No-04.	NO SHADE
51	HY5670062256	THINNER 02	LTR	200	AA56708,REV.No-04.	NO SHADE
52	AA5610035600	HB COAL TAR EPOXY BLACK	LTR	1280	AA56135,REV.NO-05	BLACK
53	AA5610031206	EPOXY LIGHT GREY	LTR	3520	AA56131 Rev - 07	LIGHT GREY
54	AA5610005019	EPOXY 8532 PRIMER RED	LTR	1060	AA56105,REV.No-07	RED OXIDE
55	AA5610031109	CHMCAL RESISTANT EPOXDE FNSH PAINT (Sea Green)	LTR	280	AA56131,REV.NO-07	SEA GREEN
56	HY9050001319	THINNER FOR EPOXY PHENOLIC PAINT	LTR	100	HY9050001,Rev.08	NO SHADE
57	HY9050001351	EPOXY HIGH BUILD COATING AROMATIC AMINE	LTR	100	HY9050001,Rev.08	HIGH BUILD AROMATIC
58	AA5610007003	CHLORINATED RUBBER BASED PAINT	LTR	200	HY9050001,Rev.08	
59	AA5610012015	EPOXY HIGH BUILD TIO2 COATING	LTR	200	HY9050001,Rev.08	
60	HY5610005787	EPOXY PAINTS Of Other shades	LTR	680	HY9050001,Rev.08	FINAL SHADES AS PER REQUIREMENT
61	HY5610005760	PU FINISH PAINT of Other Shades	LTR	660	HY9050001,Rev.08	FINAL SHADES AS PER REQUIREMENT

Group B Total Qty

69520

Note:

a)Evaluation shall be done on Group wise overall L1 Basis

b)Bidder can opt for single group (i.e Group A or Group B) or both the groups (Group A& B).

c)Bidders must quote for all items in a particular group mandatorily. Submission of offer for all items in a particular group is mandatory. If any bidder not quoted for any or multiple item in a particular group their offer will be summarily rejected for that group

Bharat Heavy Electricals Limited
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Pre- Qualifying criteria for the vendors participating in "Open Tender for enquiry of **HPEP/CMM/Paints/RC /2025-26**– Reg.

Clause wise response of vendor is necessarily to be submitted for technical evaluation of technical bid

<u>Pre Qualification Criteria</u>			
Sl	BHEL Requirement	Bidder Response	Details of documents enclosed, if any
1	This Tender is for entering into a Rate Contract for a period of one Year. The Rate Contract (RC) will be operated by BHEL HPEP Hyderabad Unit.		
2	Items shall be supplied as per BHEL attached Specification only. Vendor to confirm in technical offer.		
3	Supplier shall be a manufacturer of Paints and Only Manufacturers are eligible to participate in the tender. Offers from Traders / Dealers / Distributors will be rejected.		
4	<p><u>Pre-Qualification Criteria (PQC):</u></p> <p><u>Experience criteria:</u></p> <p>A. Bidder/Manufacturer should have been in continuous business of paint coating formulation and manufacturing for at least past 5 years.</p> <p>B. Bidder/Manufacturer should have supplied at least 30% of the tender quantity for the group which the bidder has quoted to hydrocarbon, petrochemical, fertilizer, chemical processing industry, defence, railways, Manufacturing sector, offshore platforms or any PSUs/ Govt Companies in the past 2 years.</p> <p>C. Successful Purchase order execution for the category of paints in each group in the last two years to hydrocarbon, petrochemical, fertilizer, chemical processing industry, defence, railways, Manufacturing sector, offshore platforms or any PSUs/ Govt Companies.</p> <p>D. Supplier should provide Product data sheet (PDS) of items being offered along with the offer at the time of bid submission.</p>		

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Pre- Qualifying criteria for the vendors participating in "Open Tender for enquiry of **HPEP/CMM/Paints/RC /2025-26**– Reg.

Clause wise response of vendor is necessarily to be submitted for technical evaluation of technical bid

	<p><u>Financial criteria:</u></p> <p>A. Average Financial turnover during last three years ending 31st March of previous financial year i.e FY 2023-24 should be at least 8 Lakhs (if only quotes for Group A) , 32 Lakhs (if only quotes for Group B), 40 Lakhs (if quotes for both Group A & Group B). Audited Balance sheets, P&L statements to be submitted. Further, the tenderer fail to submit the figure (s) for 3 years, non-submitted year will be considered as “0” (Zero) for averaging the turnover.</p>		
	<p><u>Test facility:</u></p> <p>a) The paint manufacturer shall carry out the tests in reputed Government Laboratories (like National Test House Mumbai, National Test House Kolkata, Institute of Chemical Technology Mumbai, HBTI Kanpur, IICT Hyderabad) or any NABL Accredited LAB as a part of the qualification.</p> <p>b) The paint manufacturer shall furnish these test certificates along with all necessary supporting documents during the offer stage for technical acceptance.</p> <p>c) Test certificates which are more than 3 years old will not be considered.</p>		
5	<p>Items in the Annexure- I are divided into two groups (Group A and Group B).</p> <p>a) Evaluation shall be done on Group wise overall L1 Basis and awardal shall be done on Group basis (Group A & Group B) only.</p> <p>b) Bidder can opt for single group (i.e Group A or Group B) or both the groups (Group A& B).</p> <p>c) Bidders must quote for all items in a particular group mandatorily. Submission of offer for all items in a particular group is mandatory. If any bidder not quoted for any or multiple item in a particular group, their offers will be summarily rejected for that group.</p>		

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Pre- Qualifying criteria for the vendors participating in "Open Tender for enquiry of **HPEP/CMM/Paints/RC /2025-26**– Reg.

Clause wise response of vendor is necessarily to be submitted for technical evaluation of technical bid

6	Against each group in Annexure- I supplier should furnish clearly their offered product details. Supplier should quote for all items in a particular group mandatorily. If any group (i.e GROUP A & GROUP B) is not submitted by supplier, supplier should clearly mention the same.		
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Special Conditions of Contract (SCC) ANNEXURE – II

Sl	Special terms and conditions for Enquiry	Supplier Remark
1	This Tender is for entering into a Rate Contract for a period of one Year. The Rate Contract (RC) will be operated by BHEL HPEP Hyderabad Unit.	
2	Items shall be supplied as per BHEL attached Specification only. Vendor to confirm in technical offer.	
3	The period of this Rate Contract shall be 12(twelve) months from the date of award. The Contract may be extended for a period upto twelve months (12) on same Terms and Conditions of the Contract. BHEL reserves the right to foreclose the Contract before completion of extended time period. Separate individual Purchase Orders shall be placed as per the material requirement by BHEL. Supplier to supply the material against PO only.	
4	Supplier should submit test certificates for supply made as per applicable IS standard for all parameters for the offered product.	
5	The Supplier must provide the Material Safety Data Sheet (MSDS) of their offered product at the time of supply.	
6	The purchaser or its authorized representative shall have the right to inspect or to test the paints to confirm their conformity with the contract and in case any inspected / tested paints fail to perform to the stipulated specifications, the purchaser may reject them and the supplier shall either replace the rejected material, make all alterations necessary arrangements as per the specifications at free of cost to the purchaser. The items can be inspected at final destination. However, Manufacturer's Standard Test Certificates along with the Guarantee Certificate, indicating the conformation to the specification of the order should be submitted to the concerned consignee in advance.	
7	Supply shall be made in 20 ltr MS Drum . Hardener or any other material when ever supplied with paint also should be supplied in MS Drums/Containers only.	
8	QUANTITY VARIATION: The enquiry quantity shown in the annexure- I are tentative. Quantity tolerance of + /- 30% shall be applicable on overall total quantity of each group shown in the annexure-I. This is a rate contract and quantity mentioned against each item are tentative. Quantities are considered for purpose of bid evaluation. Quantity variation is applicable on Overall Qty in each group of the contract. Individual item quantity can vary to any extent as per actual requirement Suppliers are required to quote considering the same.	
9	Minimum/Maximum Ordered Qty of individual Purchase Order: a) Minimum order quantity of individual Purchase order issued under rate contract shall be 1000 ltr for each group (Overall PO Qty in a single PO), however, there shall be no limitation on number and quantity of items in a PO.	

	b) Maximum Order Quantity of individual Purchase Orders is limited to 6000Ltrs for Group A and 15000 Ltrs for Group B.	
10	Supplier shall provide technical services assistance to BHEL units where ever required with respect to training, application & usage of paints and other service reports from time to time.	
11	<p><u>Quality of Supplies & Inspection:</u> Supplier is responsible to supply the materials with high degree of quality in accordance with the product data sheets and as per the latest codes of practice. The supplier shall submit material test certificates, material safety data sheets, technical data sheets against each order along with the supply of materials. BHEL may carry out Inspection by itself or its authorized inspection agency prior to shipment. If the quality of materials supplied by the supplier fails below the expected standards, then the material shall be rejected and shall be replaced at no additional cost to BHEL. Rejected material to be taken back by vendor at their own cost within one month.</p>	
12	<p><u>Packing of materials:</u> Paint shall be supplied in manufacturers original containers with the material code & description, specification no., PO number with date, shade code/color, batch no, date of manufacture, expiry date. The data sheet, Material Test certificate/Certificate of compliance and MSDS shall be supplied for each lot, and to be kept in secure custody.</p>	
13	<p><u>FREIGHT & INSURANCE:</u> Transport and transit insurance shall be in the Supplier's scope on door delivery basis to BHEL stores. However, unloading of material in BHEL premises shall be BHEL responsibility.</p>	
14	<u>Payment Terms:</u> As mentioned in document HY: MM: ITB: Rev 14	
15	<u>Penalty:</u> As mentioned in document HY: MM: ITB: Rev 14	
16	<p><u>Delivery:</u> F.O.R. Destination basis up to BHEL Stores HPEP Hyderabad. Delivery period is 30 days from the date of placement of individual PO.</p>	
17	<p><u>Shelf Life :</u> The shelf life of paints supplied shall be as specified in the Supplier's guaranteed product data sheet. Shelf life shall be 12 months from the date of supply to BHEL, R C Puram, Hyderabad-32.</p>	
18	Whenever required by BHEL, Supplier has to re-validate the usability of their supplied material after expiry in BHEL stores and shall issue revised shelf life certificates for respective batches of the usable materials within a specified time frame.	
19	The RAL shade card for all the paints should be communicated during technical evaluation stage	

20	Supplier should comply with all statutory requirements pertaining to environmental standards for the Manufacturing, Packing, Supply and Transportation of Paints	
21	If during the tenure of the contract any technical problems are noted or otherwise there is delay in supplies, BHEL reserves the right to put on " Hold" on further supplies and take supplies from the other Supplier under risk purchase clause (In case of default /Late delivery, Purchaser (BHEL) Reserves the right to make alternative arrangement of procuring material at supplier's Risk and Cost).	
22	Compliance to document HY: MM: ITB: Rev 14. Supplier shall submit ITB Rev:14, specification and SCC duly filled and signed and stamped	
23	<u>Reverse Auction:</u> Reverse Auction is applicable. Group Wise Reverse Auction (RA) will be conducted and evaluation will be done on Group basis as BHEL RA Guidelines.	
24	Bidder shall submit the following documents along with their bid a. Copy of PAN Card. b. Copy of GSTIN. c. Copy of Cancelled Cheque. d. Copy of EFT Mandate duly certified by Bank.	
25	<u>Validity of Contract:</u> Rates should be valid for a period of ONE YEAR from the date of entering into Rate Contract. Rates quoted are on firm price basis and Price Variation Clause within this period will not be entertained. However, statutory levies and duties shall be applicable as per Government notifications time to time. Quantity increase, if any, shall be permitted on pro-rata basis for the extended period with the same rates as per rate contract.	
26	<u>Termination of Contract:</u> BHEL reserves right to terminate the contract at any time or stage during the contract period by giving 15 days' notice with or without assigning any reasons without any financial consideration/implication.	
27	<u>MII Purchase Preference:</u> Yes (Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)	
28	<u>MSE Purchase Preference:</u> Yes	
29	All other terms and conditions are as per HY:MM:ITB: Rev 14	



CORPORATE PURCHASING SPECIFICATIONS

AA56101

Rev. No.07

PREFACE SHEET

ANTI-CORROSIVE PRIMING PAINT

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE SHEET BEFORE ISSUE TO SUPPLIERS

Equivalent / Comparable Standards:

- INDIAN . IS:12744 – 1989 (Reaffirmed-2004)

Suggested/ Probable Suppliers and Grades:

- M/s Asian Paints
- M/s Berger Paints
- M/s Kansul Nerolac
- M/s Shalimar Paints
- M/s Grover & Weil
- M/s Akzo Nobel india

User plants & Replaced Plant Specifications / References:

- HEP, Bhopal
- HEEP, Haridwar
- HPEP, Hyderabad
- HPBP, Trichy

Revisions: As per 40 th MOM of MRC-CPO			APPROVED: INTER PLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO)		
Rev. No.07	Amd. No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
Dt:26-05-2012	Dt:	Year:	HEEP, Haridwar	Corp. R&D	Jan 1980

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CORPORATE PURCHASING SPECIFICATIONS

AA56101

Rev. No.07

PAGE 1 of 5

ANTI-CORROSIVE PRIMING PAINT

1.0 GENERAL:

This specification governs the quality requirements of air drying Anti Corrosive ready mixed Red oxide Zinc phosphate priming paint which shall be capable of being brushed, sprayed by conventional methods. The priming paint shall be suitable to be thinned with MTO/white spirit conforming to BHEL specification AA56701.

The paint shall be compatible with high quality full glossy outdoor finishing paint to BHEL specification AA56126 (IS: 2932), when surfaces primed with this paint are coated with 2 coats of finishing paint.

2.0 APPLICATION:

The material shall be intended for use as a primer coat in the painting system for protection of steel surfaces against corrosion for outdoor and indoor application on Electrical equipment. Normally, for best performance the surface to be coated shall be ensured free from oil, loose rust/dust etc., followed by blast cleaning to Sa 2 1/2.

This shall be followed by application of two coats of the priming so as to achieve dft of 30 microns, min.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following national standard and also meet the requirements of this specification.

IS: 12744 – 1989 (Reaffirmed 2004): Ready Mixed Paint, Air Drying, Red Oxide-Zinc Phosphate Priming-Specification.

4.0 COLOUR: The colour of the material shall be that of red oxide.

5.0 FINISH: Smooth and Matt to Egg shell flat

6.0 FREEDOM FROM DEFECTS:

The priming paint shall remain free from defects like hard settling of pigments, thick and hard skinning etc., when kept in closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried surface of the coating shall be smooth, uniform, homogenous appearance and shall be free from physical defects like, pinholes, wrinkles, hard particles, blisters, air bubbles etc.

7.0 CHEMICAL COMPOSITION:

The paint shall be formulated with anti-corrosive pigments like Red oxide of iron, Zinc phosphate, extenders etc., dispersed in unsaponifiable modified alkyd medium in solvent, thinner and drier in suitable proportions so as to satisfy the requirements prescribed in this

Revisions: As per 40 th MOM of MRC-CPO			APPROVED: INTER PLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO)		
Rev. No.07	Amd. No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
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CORPORATE PURCHASING SPECIFICATIONS



specification. The raw materials used in the formulation of the priming paint shall be of good quality and conform to following Indian standards.

- | | |
|----------------------------------|-------------|
| a) Zinc Phosphate | : IS: 10897 |
| b) Red Oxide of Iron | : IS: 44 |
| c) Petroleum hydrocarbon solvent | : IS: 1745 |

The supplier of the material has to certify that the paint supplied shall be free from lead or its compounds and also meets the legislative requirements of ISO 14001.

8.0 TEST SAMPLES AND TEST METHODS:

Tender samples will not be required when once the type approval is given and the supplier concerned declared that the material for which the tender is given of the same quality as the type approved sample.

500ml of thoroughly mixed sample representing lot be drawn from randomly selected drum and shall be sent to laboratory for testing. The testing shall be done in accordance with relevant part and section of IS: 101 or as specified in this specification.

9.0 PROPERTIES:

9.1. Drying Time

- | | |
|-------------|---------------------|
| Surface dry | : 2 hours, maximum |
| Hard dry | : 12 hours, maximum |

9.2. Consistency

Smooth and uniform and suitable for brushing without appreciable drag on the brush or spraying as required.

Efflux time by Ford cup No. 4, at $27 \pm 20^\circ\text{C}$: 80 - 120 secs.

9.3. Mass per Ten Litres:

13.5 kgs. min.

9.4. Flash Point:

30°C , min

9.5. Scratch Hardness:

When tested on coated panels air dried for 48 hrs and tested at a load of 1500g on steel panels and 1000g on tinned mild steel panels, no such scratch as to show the bare metal shall be produced.

9.6. Flexibility and Adhesion:

When tested on coated panels air dried for 48 hrs, no visible damage or detachment of coating shall take place and passes the test when tested by cylindrical bend test method.

9.7. Resistance to Salt Spray:

When tested as per test method of IS 2074, the test panel prepared from the followed by air drying for 48 hrs, material shall show no sign of corrosion after continuous exposure for 96 hrs, in salt spray cabinet.



CORPORATE PURCHASING SPECIFICATIONS

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9.8. Protection against Corrosion under Conditions of Condensations:

The coated panels air dried for 48 hrs, are subjected to continuous exposure, shall show no sign of deterioration of the coating & metal surface show no sign of corrosion.

9.9. COMPOSITION:

9.9.1. Pigment Content: $50 \pm 5\%$ by mass

9.9.2. Zinc Phosphate (IS 10897): 16.0%, min. by mass on pigment

9.9.3. Red Oxide AS Fe_2O_3 (IS 44): 50.0%, min. by mass on pigment

10.0 VOLUME SOLIDS: 40.0% min. (Pigment + Binder) by weight.

11.0 COMPATIBILITY TEST WITH COATS:

The primer paint shall be fully compatible with top coats like, High quality full glossy finishing paint conforming to AA56126 /IS 2932, when tested as per method prescribed in Annexure-1.

12.0 WET OPACITY (FOR INFORMATION ONLY):

Theoretical coverage: 10 sq.m / litre @ Dft: 35 microns.

13.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment.

In addition, the supplier shall ensure to enclose one copy of the test certificates along with their despatch documents to facilitate quick clearance of the material.

The test certificates shall bear the following information:

AA56101 Rev. No. 07 - ANTI-CORROSIVE PRIMING PAINT

BHEL order:

Supplier's Name and address

Identification/Trade Mark, if any.

Batch No/Lot No.:

Date of Manufacture and Expiry.

Lot Quantity:

Test results of clause 7.0 to 12.0.

Special Instructions, if any.

14.0 KEEPING PROPERTY:

When the material stored in a covered dry place in the original sealed container at under ambient conditions, the same shall retain the properties prescribed in this specification for a period of at least 12 months after the date of manufacture, which shall not be subsequent to the date of placing the order and not earlier than one month of the scheduled delivery date mentioned in BHEL order.

CORPORATE PURCHASING SPECIFICATIONS



15.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply. Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

16.0 PACKING & MARKING:

Unless otherwise stated, the paint shall be supplied in packing size as specified in BHEL order and shall be packed in air tight leak -proof metal container conforming to IS: 1407 and IS: 2552. Each container shall bear following information neatly written or pasted on the container.

AA56101 - ANTI-CORROSIVE PRIMING PAINT

BHEL order:

Name of supplier and address:

Identification/Trade Mark, if any.

Quantity of material:

Batch No/Lot No.:

Date of Manufacture and Expiry.

Special Instructions, if any:

17.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- 1) IS : 44
- 2) IS : 101
- 3) IS : 1407
- 4) IS : 1745
- 5) IS : 2074
- 6) IS : 2552
- 7) IS : 2932
- 8) IS : 10897
- 9) IS : 12744
- 10) IS : 13262
- 11) ASTM D 3359
- 12) AA56126
- 13) AA56701



CORPORATE PURCHASING SPECIFICATIONS

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ANNEXURE-I

TEST FOR COMPATIBILITY OF ANTI-CORROSION PRIMING PAINT (AA 56101) WITH TOP COATS OF FINISHING PAINT (AA56126/IS: 2932)

The compatibility of anti-corrosive priming paint conforming to AA 56101 with top coat finishing paint to AA 56126/IS: 2932, shall be checked by Cross-cut tape adhesion method prescribed in ASTM D 3359. The adhesion tape used shall conform to IS: 13262 or any other tape bearing ISI mark having sufficient adhesion strength.

A Steel plate of size 150x100mm is taken for testing compatibility. Thoroughly clean the plate with emery to make it free from rust, oil, dust etc. Apply two coats of homogenized anticorrosive priming paint after allowing coating to dry over night before, application of next coat.

Apply two coats of top coat finishing paint evenly covering plate completely. Allow the coatings, to dry for 48 hours at ambient conditions before performing the cross cut adhesion test.

Test method B shall be followed and the acceptance criteria shall be 4 B, i.e., small flakes of the coating material are detached at intersections and less than 5% of the area is affected



CORPORATE PURCHASE SPECIFICATION

AA 561 05

Rev. No. 07

PREFACE SHEET

CHEMICAL RESISTANT EPOXIDE RED OXIDE ZINC PHOSPHATE PRIMING PAINT

**FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS**

Comparable Standards:

1. INDIAN : IS: 14506 - 1998

Suggested/Probable Suppliers and Grades.

1. Refer plant vendors list.

User Plants /References:

1. HEEP, HARDWAR :
2. HPBP, TRICHY

Revisions :

CI 33.7 a) of MOM of MRC-CPO

APPROVED :

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JUNE, 1980



CORPORATE PURCHASE SPECIFICATION

AA 561 05

Rev. No. 07

PAGE 1 OF 4

CHEMICAL RESISTANT EPOXIDE RED OXIDE ZINC PHOSPHATE PRIMING PAINT

1.0 GENERAL:

This specification deals with the quality requirements of two pack Chemical resistant Epoxy Based Priming Paint pigmented with Red Oxide Zinc Phosphate.

2.0 APPLICATION:

The paint shall be used as a primer in the painting system for protection of steel work, both under marine and inland outdoor conditions.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply, in general, with the following national standards and also meet the requirements of this specification.

i) IS: 14506 - 1998 : Epoxy red oxide zinc phosphate weldable primer, two component.

4.0 COMPOSITION:

The paint consists of two components i.e. base and accelerator. The base contains epoxy binder suitably pigmented with red oxide and zinc phosphate and extenders. The accelerator is polyamide and solvent to cure the base of the paint system.

5.0 MIXING RATIO:

The components of paint are to be mixed as recommended in the product data sheet supplied by the manufacturer of the paint: The type and content of the binding material as determined by infra-red spectroscopy or thin layer chromatography shall be strictly adhered to the "Type approved sample".

6.0 COLOUR: Red oxide.

7.0 FINISH: Smooth and matt.

8.0 FREEDOM FROM DEFECTS:

The base of the paint system shall remain free from defects like hard setting of pigments, skinning and livering when kept in closed container till its shelf life.

9.0 SAMPLING: As per IS:101.

10.0 TECHNICAL REQUIREMENTS:

Unless otherwise specified, the sample (mixed paint) shall be tested in accordance with IS 101.

Revisions :

Cl 33.7 a) of MOM of MRC-CPO

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10.1 Mass per 10 litres : 12.0 kg, minimum

10.2 Consistency:
Paint shall be mixed so that it produces a smooth and uniform paint suitable for application.
40 - 60 secs by FC No.4 at $27 \pm 2^{\circ}$ C.

10.3 Drying time :

a) **Soft dry** : 4 hours, maximum.
b) **Hard dry** : 16 hours, maximum

10.4 Volatile matter, percent by mass : 30.0 maximum.

10.5 Pigment content, percent by mass: 40.0 minimum.

10.6 Volume solids, percent : 35.0, minimum.

10.7 Dry film thickness per coat : 25.0 microns, minimum.

10.8 Flash point : 20° C, minimum..

10.9 Pot life at ambient temperature (Annexure-A): 4.0 hours, minimum.

10.10 Zinc phosphate, percent by mass on pigment (Annexure-B):
16 percent by mass, minimum.

10.11 Scratch Hardness (IS: 101, Part 5/Sec. 1):

After the film is cured for 7 days and tested under of 2000gm, no such scratch as to show the bare metal shall be produced.

10.12 Flexibility and Adhesion (IS:101, Part 5 /Sec. 2):

The film shall not show sign of damage detachment or cracking when tested after 4 days of curing.

10.13 Type Test:
Salt spray test for 300 hours (IS:101, Part 6 /Sec. 1):

The test panel prepared from this material shall show no signs of corrosion after continuous exposure for 300 hours in salt spray cabinet.

11.0 TYPE APPROVAL:
Samples:
Samples for type approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.



CORPORATE PURCHASE SPECIFICATION

AA 561 05

Rev. No. 07

PAGE 3 OF 4

12.0 TEST CERTIFICATES

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment giving following information:

In addition, the supplier shall ensure to send one copy of test certificate along with the dispatch documents to facilitate quick clearance of the materials.

BHEL order

AA 561 05, Rev 07: Chemical resistant epoxide red oxide zinc phosphate priming paint

Manufacturers/suppliers Name:

Trade name/mark, if any:

Batch/Lot No.;

Quantity supplied:

Date manufacture & expiry:

Test results of clause 10.0

Mixing ratio

13.0 KEEPING PROPERTY

When stored in covered dry place in the original sealed containers under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture which shall be subsequent to the date of placement of BHEL order.

14.0 PACKING AND MARKING

Unless otherwise stated, base and hardener shall be packed separately in steel containers of approximate capacities. Each container shall bear the following information:

AA 561 05 : Chemical resistant epoxide red oxide zinc phosphate priming paint

BHEL Order No.

Manufacturers/ Supplier's name:

Trade name / mark , if any:

Batch/Lot No.:

Name of components:

Mixing ratio:

Quantity supplied:

Date of manufacture & expiry:

15.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1) IS:101

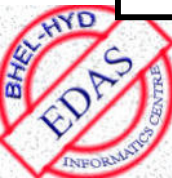
2) IS: 14506

ANNEXURE - A (Cl 10.9)

PROCEDURE FOR TESTING OF POT LIFE:

If the mixed paint, as recommended by the supplier, could be still thinned, the end of the working life (pot life) has not been reached. The end of the working life is reached when the test material (paint) gels, becomes stringy or can not be thinned for application. The time interval between the mixing time and time of gelling shall be reported as pot life of the mixed paint.

RESTRICTED USE



AA 561 05	CORPORATE PURCHASE SPECIFICATION	
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ANNEXURE - B (CI 10.10)

PROCEDURE FOR TESTING OF ZINC PHOSPHATE CONTENT:

I. General:

The pigment is extracted from the paint and pigment is taken for the determination of Zinc phosphate content.

II. Reagents required:

a) Quinoline solution:

50ml of quinoline is dissolved in 60ml of hydrochloric acid and 30ml of water with constant stirring. The solution is cooled and filtered. This is diluted to 1000ml and stored in a polythene bottle.

b) Citric molybdic acid reagent:

54gm of pure molybdic acid and 12gm of sodium hydroxide are dissolved in 400ml of hot water. 60gm of citric acid and 140ml of hydrochloric acid are added to 200ml of water. Now molybdic acid solution is added with citric acid solution and is made up to 1000ml. (The solution may be green or blue colour on its exposure to light). If necessary 0.5 percent potassium bromate solution is added until the green colour becomes pale. This solution is kept in a polyethylene bottle and stored in a dark place.

III. Procedure:

1.0gm of the sample is weighed into a 250ml beaker and 30ml of 1:1 nitric acid and 5ml of 1:1 hydrochloric acid is added. The content is boiled well and filtered and made up to 200ml.

50ml of aliquot is pipetted out into a 500ml conical flask and this is diluted to 100ml. 30ml of citric molybdic acid solution is added and boiled gently. 10ml of quinoline solution is added from burette with continuous swirling. (Add 3 to 4 ml drop wise and balance in steady stream).

The precipitate is filtered into a weighed Gooch crucible provided with glass fibre or filter paper previously dried at 250°C. The precipitate is washed with water and dried at 250°C. The dried precipitate (quinoline phosphomolybdate) is weighed and calculated for its weight by difference.

A blank determination is carried out in the same way as the determination but omitting the test solution.

Calculation:

$$\% \text{ Zinc phosphate, by mass} = \frac{(M_1 - M_0) \times 0.3816}{\text{Mass of sample in gm.}} \times 100$$

Where

M₁ = mass of precipitate in gm obtained in sample.

M₀ = mass of precipitate in gm obtained in blank.



CORPORATE PURCHASING SPECIFICATION

AA56106

Rev No.00

PREFACE SHEET

QUICK DRYING ANTICORROSIVE STOVING/AIR DRYING PRIMING PAINT

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Equivalent Standards:

Acceptable Commercial Grades/Suppliers:

- 1) M/s Alkali & Chemicals Corp. Ltd, Speed kote Primer
Gr: 32-145

User Plants and Replaced Plant Specifications/References:

1. HEP, BHOPAL : MC 56117

Revisions:

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CORPORATE PURCHASING SPECIFICATION

AA56106

Rev No. 00

PAGE 1 of 3

QUICK DRYING ANTICORROSIVE STOVING/AIR DRYING PRIMING PAINT

1.0 GENERAL:

This specification governs the quality of Quick Drying Anticorrosive Stoving/Air Drying Priming Paint which shall be capable of being brushed or sprayed coated by thinning suitably with white spirit conforming to corporate Purchasing Specification AA56701.

2.0 APPLICATION:

Used as Primer on the steel surfaces of indoor control panels and cubicals.

3.0 COLOUR:

Grey

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian Standard covering this material.

5.0 FINISH:

Matty.

6.0 FREEDOM FRM DEFECTS:

The paint shall remain free from defects like hard settling of pigments, excess skinning when kept in closed container and livering (excessive viscosity build up) during its rated shelf life.

7.0 CHEMICAL COMPOSITION:

The paint shall be based on a specially designed synthetic alkyd resin which can be air dried or stoved. The paint should contain a high proportion inorganic pigments/ extenders to give good filling properties

8.0 TEST SAMPLES:

Tender samples will not be required when once the type approval (Clause 10.0) is given and the supplier concerned declares that the material for which the tender is given is of the same quality as the type approved sample.

Representative samples of the material shall be drawn and treated as prescribed under clause 3 of IS: 101

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9.0 PROPERTIES:

When tested in accordance with relevant parts and clauses of IS: 101 – 1964, the test samples shall show the following properties.

9.1 Drying time (Cl.7.2 & 7.3.1, IS: 101):

Surface Dry : 1 hour max.

Hard dry : 6 hours max.

Tack free : 8 hours max.

9.2 Consistency(Cl. 7. 4, IS:101):

80 ± 10 seconds in cup No. 4 to IS: 3944 at 27°C.

9.3 Fineness of Grind (Cl.7. 6, IS: 101):

5 minimum on Hegman's gauge',

9.4 Spreading Capacity (Cl. 8, IS:101):

10 to 12 square metres per litre.

9.5 Scratch Hardness (Cl. 15.1, IS:101):

After the film is air dried for 48 hours and tested under a load of 1500 grams, no such scratch as to show the bare metal shall be produced.

9.6 Flexibility and Adhesion (Cl.16, IS: 101):

No visible damage or detachment of the film shall take place when tested after 48 hours of air drying.

9.7 Humidity Test (Cl. 18, IS:101):

The painted panel should not show any sign of deterioration and the metal surface no sign of corrosion.

9.8 Flash Point (Cl. 24, IS:101):

Not below 30°C.

9.9 Weight (Cl. 25, IS:101):

13.5 ± 0.5 kg per 10 litres.

9.10 Pigment And Non-Volatile Matter Content (Cl. 27, IS:101):

60 ± 3 percent by weight of the base paint.

9.11 Bump Test (B.S, 3900: Part E3:1966):

No visible damage or detachment of the film shall take place.

9.12 Facing And Rubbing Properties:

Wet rubbing shall be done after 16 hours of application. There shall be no peeling of the film and water proof emery paper of 220 grade should not get clogged with the paint. The painted surface shall be smooth and scratch free.

10.0 TYPE APPROVAL:

Samples for type approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.



CORPORATE PURCHASING SPECIFICATION

AA56106

Rev No.00

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11.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied giving the following information:

In addition, the supplier shall ensure to send one copy of the test certificates along with the despatch documents to facilitate quick clearance of the material.

AA56106 (Rev.00): Quick Drying Anticorrosive Stoving/Air Drying Priming Paint

BHEL Order No.:

Supplier's Name & Trade Mark, if any:

Batch No.

Date of Manufacture & Expiry:

Test results of clauses 9.0

12.0 KEEPING PROPERTY:

When stored in a covered dry place in the original sealed container under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture, which shall be subsequent to the date of placing the order.

13.0 PACKING & MARKING:

Unless otherwise stated, the paint shall be packed in 20 litre steel drums. Each container shall bear the following information:

AA56106 : Quick Drying Anticorrosive Stoving/Air Drying Priming Paint.

BHEL Order No.:

Manufacturer's/Supplier's Name:


Trade Mark, if any:

Batch No.:

Date of Manufacture & Expiry:

Quantity:

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<h2 style="margin: 0;">CHEMICAL RESISTANT HIGH BUILD EPOXIDE PRIMING PAINT</h2>																				
<p>1.0 GENERAL:</p> <p>This specification governs the quality requirements of two pack High Solids Epoxide Priming Paint suitable for application by brushing or spraying.</p>																				
<p>2.0 APPLICATION:</p> <p>Used as primer for “Polyurethane Finishing Paint” conforming to BHEL specification AA56142 to provide protection against chemical atmosphere.</p>																				
<p>3.0 COMPLIANCE WITH NATIONAL STANDARDS:</p> <p>There is no Indian standard covering this material. However, assistance has been derived from IS: 13238 & IS: 14209.</p>																				
<p>4.0 COLOUR:</p> <p>As specified in BHEL order.</p>																				
<p>5.0 FINISH:</p> <p>Smooth and matt or semi-gloss.</p>																				
<p>6.0 FREEDOM FROM DEFECTS:</p> <p>The paint shall remain free from defects like hard setting of pigments, skinning and livering (excessive viscosity build up) during its rated shelf life.</p>																				
<p>7.0 CHEMICAL COMPOSITION:</p> <p>The material shall be based on two component epoxy system suitably pigmented base and accelerator. Adequate quantity of inhibitive pigments like Zinc chlorite, zinc phosphate, etc., (Main pigment in total pigment shall be 95%, min.) shall be used. The mixing ratio of the base and accelerator shall be as per supplier’s recommendation or as per type approved sample.</p> <p>The type and content of the binding material as determined by infra-red spectrography or thin layer chromatography or any other suitable method shall have the weight per epoxy equivalent of 350-500 on non-volatile vehicle concentration tested as per IS:14209 or strictly adhered to the “Type Approved Sample”.</p>																				
<p>8.0 TEST SAMPLES:</p> <p>Tender samples will not be required when once the type approval (clause 11.0) is given and the supplier concerned declares that the material for which the tender is given is of the same quality as the type approved sample.</p> <p>Representative samples of the material shall be drawn and tested as prescribed in IS:101.</p>																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="padding: 5px;"> Revisions: Cl.34.11.37 of MOM of MRC-CPO </td> <td colspan="3" style="text-align: center; padding: 5px;"> APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO+NM) </td> </tr> <tr> <td style="width: 20%; padding: 5px;">Rev No.03</td> <td style="width: 20%; padding: 5px;">Amd No.</td> <td style="width: 20%; padding: 5px;">Reaffirmed</td> <td style="width: 20%; padding: 5px;">Prepared</td> <td style="width: 20%; padding: 5px;">Issued</td> <td style="width: 20%; padding: 5px;">Dt. of 1st Issue</td> </tr> <tr> <td style="padding: 5px;">Dt:15-11-2005</td> <td style="padding: 5px;">Dt:</td> <td style="padding: 5px;">Year:2014</td> <td style="padding: 5px;">HEP, Bhopal</td> <td style="padding: 5px;">Corp.R&D</td> <td style="padding: 5px;">January, 1991</td> </tr> </table>			Revisions: Cl.34.11.37 of MOM of MRC-CPO			APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO+NM)			Rev No.03	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue	Dt:15-11-2005	Dt:	Year:2014	HEP, Bhopal	Corp.R&D	January, 1991
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CORPORATE PURCHASING SPECIFICATION



9.0 PROPERTIES:

When tested in accordance with the relevant clauses and parts of IS:101, IS:2074, defence specification 1053 and appendix 1 & 2 of this specification, the test samples shall show the following properties:

9.1 Drying Time

Surface dry : 2 hours, maximum

Hard dry : 16 hours, maximum

Intercoat interval : 16 hours, maximum

9.2 Consistency:

Smooth uniform and suitable for brush or spray applications

9.3 Fineness of grind:

5 minimum of Hegman's gauge.

9.4 Pressure Test:

The metal surface shall not be rendered visible when the two test pieces are separated after the test was carried out.

Note: Pressure test shall be carried out after 7 days curing at room temperature.

9.5 Scratch Hardness:

After the film is cured for 7 days under ambient conditions and tested on a MS panel under a load of 2000 gms, no such scratch as to show the bare metal shall be produced.

9.6 Flexibility and adhesion test

The film shall not show sing of damage or detachment or cracking when tested after 7 days curing under ambient conditions by Erichsen Cupping Test upto 8 mm.

9.7 Weight:

14 ± 0.5 kg 10 litres of mixed paint

9.8 Impact Test (Defence specification 1053)

The film shall not show any sign of damage.

9.9 Solid Content

85 %, minimum by mass

9.10 Flash Point

Not below 21°C.

9.11 Chemical Resistance Test (APPENDIX - 1)

Panels prepared and tested in accordance with Appendix 1 to this specification, when immersed in the liquids at the temperature, time and concentration specified below shall not show any sign of deterioration.

- 10% Nitric acid by volume at 60 ± 2°C for 12 hours
- 20% Sulphuric acid by volume at 60 ± 2°C for 8 hours
- 10% Hydrochloric acid by volume at 60 ± 2°C for 24 hours
- 25% Sodium hydroxide by weight at 60 ± 2°C for 12 hours
- Petrol at room temperature for 24 hours
- Methylethyl ketone at room temperature for 24 hours



CORPORATE PURCHASING SPECIFICATION

AA56109

Rev No.03

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9.12 Pot life (APPENDIX - 2)

4 to 8 hours

10.0 SAFETY PRECAUTIONS:

The paint is likely to cause irritation to the skin. This may transpire into inflammation, swelling, rash of pustules on the hands, arms and occasionally on the whole body.

Following precautions should be observed while handling this material:

1. Work place and storage rooms should be adequately ventilated.
2. Before starting the work, hands should be washed with soap and water and good barrier cream applied.
3. Maximum care should be taken to avoid splashes on the skin.
4. Splashes on the skin should be immediately washed with soap and water.
5. After the work, hands, arms and face should be washed with soap and water followed by thorough drying with a clean towel.
6. Operator should use adequate safety appliances like mask, eye protector, etc.

11.0 TYPE APPROVAL:

11.1 Samples:

Samples for type approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

11.2 Type Tests:

Resistance to salt Spray:

The panel prepared from the material shall show no sign of corrosion after continuous exposure for 1000 hours in salt spray cabinet.

12.0 TEST CERTIFICATES

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment giving following information:

In addition, the supplier shall ensure to send one copy of test certificate along with the dispatch documents to facilitate quick clearance of the materials.

BHEL order No.:

AA56109, Rev03: CHEMICAL RESISTANT HIGH BUILD EPOXIDE PRIMING PAINT

Manufacturers/suppliers Name:

Trade name/mark, if any:

Batch/Lot No.;

Date manufacture & expiry:

Test results of clause 7.0 and 9.0

13.0 KEEPING PROPERTY

When stored in covered dry place in the original sealed containers under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture which shall be subsequent to the date of placement of BHEL order.

CORPORATE PURCHASING SPECIFICATION



14.0 PACKING AND MARKING

Unless otherwise stated, base and hardener shall be packed separately in steel containers of approximate capacities. Each container shall bear the following information:

AA56109: CHEMICAL RESISTANT HIGH BUILD EPOXIDE PRIMING PAINT

BHEL Order No.:

Manufacturers/ Supplier's name:

Trade name / mark, if any:

Batch/Lot No.:

Quantity supplied:

Date of manufacture & expiry: (The material shall have minimum 6 months shelf life at the time of supply)

15.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

16.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1) IS:101 2) IS: 2074 3) IS:13238 4) IS:14209 5) AA56142 6) DEF:1053

APPENDIX - 1

CHEMICAL RESISTANT TEST (CLAUSE 9.11)

15 x 100 mm mild steel panels shall be first cleaned from rust by rubbing with abrasive paper and suitable solvent.

One coat of the chromate primer is applied over the cleaned panel on both sides. After 24 hours of air drying one coat of the finish paint is applied. After 24 hours another coat of the finish is applied and dried at 60 to 65°C for 2 hours or alternatively cured for 7 days at room temperature. The sides of the panel shall be protected with wax coating.


The painted steel shall be tested by immersing in respective reagent solution in a closed desiccator and any damaging effect to the film is observed. Discolouration, softening and detachment of the film is not acceptable.

APPENDIX - 2


DETERMINATION OF POT LIFE (CLAUSE 9.12)

About 100 ml of the mixed paint prepared by mixing the base and accelerator in the recommended proportions is taken in a beaker. The paint shall be such that it should be usable by brush under a specified pot life of 6-12 hours at room temperature.

In order to see if the paint has jelled or not, a small quantity of the mixed paint is dissolved in the recommended thinner. It should not dissolve if the paint has jelled and vice-versa.

	<h1 style="margin: 0;">CORPORATE PURCHASING SPECIFICATION</h1>	AA56111 Rev No.01 PREFACE SHEET			
<h2 style="margin: 0;">ALKYD BASE RED OXIDE ZINC PHOSPHATE ANTI CORROSIVE PRIMING PAINT</h2> <p style="margin: 10px 0 0 0;">FOR INTERNAL USE ONLY</p> <p style="margin: 0 0 0 0;">REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS</p>					
<p>Comparable Standards:</p> <p>1. INDIAN : IS : 12744 - 1989 (Reaffirmed 1999)</p>					
<p>Suggested / Probable Suppliers and Grades:</p> <p>1. Plant vendors list</p>					
<p>User Plant References:</p> <p>1. HEP, BHOPAL : MC56127</p> <p>2. HPEP, HYDERABAD : HY0211190</p>					
Revisions: Cl.29.12 of MOM of MRC-C		APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO+NM)			
Rev No.01	Amd No.01	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
Dt:01-06-2001	Dt:15-10-2002	Year:2014	HEEP, Haridwar	Corp.R&D	October, 2000

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	<div>CORPORATE PURCHASING SPECIFICATION</div>		AA56111		
			Rev No. 01		
			PAGE 1 of 5		
<div>ALKYD BASE RED OXIDE ZINC PHOSPHATE ANTI CORROSIVE PRIMING PAINT</div>					
<div>1.0 GENERAL</div> <p>This specification governs the quality of Alkyd Base Red Oxide Zinc Phosphate anti corrosive synthetic priming paint. The paint shall be capable of being air/airless sprayed, brushed or roller coated by suitably adjusting the working consistency with white spirit conforming to BHEL CPS AA56701.</p> <p>The paint shall be compatible with High Quality Full Glossy Out Door Finishing Paint conforming to BHEL CPS AA56126, when surfaces primed with this paint are coated with two coats of finishing paint.</p>					
<div>2.0 APPLICATION</div> <p>This paint shall be used as primer coats on internal & external steel surfaces of electrical equipments.</p> <p>Generally, two coats of this priming paint with DFT of 60 microns, min shall be given before the top coat is applied.</p>					
<div>3.0 COMPLIANCE WITH NATIONAL STANDARDS</div> <p>The material shall comply with the requirements of the following national standard and also meet the requirements of this specification.</p> <p>IS: 12744 – 1989 (Reaffirmed 1999): Ready mixed paint, air drying, red oxide,zinc phosphate, priming.</p> <p>(With additional requirements of compatibility with top coat finishing paints as given in IS: 2932)</p>					
<div>4.0 COLOUR</div> <p>The colour shall be that of Red oxide.</p>					
<div>5.0 FINISH</div> <p>Smooth and matt to egg shell gloss.</p>					
<div>6.0 FREEDOM FROM DEFECTS</div> <p>The paint shall remain free from defects like hard settling of pigments, skinning etc., when kept in closed container and livering (excess viscosity build up) during its rated shelf life.</p> <p>The dried surface of the film shall be smooth matt and of homogenous appearance without wrinkles, pin holes, blisters or hard particles.</p>					
Revisions: Cl.29.12 of MOM of MRC-C			APPROVED: INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO+NM)		
Rev No.01	Amd No.01	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
Dt:01-06-2001	Dt:15-10-2002	Year:2014	HEEP, Haridwar	Corp.R&D	October, 2000

CORPORATE PURCHASING SPECIFICATION



7.0 CHEMICAL COMPOSITION

The paint shall essentially be composed of Red Oxide Zinc Phosphate anti-corrosive pigments with good quality extenders, completely dispersed in suitably modified alkyd medium, hydrocarbon solvents & driers, so that the product meets the requirements of this specification.

The supplier of the material has to certify that the paint supplied is free from natural resins & lead/lead base compounds considering the requirements of ISO 14001.

The raw materials used in the formulation of the paint shall conform to the following standards:

- | | |
|------------------------|--------------|
| a) Zinc phosphate | : IS : 10897 |
| b) Red Oxide of iron | : IS : 44 |
| c) Oil of turpentine | : IS : 6646 |
| d) Hydrocarbon Solvent | : IS : 1745 |
| e) Liquid driers | : IS : 385 |

8.0 TEST SAMPLES:

Tender samples will not be required when once the type approval (Clause 10) is given and the supplier concerned declares that the material for which the tender given, is of the same corporation quality as that of type approved sample.

Representative samples of the material shall be drawn after homogenising the contents, and treated as prescribed in IS: 101.

9.0 PROPERTIES

When the sample is tested in accordance with relevant parts & sections of IS:101, IS:2074, IS:12744, the samples shall show the following properties.

9.1 Drying Time

Surface dry : 2 hrs., max.

Hard dry : 12 hrs., max.

9.2 Relative consistency

Smooth & uniform, suitable for application by brushing without appreciable drag. Efflux time by Ford cup No. 4, at 27±2°C, shall be 80 - 120 seconds.

9.3 Water content (For information only)

0.5 %, maximum by mass.

9.4 Scratch hardness

After the test panel is dried for 48 hours and tested under a load of 1500 grams on S panel or 1000 grams on tinned MS panel, no such scratch as to show the bare metal shall be produced.

9.5 Flexibility & Adhesion

After the test panel dried for 48 hours, no visible damage or detachment of the coating shall take place when tested by bend test method.

9.6 Flash Point

30°C, min.



CORPORATE PURCHASING SPECIFICATION

AA56111

Rev No.01

PAGE 3 of 5

9.7 Mass per ten liter

13.5 ± 0.5 Kgs.

9.7.1 Spreading Capacity

9.8 Restriction of lead or lead compound content (For information only)

0.02 %, maximum.

9.9 Pigment & non-volatile matter content

9.9.1 Volume solid

40%, min. (Pigment + Binder).

9.9.2 Total pigment

50 ± 5 % by mass.

9.9.3 Zinc phosphate

16 % minimum by mass of total pigment.

9.10 Resistance to salt spray (IS: 2074)

The test panels dried for 48 hours are subjected to salt spray test for continuous exposure for 96 hours shall show no sign of corrosion.

9.11 Protection against corrosion under conditions of condensation (Type test)

The coated panels dried for 48 hours are subjected to continuous exposure, shall show no sign of deterioration of the coating and the metal surface no sign of corrosion.

9.12 Compatibility test

The primer should pass the compatibility test with High Quality Full Glossy Finishing conforming to AA56126, when tested as per Annexure 1.

10.0 TYPE APPROVAL

Samples for Type Approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

11.0 TEST CERTIFICATES

Unless otherwise stated, three copies of test certificates shall be supplied alongwith each consignment.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their despatch documents to facilitate quick clearance of the material.

The test certificate shall show the following information:

1. AA56111 (Rev.No.01: Alkyd base red oxide zinc phosphate anti corrosive priming paint
2. Colour:
3. Finish
4. Freedom from defects
5. Chemical composition
6. Consistency
7. Spreading capacity
8. Mass per 10 liters
9. Drying / Curing Time
10. Flash Point
11. Lead Content
12. Scratch Hardness
13. Flexibility and adhesion
14. Resistance to salt spray
15. Compatibility
16. Date of manufacture & Expiry

CORPORATE PURCHASING SPECIFICATION



12.0 KEEPING PROPERTY:

When stored in a covered dry place in the original sealed container under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture, which shall be subsequent to the date of placing the order.

13.0 PACKING & MARKING:

Unless otherwise stated, the paint shall be packed in 20 litres thoroughly cleaned new steel drums conforming to IS:2552, Grade : B2, with tight fitting lid having minimum diameter of 150 mm, and a cap seal.

Each drum shall bear the following information neatly written at suitable location:

1. AA56111: Alkyd base red oxide zinc phosphate anti corrosive priming paint
2. BHEL Order No.
3. Suppliers Name
4. Type no./ Brand name / Shade
5. Date of manufacture / Batch no.
6. Expiry date
7. Special Instructions (if any)
8. Quantity

14.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- | | | | |
|----------------------|----------------------|---------------|-----------------|
| 1. IS: 44 | 2. IS: 101 | 3. IS: 385 | 4. IS: 1745 |
| 5. IS: 2074 | 6. IS: 2552 | 7. IS: 2932 | 8. IS: 6646 |
| 9. IS: 10897 | 10. IS: 12744 | 11. IS: 13262 | 12. ASTM D 3359 |
| 13. BHEL CPS AA56126 | 14. BHEL CPS AA56701 | | |



CORPORATE PURCHASING SPECIFICATION

AA56111

Rev No.01

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ANNEXURE 1

TEST FOR COMPATIBILITY OF PRIMER (AA56111) WITH TOP COAT FINISHING PAINT (AA56126)

The compatibility of primer conforming to AA56111 with finishing paint conforming to AA56126, shall be checked by tape adhesion test generally in line with ASTM D3359 except for following changes as per performance requirement of the paint system;

The adhesion tape used shall be transparent cellulose tape conforming to IS: 13262.

The tape bearing ISI mark is also acceptable.

Two coats of finishing paint conforming to AA56126 are applied over two coats of primer conforming to AA 561 11 on cleaned and emieried steel plate of size 150 x 100 mm. Each primer / finish coat to be applied after 24 hours drying of previous coat, without any roughning by emery. Adhesion test to be performed after 48 hours application of final paint. Test panels shall be dried under ambient conditions.

Method B shall be followed and acceptance criteria will be 4B viz: small flakes of the coating are detached at intersections and less than 5% of area is effected.



CORPORATE PURCHASING SPECIFICATION

AA56112

Rev No.02

PREFACE SHEET

HIGH BUILD INTERMEDIATE EPOXY PAINT

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Equivalent/Comparable Standards:

User Plants and Replaced Plant Specifications/References:

- 1) HEEP, HARDWAR : HW56179
- 2) HPBP, Trichy :

Revisions:

As per clause 44.4.a) of MOM of MRC-CPO+NM

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(CPO+NM)

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CORPORATE PURCHASING SPECIFICATION

AA56112

Rev No. 02

PAGE 1 of 3

HIGH BUILD INTERMEDIATE EPOXY PAINT

1 GENERAL

This specification governs the quality requirements of cold cured two pack high build intermediate epoxy paint suitable for application by brushing or spraying.

2 APPLICATION

This material shall be used as an intermediate coat on epoxy primed surfaces to provide high build up coating thickness so as to protect the steel and other equipment's against corrosion due to humidity, saline environment and corrosive atmosphere.

3 COMPLIANCE WITH NATIONAL STANDARDS

There is no national standard covering this material.

4 COLOUR

Dark brown

5 FINISH

Smooth and matt.

6 FREEDOM FROM DEFECTS

The components of the paint shall remain free from defects like hard settling of pigments, skinning when kept in closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried surface shall be free from defects like bittyness, floating of pigments, wrinkles, orange peel, blisters, hard particles, pin holes etc.,

7 CHEMICAL COMPOSITION

The material shall be based on two components epoxy system and supplied as catalysed epoxy resin pigmented with MIO & TiO₂ and polyamide as an accelerator or hardener for cold curing. The mixing ratio of base and accelerator shall be as per supplier's recommendations. The type and content of the binding material i.e., epoxy resin, as determined by infrared spectrography or thin layer chromatography shall be strictly same as that of "Type Approved Sample".

The supplier should provide IR-Spectrograph in support of above composition.

The supplier of the material has to certify that the paint supplied is free from natural resins and free from lead or its compound to meet requirements of ISO 14001.

Revisions:

As per clause 44.4.a) of MOM of MRC-CPO+NM

APPROVED:

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Dt:

Year:2015

**8 TEST SAMPLE:**

Tender sample will not be required when once the type approval is given and the supplier concerned has to declare that the material for which the tender is given is of the same quality as the type approved sample.

Representative sample of the material shall be drawn and tested as per IS 101

9 PROPERTIES

Unless otherwise specified, when tested in accordance with relevant parts of IS 101, the test samples shall show the following properties:

9.1 Consistency

Smooth and homogenous.

9.2 Drying Time

Touch dry : 6 hours, max.

Hard dry : 12 hours, max.

9.3 Mass per ten litres

12.5-13.5 kgs.

9.4 Non-volatile matter

48 - 52% by weight.

9.5 Volume Solids

55%, min.

9.6 Resistance to salt spray

The panels prepared from the material shall show no sign of corrosion after continuous exposure to salt spray for a period of 7 days in the salt spray cabinet.

9.7 Flexibility & Adhesion

The film shall show no sign of damage, detachment or cracking when tested after 7 days curing at RT or 2 hours drying at 70 - 80°C after 24 hours air drying.

9.8 Scratch Hardness

The film shall show no sign of scratch so as to show the bare metal at a load of 1000 grams when tested after 7 days curing at RT or 2 hours drying at 70 - 80°C after 24 hours air drying.

9.9 Flash Point

Not below 25°C.

9.10 Dry film thickness

75-100 microns per coat as per BHEL standard AA0674105.

9.11 Pot life

4-6 hours, when mixed.



CORPORATE PURCHASING SPECIFICATION

AA56112

Rev No. 02

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10 TEST CERTIFICATE

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignments, giving the following information.

In addition, the supplier shall ensure to send one copy of the test certificates along with the despatch documents to facilitate quick clearance of the material.

AA56112, Rev 02:HIGH BUILD INTERMEDIATE EPOXY PAINT

BHEL Order No.

Manufacturers/ Supplier's name

Trade name / mark, if any

Batch/Lot No.

Date of manufacture and expiry

Test results of clause 7 to 9

T.C. No & date

Mixing ratio

11 KEEPING PROPERTY

When stored in covered dry place in the original sealed containers under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of six months after the date of manufacture which shall be subsequent to the date of placement of BHEL order.

12 PACKING AND MARKING

Unless otherwise stated, base & hardener shall be packed separately in steel containers of 4 litres capacity.

Each container shall bear the following information:

AA56112: HIGH BUILD INTERMEDIATE EPOXY PAINT

BHEL Order No.

Manufacturers/ Supplier's name:

Trade name / mark, if any:

Batch/Lot No.:

Name of components:

Mixing ratio:

Quantity supplied:

Date of manufacture & expiry:

13 ENVIRONMENTAL REQUIREMENTS

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

14 REFERRED STANDARDS (Latest Publications Including Amendments)

- 1) IS 101
- 2) AA0674105



CORPORATE PURCHASE SPECIFICATION

AA 561 13

Rev. No. 02

PREFACE SHEET

INORGANIC ETHYL ZINC SILICATE PRIMER

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Comparable Standards:

1. INDIAN : IS 14946-2001, Main coat

Suggested/Probable Suppliers and Grades:

1. CDC Carbolin :
2. Asian paints :
3. Goddard Nerolac Paints :
4. Sigma coatings :

User Plants /References:

1. HARDWAR : HW 56175
2. BHOPAL :
3. TRICHY :
4. HYDERABAD :

Revisions :

As per 40th MOM of MRC-CPO

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Corp. R&D

JUNE, 2001



CORPORATE PURCHASE SPECIFICATION

AA 561 13

Rev. No. 02

PAGE 1 OF 4

INORGANIC ETHYL ZINC SILICATE PRIMER

1.0 GENERAL

This specification prescribes the quality requirements and application procedure for two components, air drying, Inorganic Zinc Ethyl Silicate priming paint. This priming paint when applied on steel structures provides excellent resistance to temperature, soil chemicals, salts, water, and chemical resistance under marine conditions and outside weather ability.

2.0 APPLICATION

The material shall be intended for use as a primer coat in the painting system on new steel structures internally and externally. Normally, for best performance, the surface to be coated shall be ensured free from oil, loose rust/dust etc., followed by blast cleaning to Sa 2 ½ min. with a surface profile of 35 to 50 microns. This shall be followed by application of single coat of the priming paint by spray method so as to achieve dry film thickness t of 65-75 microns. The surface profile after blasting shall be 20 –35 microns.

3.0 COMPLIANCE WITH NATIONAL STANDARDS

The material shall comply with the requirements of following Indian standard and also, meet other requirements of this specification.

IS: 14946-2001, Main coat: Zinc Ethyl Silicate Primer, Two Components

4.0 COLOUR

The colour of the material shall be Grey.

5.0 FINISH

Smooth and Matt.

6.0 COMPOSITION

The material shall be two components moisture and self cured Inorganic Ethyl Silicate Binder pigmented with zinc metal powder conforming to IS: 14355 and having a purity of 99% and particle size of 4-5 microns, in the recommended proportion. The coating of this material attains water resistance within 30 minutes of application and remains unaffected by rains, condensation or dew etc. The manufacturer shall specify the principal type of binder used.

The supplier of the material shall declare that components of paint supplied shall meet the legislative requirements ISO: 14001.

Revisions:

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AA 561 13	CORPORATE PURCHASE SPECIFICATION	
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PAGE 2 OF 4		

7.0 MIXING RATIO:
The components of paints are to be mixed in the proportion as recommended by supplier of the material.

8.0 TEST METHODS:
Unless specified otherwise, tests shall be conducted as prescribed in relevant parts and section of Indian standard IS: 101 and IS: 14946. The test panels shall preferably be prepared on blast cleaned surface.

9.0 PROPERTIES:
The material shall meet the following technical requirements:

9.1 DRYING TIME:
Surface dry : 15 minutes, max.
Hard dry : 2 hrs., min.
Time to topcoat : 24 hrs., min.

9.2 CONSISTENCY:
The liquid component mixed with powder shall be suitable for application by spray as such or when thinned in the proportions at specified by the manufacturer.

9.3 FLASH POINT: Not below 15° C

9.4 MASS PER TEN LITRES: 20 kgs., min.

9.5 VOLUME SOLIDS: 60.0 % , min.

9.6 POT LIFE OF MIX (ANNEXURE D OF IS: 14946): 4 hrs., min. at 30⁰ C

9.7 DRY FILM THICKNESS:
65-75 microns per cot when measured after 72 hrs. of curing.

9.8 RESISTANCE TO SALT SPRAY TEST (TYPE TEST):
The material shall pass resistance to salt spray test, when test panels cured for 72 hrs. are subjected to continuous exposure for 2000 hrs.

9.9 PROTECTION AGAINST CORROSION UNDER CONDITIONS OF CONDENSATION (TYPE TEST):
The material shall pass the test, when test panels cured for 72 hrs., are subjected to exposure at specified conditions for 2000 hrs.

9.10 HEAT RESISTANCE TEST:
The film shall not show signs of cracking, blistering or flaking when coated test panels air dried for 48 hrs., are kept at 400±10⁰C for 6 hrs followed by plunging in cold water-three cycles, min.



CORPORATE PURCHASE SPECIFICATION

AA 561 13

Rev. No. 02

PAGE 3 OF 4

9.11 COMPOSITION:

9.11.1 SOLID CONTENT:

68%, min. by weight of mixed paint.

9.11.2 TOTAL METALLIC ZINC CONTENT (ANNEXURE B OF IS : 14946):

75%, min. by weight in non-volatile portion of the paint.

9.12 MUD-CRACKING TEST:

The coating applied to dry film thickness of 120 microns minimum, shall not show any mud cracking when viewed under 10 X magnification.

9.13 SEDIMENTATION TEST:

There shall not be any segregation of zinc powder from the base material within 2 hrs in the mixed paint.

9.14 CURE TEST:

The coated test panels air dried for 48 hrs shall pass the cure test when tested according to test procedure given in ASTM D 4752.

10.0 KEEPING PROPERTY

When stored in covered dry place in the original sealed containers under normal ambient conditions, the liquid portion shall not show thickening, curdling, gelling or hard caking and also retain the properties of mixed paint prescribed in this specification for a period of six months from date of delivery.

11.0 TEST CERTIFICATES

Unless otherwise stated, three copies of test certificates and product data sheet shall be supplied along with each consignment giving following information:

In addition, the supplier shall ensure to send one copy of test certificate along with the dispatch documents to facilitate quick clearance of the materials.

AA 561 13, Rev 02: Inorganic ethyl zinc silicate primer

BHEL order No. & Date

Manufacturers/suppliers Name:

Trade name/mark, if any:

Batch/Lot No.;

Quality supplied:

Date manufacture & expiry:

Test results as per 9.0

Mixing ratio

Technical information, if any:

**12.0 PACKING AND MARKING:**

Unless otherwise stated, the components of paint shall be supplied separately in moisture and leak proof containers in packing size as specified in the BHEL order.

Each container of the consignment shall bear the following information printed or pasted at suitable place so as to protect it from damage during transportation and handling.

AA 561 13: Inorganic ethyl zinc silicate primer.

BHEL order No. & Date

Manufacturers/ Supplier's name:

Trade name / mark , if any:

Batch/Lot No.:

Name of contents:

Mixing ratio:

Quantity in container:

Date of manufacture & expiry:

Technical information, If any:

13.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

14.0 PRECAUTIONS

- a) Use off the mixed paints within stipulated pot life i.e., 4 hrs after mixing and should be continuously agitated during application.
- b) Inorganic Zinc silicate primer should not be applied at relative humidity below 50 % and the surface should remain free from condensation at the time of application.
- c) After completion of the work, the application equipment must be cleaned thoroughly immediately with thinner and kept safely for next use.
- d) The surface to be painted must be blast cleaned to Sa 2 ½, min. and the painting shall be done by spray method uniformly. However, brush may be used for touch up of local areas only.

15.0 REFERRED STANDARDS (Latest Publications Including Amendments)

1) IS: 101

2) IS: 14355

3) IS: 14946

3) AA 067 41 01

5) ASTM D 4752



CORPORATE PURCHASE SPECIFICATION

AA 561 26

Rev No. 06

PREFACE SHEET

HIGH QUALITY FULL GLOSSY OUT DOOR FINISHING PAINT

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Comparable Standards:

1. INDIAN : IS : 2932-2003

Suggested/Probable Suppliers and Grades:

- | | | | |
|----|-----------------------|---|--------------------------------------|
| 1. | M/s. Shalimar Paints | : | Superlac High gloss Synthetic Enamel |
| 2. | M/s. Asian Paints | : | HQFGPC 1458 Enamel |
| 3. | M/s. Berger Paints | : | Luxol High gloss Synthetic Enamel |
| 4. | M/s. Goodlass Nerolac | : | |

User Plant References:

- | | | | |
|----|---------------|---|-------------------|
| 1. | BHOPAL | : | PS 56131 A |
| 2. | HEEP, HARDWAR | : | 504. 401 |
| 3. | HYDERABAD | : | HY 021 11 90 |
| 4. | TIRUCHY | : | IS : 2932, Type 1 |

Revisions: As per 40th MOM of MRC - CPO

APPROVED:
INTERPLANT MATERIAL
RATIONALISATION COMMITTEE-MRC (CPO)

Rev. No. 06

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January, 1980



CORPORATE PURCHASING SPECIFICATION

AA 561 26

Rev. No. 06

PAGE 1 OF 6

HIGH QUALITY FULL GLOSSY OUT DOOR FINISHING PAINT

1.0 GENERAL

This specification governs the quality requirements of synthetic resin, full glossy high quality air drying finishing paint.

The paint shall be capable of being brushed sprayed or flow-coated by thinning suitable with white spirit conforming to BHEL specification AA 56101.

The paint shall be compatible on surface primed with any alkyd based primer conforming to IS : 2074, IS:12744 and BHEL specification AA 56101: Anti corrosive priming paint.

The compatibility shall be checked by cross-cut Adhesion test detailed in Annexure-1.

2.0 APPLICATION

Suitable for application on the surface of outdoor equipment.

3.0 COLOUR

As specified on BHEL order.

4.0 COMPLIANCE WITH NATIONAL STANDARDS

The material shall comply with the requirements of the following national standards and also meet the requirements of this specification.

IS:2932 - 2003 SPECIFICATION FOR ENAMEL SYNTHETIC, EXTERIOR;
(a) UNDER COATING (a) FINISHING

with additional requirements of compatibility with priming paint to IS:2074/IS:12744.

5.0 FINISH: Smooth and full glossy.

Revisions :As per 40th MOM of MRC CPO

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6.0 FREEDOM FROM DEFECTS:

The paint shall remain free from defects like hard settling of pigments, skinning when kept in a closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried paint shall be free from defects like bittyness, floating of pigments, surface haze, orange peeling, colour fading, wrinkles, etc.

7.0 CHEMICAL COMPOSITION

7.1 Pigments and Total Solids

Only non-chalking rutile titanium dioxide shall be used as a white pigment and any other pigment used shall be light-fast. Extenders shall not be used in general. If absolutely necessary, good quality extenders upto a maximum of 5 percent may be used.

The total volume of solids in the paint shall not be less than 35%. Pthalic Anhydride content shall be 20% min. and shall be certified by the supplier.

7.2 Binder

The binder shall be long oil synthetic alkyd resin free from natural rosins and their derivatives or their modification in any form when tested in accordance with IS:101, part 9, sec 2. The composition of the binder as determined by infra-red sepectrography shall be strictly adhered to the type approved sample in bulk supply.

8.0 TEST SAMPLES

Tender samples will not be required when once the type approval is given and the Supplier concerned declares that the material for which the tender is given is of the same quality as the type approved sample.

Representative samples of the material shall be drawn and treated as prescribed in IS: 101.

9.0 PROPERTIES

Unless otherwise specified, when tested in accordance with IS:101 and IS:2932, the test samples shall show the following properties:

9.1 Drying Time

Surface dry	: 4 hours, max.
Hard dry	: 12 hours, max.
Tack free	: 24 hours, max.



CORPORATE PURCHASE SPECIFICATION

AA 561 26

Rev. No. 06

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9.2 Consistency

Shall be smooth, uniform and suitable for brushing.
80 to 120 seconds at $27 \pm 2^{\circ}\text{C}$ when measured with Ford cup No. 4.

9.3 Gloss 60 deg (Type Test)

Above 71.

9.4 Accelerated Storage Stability Test, 60°C , 96 hours (IS:2932 Annexure F)

Shall pass the test.

9.5 Scratch Hardness after 48 hours of air drying

The test shall be carried out with 1000 g.
No scratch as to show base metal.

9.6 Flash Point

Not below 30°C

9.7 Weight

9.0 kg per 10 litres, min
However it shall be within $\pm 3\%$ of the approved sample of each colour.

9.8 Accelerated Weathering Test


After 21 days exposure under accelerated weathering conditions, the film shall not show any sign of general breakdown, and retain a gloss of 40% of original value.

9.9 Resistance To Acid (IS:2932 Annexure D)

The film shall not show signs of disintegration or change of colour. The loss of gloss shall not be more than 50% of the original gloss.

9.10 Resistance To Alkali (IS:2932 Annexure E)

The film shall not show signs of disintegration or change of colour. The loss of gloss shall not be more than 50% of the original gloss.

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9.11 Flexibility and Adhesion

No visible damage or detachment of the film after 96 hours air-drying at room temperature followed by cooling for 5 hours at 0°C.

The test shall be carried out on the cold film, care being taken to ensure that the temperature of the panel and the rods does not exceed 0°C during the bending operation.

9.12 Fineness of Grind

Not more than 15 microns.

9.13 Compatibility with Primer to AA 56101 (IS:2074/IS:12744)

Shall pass the test, when tested as per Annexure I.

10.0 TYPE APPROVAL

10.1 Sample

Sample for type approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

10.2 Type Test

Outdoor Durability Test (IS:2932)

Painted panels prepared and tested as per Appendix C as per C-3 IS:2932 shall satisfy the requirements laid down in the standard for at least 12 months after painting.

11.0 TEST CERTIFICATES

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment giving following information.

In addition, the supplier shall ensure to enclose one copy of test certificate along with their dispatch documents / packing list to facilitate quick clearance of the material. The test certificates shall bear the following details:



CORPORATE PURCHASE SPECIFICATION

AA 561 26

Rev. No. 06

PAGE 5 OF 6

- | | |
|---------------------------------|--|
| 1. AA 56126 (Rev.No.06) : | High Quality Full Glossy outdoor Finishing paint |
| 2. Colour: | 3. Finish |
| 4. Freedom from defects | 5. Chemical composition |
| 6. Consistency | 7. Spreading capacity |
| 8. Mass per 10 liters | 9. Drying / Curing Time |
| 10. Flash Point | 11. Lead Content |
| 12. Scratch Hardness | 13. Flexibility and adhesion |
| 14. Compatibility | 15. Date of manufacture & Expiry |
| 16. Accelerated weathering test | 17. Fineness of grind |
| 18. Resistance to acid | 19. Resistance to alkali |
| 20. Accelerated storage test | |

12.0 KEEPING PROPERTY:

When stored under cover in a dry place in the original sealed container at "normal temperature conditions", the material shall retain the properties prescribed in this specification for a period of not less than 12 months after the date of manufacture which shall not be earlier than one month from the scheduled delivery date mentioned in BHEL order.

13.0 PACKING & MARKING:

Unless otherwise stated, the paint shall be packed in 20 litre/ 4 litre steel drums, confirming to IS:2552 & IS:1407. Each container shall bear the following information:

1. AA 56126 : High Quality Full Glossy Outdoor Finishing Paint
2. BHEL Order No.
3. Suppliers Name
4. Type no./ Brand name / Shade
5. Date of manufacture / Batch no.
6. Expiry date
7. Special Instructions (if any)
8. Quantity

14.0 ENVIRONMENTAL REQUIREMENTS :

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

15.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- | | | | | |
|-----------------|-------------|-------------|-------------|--------------|
| 1. IS : 101 | 2. IS:1407 | 3. IS:2074 | 4. IS:2552 | 5. IS:2932 |
| 6. IS:12744 | 7. IS 13262 | 8..AA 56101 | 9. AA 56126 | 10. AA 56701 |
| 11. ASTM D 3359 | | | | |

AA 561 26	CORPORATE PURCHASE SPECIFICATION	
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ANNEXURE - 1 (Cl. 1 & 9.13)

TEST FOR COMPATIBILITY OF FINISHING PAINT (AA 561 26) WITH PRIMER (AA 561 01)

The compatibility of finishing paint to AA 561 26 with primer AA 561 01 shall be checked by tape adhesion test generally in line with ASTM D-3359 except for the following changes as per performance requirement of the paint system.

The adhesion tape used shall be transparent cellulose tape conforming to IS:13262. Tape bearing BIS Certification mark is also acceptable.

2 coats of finishing paint to AA 561 26 are to be applied over 2 coats of primer to AA 561 01 on cleaned and emiered steel plate of size 150x100 mm. Each primer finish coat to be applied after 24 hrs. drying of previous coat without any roughening by emery.

Adhesion test shall be performed after 48 hours of air drying of final coat. Test panels are to be dried at ambient temperature.

Method - B shall be followed and acceptance criteria will be 4B Viz. Small flakes of the coating are detached at intersections and less than 5% of area is effected.



CORPORATE PURCHASING SPECIFICATION

AA56127

Rev No.02

PREFACE SHEET

NON – YELLOWING FULL GLOSSY WHITE PAINT

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Comparable Standards:

1. INDIAN : IS : 2932 – 1993 (Reaffirmed 2001)

Suggested / Probable Suppliers and Grades:

1. M/s. Berger Paints : BHEL - White
2. M/s. Shalimar Paints : Superlac white (40/57/61)
3. M/s. Goodlass Nerolac : 250/100/10
4. M/s. Asian Paints : Colite Synthetic Enamel white

User Plant References:

1. HEP, BHOPAL : MC56133
2. HEEP, HARDWAR : MC56133
3. HPEP, HYDERABAD : HY0211190
4. HPBP, TIRUCHY : TP12001157

Revisions:

Refer Cl.28.3 of MOM of MRC-(C)

APPROVED:INTERPLANT MATERIAL RATIONALISATION
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HEP, Bhopal

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CORPORATE PURCHASING SPECIFICATION

AA56127

Rev No. 02

PAGE 1 of 4

NON – YELLOWING FULL GLOSSY WHITE PAINT

1.0 GENERAL

This specification governs the quality requirements of non-yellow full glossy white paint which shall be capable of being brushed, sprayed or flow coated by thinning suitable with white spirit conforming to BHEL CPS No. AA56701.

The paint shall be compatible on surface primed with primer conforming to BHEL CPS No. AA56101-Anti-corrosive priming paint.

2.0 APPLICATION

Suitable for application on the surface of outdoor and indoor electrical equipment.

3.0 COLOUR

White.

4.0 COMPLIANCE WITH NATIONAL STANDARDS

There is no national standard covering this type of material. However, assistance has been derived from the following national standard.

IS:2932 –1993(Reaffirmed 2001):Enamel, Synthetic, Exterior (a) Under coating, (b) Finishing.

5.0 FINISH

Smooth and full glossy.

6.0 FREEDOM FROM DEFECTS

The paint shall remain free from defects like hard setting of pigments, skinning when kept in a closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried paint film shall be free from defects like bittyness, floating of pigments, surface haze, orange peeling, yellowing tendency, wrinkles, etc.

7.0 TEST SAMPLES:

Tender samples will not be required when once the type approval is given and the supplier concerned declares that the material for which the tender is given is of the same quality as the type approved sample.

Representative samples of the material shall be drawn and treated as prescribed in IS:101.

Revisions:

Refer Cl.28.3 of MOM of MRC-(C)

APPROVED:INTERPLANT MATERIAL RATIONALISATION
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CORPORATE PURCHASING SPECIFICATION



8.0 PROPERTIES:

When tested in accordance with IS:101, the test samples shall show the following properties.

8.1 Drying Time:

Surface dry : 2½ hours maximum.

Hard dry : 16 hours maximum.

8.2 Consistency:

80 to 120 seconds at 27 ± 2°C in ford cup No. 4.

8.3 Fineness Of Grind:

6 minimum on Hegman's gauge.

8.4 Gloss at 60 Deg:

61 minimum, when supplied.

8.5 Scratch Hardness:

1000g, minimum

8.6 Weight:

11.5 kg ± 0.5kg per 10 litres.

8.7 Non-volatile Matter Content:

60 percent minimum by weight of the base paint.

8.8 Accelerated Weathering Test(To be certified by the supplier):

After 21 days exposure under accelerated weathering conditions, the film shall not show any sign of general breakdown.

8.9 Freedom from Yellowing:

Apply a coat of the paint by brushing over a cleaned mild steel panel of size 150 mm x 150mm. Allow the paint to dry for 24 hours. The weight of the dried film should be in accordance with IS:101 (27 to 34 g/m in this case). Apply a second coat of the paint in a similar manner and allow it to dry for another 24 hours.

The panel prepared as above, after ten days of exposure to darkness shall not have darkened or yellowed in colour when compared with a freshly prepared panel from the same paint in the same manner.

9.0 TYPE APPROVAL:

9.1 Samples:

Samples for type approval testing shall be accepted only from those manufactures whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

9.2 Type Test:

9.2.1 Chemical Composition:

9.2.1.1 Pigments:

22 ± 2% by weight of base paint.



CORPORATE PURCHASING SPECIFICATION

AA56127

Rev No.02

PAGE 3 of 4

9.2.1.2 Rutile Titanium Dioxide:

90% minimum by weight of pigment.

9.2.1.3 Zinc Oxide:

10% maximum by weight of pigment.

NOTE:

No lead pigment shall be used. Extenders shall not be used in general. If absolutely necessary good quality extenders upto a maximum of 5% may be used.

9.2.1.4 Binder:

The binder shall be based on oil modified alkyd resin. Modifying oils shall be of non-yellowing type eg. kardyseed oil, dehydrated castor oil, soyabean oil etc. Other binders like methyl methacrylate acrylated alkyds may also be used. It shall be free natural or modified natural resins.

9.2.2 Outdoor Durability Test (IS:2932):

Painted panels prepared and tested as per IS: 2932 shall satisfy the requirements laid down in the standard for at least 12 months after painting.

9.2.3 Gloss Retention:

The gloss after outdoor exposure for six months shall not be less than 50% of the original value.

9.2.4 Protection Against Corrosion under conditions of condensation (Type Text)

The painted film shall not show any sign of deterioration and the metal surface non signs of corrosion.

10.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment.

In addition, the supplier shall ensure to enclose one copy of test certificate along with their dispatch documents to facilitate quick clearance of the material.

The test certificates shall show the following details.

- | | |
|--|----------------------------------|
| 1. AA56127 (Rev.No.02):NON – YELLOWING FULL GLOSSY WHITE PAINT | |
| 2. Colour: | 3. Finish |
| 4. Freedom from defects | 5. Chemical composition |
| 6. Consistency | 7. Spreading capacity |
| 8. Mass per 10 liters | 9. Drying / Curing Time |
| 10. Heat resistance test | 11. Resistance to Oil |
| 12. Flash Point | 13. Lead Content |
| 14. Scratch Hardness | 15. Flexibility and adhesion |
| 16. Resistance to salt spray | 17. Chemical Resistance test |
| 18. Compatibility | 19. Date of manufacture & Expiry |
| 20. Accelerated weathering test | 21. Leafing property |

11.0 KEEPING PROPERTY:

When stored under cover in a dry place in the original sealed container at ambient temperature, the material shall retain the properties prescribed in this specification for a period of not less than 12 months after the date of manufacture which shall not be earlier than one month from the scheduled delivery date mentioned in BHEL order.

**CORPORATE PURCHASING
SPECIFICATION****12.0 PACKING & MARKING:**

Unless otherwise stated, the paint shall be packed in 20 litre steel drums. Each container shall bear the following information:

1. AA56127 (Rev.No.02):NON – YELLOWING FULL GLOSSY WHITE PAINT.
2. BHEL Order No.:
3. Suppliers Name:
4. Type no./ Brand name / Shade:
5. Date of manufacture / Batch no.:
6. Expiry date:
7. Mixing ratio (if any):
8. Special Instructions (if any):
9. Quantity:

13.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1. IS : 101
2. AA 56101
3. AA 56701



CORPORATE PURCHASING SPECIFICATION

AA 561 31

Rev. No. 07

PAGE 1 OF 5

CHEMICAL RESISTANT EPOXIDE FINISHING PAINT

1.0 GENERAL:

This specification governs the quality requirements of Chemical resistant epoxide finishing paint (two pack system) suitable for application by brushing or spraying.

The paint shall be compatible on surfaces painted with epoxide priming paint conforming to BHEL specification AA 561 05.

2.0 APPLICATION:

To protect the outside surfaces of equipment from the effects of salty atmosphere, atmospheric gases forming acids with water and other mineral acids.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no national standard covering this material. However, assistance has been derived from the following national standard:

IS: 14209-1994: Epoxy Enamel, Two Component, Glossy.

4.0 COLOUR:

As specified on BHEL order.

5.0 FINISH:

Smooth and full glossy.

6.0 FREEDOM FROM DEFECTS:

The paint shall remain free from defects like hard settling of pigments, skinning when kept in closed container and livering (excess viscosity build up) during its rated shelf life.

The dried paint film shall be free from defects like bittyness, floating of pigments, wrinkles, orange peeling, surface haze, colour fading, hard particles, etc.,

Revisions:

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JANUARY, 1980

**7.0 CHEMICAL COMPOSITION:**

The material shall be based on two components epoxy system with suitable pigments and supplied as base and accelerator. The mixing ratio of base and accelerator shall be as per supplier's recommendations. The type and content of the binding material shall be based on epoxy resin with an epoxy content of 350 to 500.

The material when determined by IR spectography or thin layer chromatography shall be strictly adhered to the **TYPE APPROVED SAMPLE**.

8.0 TEST SAMPLES:

Tender samples will not be required when once the type approval is given and the supplier concerned has to declare that the material for which the tender is given is of the same quality as the type approved sample.

Representative samples of the material shall be drawn and treated as per IS 101.

9.0 PROPERTIES:

Unless otherwise specified, when tested in accordance with relevant parts of IS : 101, the test samples shall show the following properties:

9.1 Consistency:

40 - 60 seconds in Ford cup No. 4 at $27 \pm 2^{\circ}\text{C}$.

9.2 Drying Time:

Surface dry : 1 hour, max.

Hard dry : 12 hours, max.

9.3 Fineness of grind:

6, minimum on Hegman's gauge.

9.4 Gloss at 60° :

61, minimum.

9.5 Scratch Hardness:

After the film is cured for 7 days at room temperature or 2 hours drying at 70 to 80°C and after 24 hours air drying and tested under a load of 2000g, no such scratch as to show the bare metal shall be produced.



CORPORATE PURCHASING SPECIFICATION

AA 561 31

Rev. No. 07

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9.6 Flexibility And Adhesion:

The film shall show no sign of damage, detachment or cracking when tested after 7 days curing at room temperature or 2 hours drying at 70 - 80°C after 24 hours air drying by Erichen tester 5-8, mm.

9.7 Weight:

Between 11 and 12 kg per 10 litres of mixed paint.

9.8 Non-volatile Matter Content:

50%, minimum by weight of the base paint.

9.9 Pigment (Type Test):

20% minimum by weight of the base paint.

9.10 Epoxy Resin Content (Type Test):

30% minimum by weight of the base paint after finding the pigment and non-volatile matter content.

9.11 Resistance to Salt Spray:

The panels prepared from the material shall show no sign of corrosion after continuous exposure for a period of 7 days in the salt spray cabinet.

9.12 Impact Test (DEF-1053):

The film shall not show any sign of damage with a minimum impact of 250 kg-cm.

9.13 Chemical Resistance Test (Appendix-1):

Panels prepared and tested in accordance with Appendix-1 of this specification, when immersed in the liquids at the time, temperature and concentration specified below shall not show any sign of deterioration. Minor changes in colour is acceptable. The film shall not soften, get detached or become brittle.

10% Nitric acid by volume at 60±2°C for 12 hours.

20% Sulphuric acid by volume at 60±2°C for 8 hours.

10% Hydrochloric acid by volume at 60±2°C for 24 hours.

25% Sodium hydroxide by volume at 60±2°C for 12 hours.

Petrol at room temperature for 24 hours.

Methyl ethyl ketone at room temperature for 24 hours.

9.14 Pot Life (Appendix-2):

6 hours, minimum.

**10.0 TYPE APPROVAL:**

Samples for type approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

11.0 TEST CERTIFICATE:

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignments, giving the following information.

In addition, the supplier shall ensure to send one copy of the test certificates along with the despatch documents to facilitate quick clearance of the material.

- | | |
|--|----------------------------------|
| 1. AA 561 31, Rev 07: Chemical resistant epoxide finishing paint | |
| 2. Colour | 3. Finish |
| 4. Freedom from defects | 5. Chemical composition |
| 6. Consistency | 7. Spreading capacity |
| 8. Mass per 10 liters | 9. Drying/Curing Time |
| 10. Heat resistance test | 11. Fineness of grind |
| 12. Gloss | 13. Non-volatile matter content |
| 14. Scratch Hardness | 15. Flexibility and adhesion |
| 16. Resistance to salt spray | 17. Chemical Resistance test |
| 18. Compatibility | 19. Impact test |
| 20. Pot life | 21. Date of manufacture & Expiry |

12.0 KEEPING PROPERTY:

When stored in covered dry place in the original sealed containers under normal temperature conditions, the base and accelerator shall retain the properties individually for a period of 12 months after the date of manufacture which shall not be earlier than one month from the scheduled delivery date mentioned in BHEL order, such that the mixed paint shall conform to the properties specified in this specification.

13.0 PACKING AND MARKING:

Unless otherwise stated, base and accelerator shall be packed separately in steel containers of appropriate capacities. Each container shall bear the following information:

AA 561 31: Chemical resistant epoxide finishing paint
 BHEL Order No.
 Manufacturers/ Supplier's name
 Type No./Brand name / Shade
 Date of manufacture / Batch/Lot No.
 Expiry date
 Mixing ratio (if any)
 Quantity supplied:
 Special instructions (if any)

14.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

14.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- | | | | |
|--------------|-------------|--------------|-------------|
| 1. IS: 101 | 2. IS: 2932 | 3. IS: 14209 | 4. AA 56105 |
| 5. DEF: 1053 | | | |

**APPENDIX 1 - CHEMICAL RESISTANCE TEST (CI: 9.13)**

150±2 X 100±2 mm mild steel panels shall be first cleaned from just by rubbing with abrasive paper and suitable solvent.

One coat of the Chromate primer is applied over the cleaned panel on both the sides. After 24 hours of air drying one coat of the finish paint is applied. After 24 hours another coat of the finish paint is applied and dried at 60° to 65° C for 2 hours or alternatively cured for 7 days at room temperature. The sides of the panel shall be protected with wax coating.

The dried painted panel shall be tested by immersing in respective reagent solution in a closed desecrator and any damaging effect to the film is observed. The film shall not become brittle. Softening and detachment of the film is not acceptable. Slight change in colour is permissible.

APPENDIX 2 - DETERMINATION OF POT LIFE (CI: 9.14)

About 100ml of the mixed paint prepared by mixing the base and accelerator in the recommended proportions is taken in a beaker. The paint shall be such that it should be usable by brush under a specified pot life of 6-16 hours at room temperature.

In order to check whether the paint has gelled or not, a small quantity of the mixed paint is dissolved in the recommended thinner. It should not dissolve if the paint has gelled and vice-versa.



CORPORATE PURCHASING SPECIFICATIONS

AA56132

Rev. No.05

PREFACE SHEET

OIL RESISTANT, AIR DRYING, SYNTHETIC ENAMEL

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE SHEET BEFORE ISSUE TO SUPPLIERS

Equivalent / Comparable Standards:

1. INDIAN

IS:14947 – 2001

Suggested/ Probable Suppliers and Grades:

User plants & Replaced Plant Specifications / References:

1. Hyderabad : 0504.402
2. HEEP, Haridwar : HE 5004
3. Bhopal : HY0211190

Revisions:
Clause 4 modified

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INTER PLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(CPO+NM)

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Prepared HEEP, Haridwar	Issued Corp. R&D	Dt. of 1 st Issue Jan 1980
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CORPORATE PURCHASING SPECIFICATIONS

AA56132

Rev. No.05

PAGE 1 of 4

OIL RESISTANT, AIR DRYING, SYNTHETIC ENAMEL

1.0 SCOPE:

This specification governs the quality requirements of Oil Resistant, Air Drying, Synthetic Enamel.

2.0 APPLICATION:

The material is intended for use on internal metallic surfaces of tanks/vessels, which comes in contact with transformer /mineral oil and meets oil resistant property. The material shall be suitable for use of any (compatible) primer.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall conform to the following national standards, in general, and also meet therequirements of this specification:

IS 14947-2001: Enamel Synthetic, Oil Resistant, Air drying-Specification.

4.0 COLOUR:

As specified in BHEL order.

5.0 FINISH:

Smooth and semi-glossy to glossy

6.0 FREEDOM FROM DEFECTS:

The material supplied shall be free from defects like, hard settling of pigments excessive skinning & viscosity build-up on storage during its rated shelf life.

The dried coating of the paint shall be free from visible defects like, wrinkles, orange peel, colour fading, floating of pigments pin holes, surfaces haze, hard particles etc.

7.0 CHEMICAL COMPOSITION:

The binder of synthetic enamel shall essentially consist of oil-modified alkyd phenolic, free from natural resins or its derivatives or other suitable synthetic resin in the mixture of organic solvents. The type and content of the binder as determined by infrared spectroscopy or thin layer chromatography shall be strictly adhered to the type-approved sample in bulk supply. Supplier shall furnish a copy of spectrograph of each lot along with test certificate.

The enamel shall be suitably pigmented to meet the requirement of this specification and good quality extenders may be used, if necessary. The material shall be free fromhazardous constituents so as to meet the legislative requirements of ISO 14001.

The enamel shall be capable to produce a coating thickness of 30 microns per coat when applied by brush or air spray. The material shall be supplied in brushing consistency but shall also be suitable for application by air spray after thinning with suitable thinner.

Revisions: Clause 4 modified			APPROVED: INTER PLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO+NM)		
Rev. No.05	Amd. No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
Dt:12-03-2018	Dt:	Year:	HEEP, Haridwar	Corp. R&D	Jan 1980

CORPORATE PURCHASING SPECIFICATIONS



8.0 TEST SAMPLES:

The material in the container shall be thoroughly mixed to homogenize the contents and 500ml of representative sample shall be drawn in clean and dried container and shall be kept in closed condition for testing purposes.

Unless specified otherwise, tests shall be conducted as prescribed in relevant part and section of IS: 101.

9.0 TECHNICAL REQUIREMENTS:

9.1. Drying Time (at ambient temperature)

- a) Surface dry : 3 hours, maximum
- b) Hard dry : 12 hours, maximum

9.2. Consistency

- a) Smooth and uniform and suitable for brushing and spraying as required
- b) Efflux time 80-120 sec.

9.3. MASS IN KGS PER TEN LITRES: 11 min.

9.4. Gloss at 60°: 60, minimum.

9.5. Impact Resistance (DEF 1053) : Shall pass the test.

9.6. BEND TEST: Shall pass the test with 6.25 mm, dia. round mandrel.

9.7. SCRATCH HARDNESS: Shall pass the test when panel is air dried for 7 days and tested at a load of 1500gms.

9.8. RESISTANCE TO TRANSFORMER OIL (90°C, 48 hrs):

When tested in transformer oil conforming to AA27101/IS: 335 at 90°C for 48 hrs, the film shall not soften nor there shall be major change in the colour. The increase in acidity and sludge content shall not be more than 0.1mg KOH/gm and 0.05 gm respectively. The electrical properties of the oil should not adversely be affected.

9.9. RESISTANCE TO HUMIDITY (7 DAYS CONTINUOUS EXPOSURE):

The panel shall not show any sign of deterioration and the metal surface show no sign of corrosion.

9.10. RESISTANCE TO WATER:

The coating shall not show any sign of deterioration when panel is tested as per procedure given in Appendix.

9.11. WATER CONTENT (For information only): 0.5% by mass, max.

9.12. Volume Solids: 35%, min.

10.0 TEST CERTIFICATES

Unless stated, three copies of test certificates shall be supplied furnishing following information:



CORPORATE PURCHASING SPECIFICATIONS

AA56132

Rev. No. 05

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In addition, the supplier shall ensure to send one copy of test certificate along with the dispatch documents to facilitate quick clearance of the materials.

AA56132, Rev 04 : OIL RESISTANT, AIR DRYING, SYNTHETIC ENAMEL

BHEL order No. & Date:

Supplier's Name & address:

Identification/Trade mark, if any:

Batch/Lot No.:

Date of manufacture & expiry:

Quantity:

Test results of clause 7& 9:

Special Instructions, if any:

11.0 KEEPING PROPERTY

When the material is stored in a covered dry place in original sealed container under normal temperature conditions, the same shall retain the properties prescribed in this specification for a period of at least 12 months after the date of manufacture which shall be subsequent to the date of placing the order.

12.0 PACKING AND MARKING:

Unless otherwise stated, the material shall be supplied packed in air tight leak-proof metal containers conforming to IS: 1407 and IS: 2552. Each container shall bear the following information neatly written or pasted at suitable location.

13.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable

14.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- 1) IS: 5
- 2) IS:101
- 3) IS: 335
- 4) IS:1407
- 5) IS:2552
- 6) IS:14947
- 7) DEF 1053
- 8) AA27101

CORPORATE PURCHASING SPECIFICATIONS



APPENDIX

TEST METHOD FOR RESISTANCE TO WATER

The enamel is coated on steel bars 12 mm diameters and length 90 mm with round ends. The surface of the bars should be cleaned from rust and the traces of previous coating if any, with the help of emery and trichloroethylene solvent. One coat of enamel is done on the bars and each layer is dried at ambient conditions for 8 hours so as to achieve a coating thickness of 30 microns, min.

The coated bars shall be dried at 110°C for 3 hours followed by cooling to room temperature before subjecting to test. At least two samples are kept in distilled water in a 250 ml. beaker kept at 60-70°C for 4 hours. This shall be followed by drying in air at room temperature for one hour. The tested bars are then examined for any deterioration or loss of adhesion of the coating. There shall not be any appreciable change in the colour of coating.



CORPORATE PURCHASING SPECIFICATION

AA56134

Rev No.04

PREFACE SHEET

HEAT RESISTANT ALUMINIUM PAINT - Gr.2 (TEMPERATURE UPTO 400°C)

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Equivalent/Comparable Standards:

INDIAN : IS 13183-1991, Gr: 2

User Plants and Replaced Plant Specifications/References:

1) HARDWAR : --

Revisions:

As per clause 44.4.a) of MOM of MRC-CPO+NM

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Dt:01-02-2005

Dt:

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CORPORATE PURCHASING SPECIFICATION

AA56134

Rev No. 04

PAGE 1 of 4

HEAT RESISTANT ALUMINIUM PAINT - Gr.2 (TEMPERATURE UPTO 400°C)

1 GENERAL

This specification governs the quality requirements of Heat Resistant Aluminium Paint which shall be capable to withstand temperature upto 400°C and possible to paint by brush or air spray methods without reduction in viscosity.

2 APPLICATION

The paint shall be suitable for heat resistant application on the surfaces of steam/gas turbine components and other machine parts which are exposed to an operating temperature of 400°C as well as to protect against moderate corrosion.

3 COMPLIANCE WITH NATIONAL STANDARDS

The material shall conform to the requirements of following national standard and also shall meet other requirements of this specification.

IS 13183-1991, Gr. 2: Aluminium Paint, Heat Resistant-Specification.

4 COLOR

That of metallic Aluminium

5 FINISH

Bright, smooth & lustrous

6 FREEDOM FROM DEFECTS

The paint shall remain free from defects like hard settling of pigments, skinning when kept in a closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried coating of paint shall be free from defects like bittyness, floating of pigments, leafing/flaking of film from substrate etc.

7 CHEMICAL COMPOSITION

The paint shall be based on special heat resistant silicone binder pigmented with fine grade of aluminium paste and extender pigments in suitable proportion so as to meet the requirements of this specification.

The supplier of the material has to certify that the paint supplied is free from natural resins and free from lead or its compound to meet requirements of ISO 14001. The supplier should provided IR-Spectrograph in support of above composition.

Revisions:

As per clause 44.4.a) of MOM of MRC-CPO+NM

APPROVED:

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Dt:01-02-2005

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Year:2015



8 TEST SAMPLES

Tender samples will not be required when once the type approval is given and the supplier/manufacturer declares that the materials for which tender is given is of the same quality and composition as that of type approved sample. Representative sample of the homogenised paint shall be drawn in accordance with IS 101.

9 TEST METHODS

When tested in accordance with IS 101 and Appendix of this specification, the test samples shall show the following properties:

10 PROPERTIES

10.1 Drying Time

- a) Surface dry: 1hr, max.
- b) Hard dry: 18hrs, max.

10.2 Consistency: 20 sec. min.

10.3 Non-volatile matter content: 30% by mass, min.

10.4 Volume solids: 20%, min.

10.5 Scratch hardness: To pass the test 6H pencil hardness.

10.6 *Flexibility & adhesion:

To pass the test when tested after 48 hrs of air drying.

10.7 *Water resistance (IS 13183): To pass the test.

10.8 *Salt spray resistance (IS 13183): To pass the test.

10.9 Mass in kg/10 litres: 10.3 ± 0.5

10.10 Resistance to heat:

Film of paint when tested as per Appendix, shall show no cracking, blistering, flaking or peeling.

NOTE: * These tests shall be conducted after full cure.

11 KEEPING PROPERTY

When stored in a covered dry place in the original sealed container under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture which shall be subsequent to the date of placing the order.



CORPORATE PURCHASING SPECIFICATION

AA56134

Rev No. 04

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12 TEST CERTIFICATES

Unless otherwise specified, three copies of test certificates shall be supplied along with each consignment.

In addition, the supplier shall ensure to send one copy of test certificates along with the despatch documents to facilitate quick clearance of the material.

The test certificates shall bear the following information:

AA56134 (Rev.No.04): HEAT RESISTANT ALUMINIUM PAINT - Gr.2(TEMPERATURE UPTO 400°C)

BHEL Order No. & Date

Manufacturer's/Supplier's Name.

Trade Mark, if any.

Batch/Lot No.

Date of Manufacture & Expiry.

Quantity supplied

Test results of 7 and 10

13 PACKING AND MARKING

The paint shall be supplied in sealed and leak proof metal containers in size as per BHEL order. Each container shall bear the following information neatly written or pasted at suitable location on it.

AA56134: HEAT RESISTANT ALUMINIUM PAINT - Gr.2(TEMPERATURE UPTO 400°C)

BHEL Order No.

Manufacturer's/Supplier's Name.

Trade Mark, if any.

Batch/Lot No.

Date of Manufacture & Expiry.

Quantity supplied.

14 REFERRED STANDARDS (Latest Publications Including Amendments)

- 1) IS 101

Appendix (10.10)**TESTING OF HEAT RESISTANCE**

Prepare and clean the test panels made from hot rolled steel. Apply the paint uniformly on the test panels. Air dry the panels for 30 minutes and bake subsequently at $250 \pm 10^{\circ}\text{C}$ for 1 hour. Cool the test panels for room temperature. Place the panels in the oven / furnace maintained at following schedule:

4 hours at 300°C

1 hour at 400°C

Remove the panels from oven/furnace, cool and examine the coating for any cracking, blistering, flaking, peeling or leafing of paint film.

In absence of above surface defects, the material is deemed to have passed the heat resistance test.



CORPORATE PURCHASING SPECIFICATION

AA 561 35

Rev. No. 05

PAGE 1 OF 3

HIGH BUILD BLACK COAL TAR EPOXIDE PAINT

1.0 GENERAL:

This specification governs the quality requirements of two pack anticorrosive High Build Black Coal Tar Epoxide Paint which shall be capable of being brushed or sprayed by suitable thinning with the recommended thinner, if any, so as to obtain a dry film thickness of 4 to 5 mils (100-125µm) per coat.

2.0 APPLICATION:

Suitable for application where high humidity, total immersion in water, severe saline atmospheric condition and chemically corrosive environments prevail.

3.0 COLOUR: Black.

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

Assistance has been derived from IS: 14948 in preparation of this specification.

5.0 FINISH: Smooth and uniform (See note at clause 9.0).

6.0 FREEDOM FROM DEFECTS:

The paint shall remain free from defects like hard setting of pigments, skinning when kept in closed container and livering (excess viscosity build up) during its rated shelf life.

The dried paint film shall be free from defects like bittyness, floating of pigments, surface haze, orange peeling, colour fading, wrinkles, etc.

7.0 CHEMICAL COMPOSITION:

The paint shall be composed of suitable grade of coal tar pitch, epoxy resins and accelerator in appropriate proportions to comply with the requirements of this specification. The infra-red spectrograph of epoxy resin used in binder shall be strictly adhered to that of type approved sample. Pigments and extenders used in the composition shall be resistant to chemicals and water.

8.0 TEST SAMPLES:

Tender samples will not be required when once the type approval (Clause 10.0) is given and the Supplier concerned declares that the material for which the tender is given is of the same quality as the type approved sample.

Representative samples of the material shall be drawn and treated as prescribed in IS: 101.

Revisions:

As per 40th MOM of MRC -CPO

APPROVED:

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Dt:26.05.2012

Dt:

Year:

BHOPAL

Corp. R&D

January, 1980

**9.0 PROPERTIES:**

The paint shall be so thinned as to obtain a dry film thickness of 4 to 5 mils per coat. When tested in accordance with relevant parts and clauses of IS: 101 and Appendix-1 to this specification, the test samples shall show the following properties.

9.1 Drying Time at room temperature:

Surface dry : 4 hours maximum.
Hard dry : 16 hours maximum.

9.2 Scratch Hardness (type Test)*:

After the film is cured for 7 days under ambient conditions and tested under a load of 1200 g, no such scratch as to show the base metal shall be produced.

9.3 Flexibility And Adhesion (Type Test)*:

The film shall not show sign of damage, detachment or cracking when tested after 7 days curing under ambient conditions.

9.4 Flash Point : Not below 25°C.

9.5 Pot Life (Appendix-1): 4 to 8 hours, min.

9.6 Epoxy Resin Content: 25% minimum by mass.

9.7 Volume solid: 64%, minimum

9.8 Recoating Property:

The painted film shall be capable of receiving one more coat of the same paint between 24 and 96 hours of applying the first coat.

9.9 Effect of Boiling Water for 48 Hours On Cured Film (Type Test):

No softening or peeling off, of the film shall take place.

9.10 Effect of Heating at 150°C + 2°C in Air For 48 Hours:

No softening or peeling off, of the film shall take place.

***Note:** Scratch hardness, flexibility and adhesion and finish tests shall be conducted on painted grit blast steel panel while the other conditions of IS: 101 remaining unchanged.

10.0 TYPE APPROVAL:**Samples:**

Samples for type approval testing shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

11.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied along with each consignment.

In addition, the supplier shall ensure to send one copy of the test certificates along with the dispatch documents to facilitate quick clearance of the material.



**CORPORATE PURCHASING
SPECIFICATION**

AA 561 35

Rev. No. 05

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The test certificates shall bear the following information:

AA 561 35 (Rev. 05): High Build Black Coal Tar Epoxide Paint.

Supplier's Name and Trade Mark, if any.

Batch No.

Date of Manufacture and Expiry.

Test results of clauses 7.0 and 9.0.

12.0 KEEPING PROPERTY:

When stored in a covered dry place in the original sealed container under normal temperature conditions, the base and accelerator when mixed in appropriate proportions shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture, which shall not be earlier than one month from the scheduled delivery date mentioned in BHEL order.

13.0 PACKING & MARKING:

Unless otherwise stated, base and accelerator shall be packed separately in steel containers of appropriate capacities.

If stated in BHEL order, the recommended thinner shall also be supplied in sufficient quantity.

Each container shall bear the following information:

AA 56135: High Build Black Coal Tar Epoxide Paint. (Base / Accelerator)

BHEL Order No.

Manufacturer's/Supplier's Name.

Trade Mark, if any.

Batch No.

Date of Manufacture & Expiry.

Quantity.

14.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

15.0 REFERRED STANDARDS (Latest Publications Including Amendments)

1. IS: 101

2. IS: 14948

APPENDIX - 1

DETERMINATION OF POT LIFE (CLAUSE 9.6)

About 100 ml of the mixed paint prepared by mixing the base and accelerator in the recommend proportions is taken in a beaker. The paint shall be such that it should be usable by brush under a specified pot life of 6 - 12 hours at room temperature.

In order to see if the paint has jelled or not, a small quantity of the mixed paint is dissolved in the recommended thinner. It should not dissolve if the paint has jelled and vice-versa.



CORPORATE PURCHASING SPECIFICATIONS

AA56142

Rev. No.06

PREFACE SHEET

FULL GLOSS POLYURETHANE FINISHING PAINT

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE SHEET BEFORE ISSUE TO SUPPLIERS

Equivalent / Comparable Standards:

- INDIAN . IS:13213 – 1991 (RA-2007)

Suggested/ Probable Suppliers and Grades:

- Berger paints : Bergerthane Enamel
- Asian paints : Apcothane CF 674
- J&N paints : J&N 992
- Refer plant vendor's list

User plants & Replaced Plant Specifications / References:

- TIRUCHY
- HEEP, Haridwar
- Bhopal

Revisions: As per 40 th MOM of MRC-CPO			APPROVED: INTER PLANT MATERIAL RATIONALISATION COMMITTEE – MRC(CPO)		
Rev. No.06	Amd. No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
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CORPORATE PURCHASING SPECIFICATIONS

AA56142

Rev. No.06

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FULL GLOSS POLYURETHANE FINISHING PAINT

1.0 SCOPE:

This specification governs the quality requirements of Polyurethane Finishing Paint (Two pack system). This is recommended for exterior applications where it is desirable for gloss retention for long periods, chemical and corrosion resistance. This paint is suitable for both brush and spray application.

The paint shall be compatible on surface primed with epoxy priming as per AA56109 and intermediate paint as per AA56112.

2.0 APPLICATION:

Suitable for use in as those exterior surfaces where it is designed to retain colour and gloss for long period in addition to provide excellent chemical and corrosion resistance.

3.0 COLOUR

As specified in BHEL order.

4.0 COMPLIANCE WITH NATIONAL STANDARD:

The material shall comply with the requirements of the following national standard and also shall meet the requirements of this specification.

IS: 13213 - 1991(RA-2007): "POLYURETHANE FULL GLOSS ENAMEL (TWO PACK)"

5.0 FINISH: Smooth and full glossy

6.0 FREEDOM FROM DEFECTS:

The components of the paint shall remain free from defects like hard settling of pigments, skinning, livering (excessive viscosity build up) when kept in closed container till its shelf life.

The dried paint film shall be free from defects like bittyness, floating of pigments, surface haze, orange peeling, colour fading, wrinkles etc.

The paint shall conform to the requirements of ISO 14001 and shall be free from lead/ lead components.

7.0 CHEMICAL COMPOSITION:

The paint consists of two components enamel and a hardener solution to be mixed by volume. The mixing ratio of base and hardener shall be as per supplier's recommendation. Enamel shall consist of an appropriate polyol, pigments, solvents and additives. The hardener solution shall consist of an aliphatic polyisocyanate, solvents, and additives.

Revisions:
As per 40th MOM of MRC-CPO

APPROVED:
INTER PLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(CPO)

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HEP, Bhopal

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Dt. of 1st Issue
Jan 1991

CORPORATE PURCHASING SPECIFICATIONS



Note:

- 1) The base contains acrylic resin and acid /alkalic / light fast pigments.
- 2) The mixed paint shall be stirred well for 20 minutes to mature and must be consumed within 4.0 hours after mixing.
- 3) The content and nature of the components shall be strictly same as type approved sample. This shall be confirmed by IR spectrography / thin layer chromatography which should be provided by supplier.

8.0 TEST SAMPLES:

Tender samples will not be required when once the type approval is given and the supplier concerned declares that the material for which the tender is given of the same quality as the type approved sample.

Sampling of paint shall be done as per IS: 101.

- 8.1. To draw a representative sample, the contents of the container selected for sampling shall be mixed as thoroughly as possible by shaking or stirring or both or by rolling, so as to bring all portions into uniform distribution.
- 8.2. The samples shall be taken in a suitable, clean, dry air-tight glass bottle of one litre capacity. It should be almost but not completely filled by the sample.
- 8.3. In case of failure of first sample, two samples shall be drawn from other two drums of the same consignment at random and failure of the second sample in complying with the specification will lead to the rejection of the whole consignment.

9.0 TEST METHODS

Unless otherwise specified, the samples shall be tested in accordance with relevant part and section of IS 101

9.1. PROPERTIES:

9.1.1. Drying Time (at ambient temperature)

- a) Surface dry : 3.0 hours, maximum
- b) Hard dry : 8.0 hours, maximum
- c) Full cure : 7days, maximum
- d) Hard dry at 70°C : 30 minutes, maximum with 15 minutes flash off time.

9.1.2. Consistency

Suitable for brushing and spraying. 40 - 60 secs by F.C No.4 at 27 ± 20° C.

9.1.3. Fineness of grind

10 microns, minimum

9.1.4. Gloss at 60°

85, minimum.

9.1.5. Scratch Hardness after full cure for 7 days under load of 1000 gms, min.



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No such scratch as to show the bare metal

9.1.6. Flexibility and adhesion test

No visible damage or detachment of paint film when tested by Erichsen cupping test up to 8mm.

9.1.7. Weight

9.0 kg, minimum per 10 litres of mixed paint. However it shall be within $\pm 3.0\%$ of type approved sample.

9.1.8. Dry film thickness per coat of application

25 - 30 microns

9.1.9. Volume solids

40.0%, minimum

9.1.10. Flash Point

20°C, minimum of each component

9.1.11. Pot life at 27 \pm 2°C

4.0 hours, minimum

10.0 TYPE APPROVAL

10.1. Samples

Samples for type approval testing shall be accepted only from those manufactures whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of good product.

10.2. Type Test

10.2.1. Accelerated Tests (IS:13213):

Tests shall be conducted as per procedure given in below for chemical resistance to Sulphuric acid, Caustic potash, Oil & Solvents and the result shall not show any signs of blistering, wrinkling and lifting. Difference in gloss and colour between immersed and un-immersed area of paint film shall be minimum.

PROCEDURE:

Preparation of painted panels generally as per IS: 101.

Apply one coat of epoxy zinc phosphate primer (two pack) at minimum 35microns dry film thickness by spraying and allow to dry for at least 6 hours and not more than 24 hours. Dry rub with emery paper No.400 and wipe clean with a dry soft cloth.

Apply one coat of epoxy surfacer (two pack) at minimum 35 microns dry film thickness by spraying and allow to dry for at least 6 hours and not more than 24hours. Wet rub with water proof emery paper No.400 and allow to dry.

Apply one coat of full gloss polyurethane enamel (two pack) at minimum 35microns dry film thickness by spraying and allow to air dry for 7 days.

CORPORATE PURCHASING SPECIFICATIONS



Note: For immersion tests prepare and paint both sides of the panels and protect the edges of the panels by sealing with a chlorinated rubber paint.

Resistance to Sulphuric acid:

Immerse 3/4th of the panel in 30% sulphuric acid for 24 hours. Remove the panel, wash in running fresh water and allow it to dry for an hour.

Resistance to Caustic potash:

Immerse 3/4th of the panel in 20% solution of potassium hydroxide for 24 hours. Remove the panel, wash in running fresh water and allow it to dry for an hour.

Resistance to Oil:

Immerse 3/4th of the panel in a mineral lubricating oil for 24 hours. Remove the panel and wipe the excess oil with cotton, wash it with mineral turpentine and allow to dry for 30 minutes.

Resistance to Solvents:

Test one panel for resistance to xylene, ethanol and acetone respectively. Take a clean white sterilized cotton and soak it in the solvent and place it on the painted panel without squeezing the cotton. Immediately cover the soaked cotton with a suitable watch glass and leave it for 6 hours. Remove the watch glass and the soaked cotton, wipe the area with a clean dry cotton.

10.2.2. Durability Test (IS:8662)

10.2.2.1. Normal Outdoor Exposure Test:

Preparation of panels for the test and tests shall be as per procedure given in Annexure. Test panels shall be exposed at an angle of 45° facing south. The test shall satisfy the requirements laid down for at least 12 months after painting.

10.2.2.2. Accelerated Weathering Test (IS:8662)

The test shall satisfy the requirement laid down, after 1000 hrs. test in Xenon Arc Type Weatherometer (with rotating day / night device) with a cycle of 3 minutes rainfall and 17 minutes dry period.

PROCEDURE:

Preparation of panels for the test shall be as per the procedure given in the Annexure. Samples of panels shall be tested in duplicate in a accelerated weathering apparatus and samples drawn from the exposed films shall be evaluated for gloss and various film properties.

The requirement of the test shall be taken to have been satisfied if the performance in respect of the film characteristics is within the limits specified below:



CORPORATE PURCHASING SPECIFICATIONS

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PAGE 5 of 8

a)	Gloss	The film shall have a minimum gloss retention of 50% of the original value
b)	Colour	The film shall have a minimum rating of 8
c)	Freedom from Checking, Cracking, Flaking, Chalking, Spotting, Blistering and corrosion	-do-

NOTE:

- Test certificate of Cl.10.2.1 & 10.2.2 shall be forwarded by the supplier in line with IS: 13213 and IS: 8662 at the time of type approval. While supplying the material supplier shall furnish these test certificates after every two years.
- Supplier should submit the results of Cl.10.0 at the time of type approval and once in a year there after.

11.0 TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied giving the following information.

In addition, the supplier shall ensure to send one copy of test certificates along with the despatch documents to facilitate quick clearance of the material.

AA56142 (Rev.No.06) – FULL GLOSS POLYURETHANE FINISHING PAINT

BHEL Order No.

Supplier's Name& Trade Mark, if any.

Batch No.

Date of Manufacture

Test Results of clause 7.0:

12.0 KEEPING PROPERTIES

When stored under cover in a dry place in the original sealed container under normal temperature conditions, the base and accelerator shall retain the properties of the mixed paint prescribed in this specification for period of not less than 12 months after the date of manufacture which shall not be earlier than one month of the scheduled delivery date mentioned in BHEL order.

13.0 PACKING AND MARKING:

Unless otherwise stated, base and accelerator shall be packed separately in steel containers of appropriate capacities. Each container shall bear the following information:

AA56142: FULL GLOSS POLYURETHANE FINISHING PAINT

BHEL Order No.

Manufacturer's / supplier's name.

CORPORATE PURCHASING SPECIFICATIONS



Trade mark, if any.

Batch/lot no.

Date of manufacture and expiry.

Quantity supplied.

Mixing ratio.

14.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply. Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

15.0 REFERRED STANDARDS (Latest Publications Including Amendments):

- 1) IS:101
- 2) IS:8662
- 3) IS:335
- 4) IS:13213
- 5) AA56109
- 6) AA56112



CORPORATE PURCHASING SPECIFICATIONS

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ANNEXURE (Cl: 10.2.2.1)

PROCEDURE OF DURABILITY TEST:

PREPARATION OF TEST PANELS:

The panel shall be mild steel plate of 1.25mm thick and free from surface defects. Size of the panel for outdoor exposure test shall be 300mm x 300mm and for the Accelerated weathering test 150mm x 150mm. Panels shall be cleaned and the back and edges of the panels shall be protected with two coats of a suitable paint.

The surface of the test panels to be exposed shall be prepared as follows, taking care that total dry film thickness of the complete system shall be between 75 and 100 microns. Air drying of films shall be done at temperature $27 \pm 2^\circ \text{C}$ and at a relative humidity of 65 ± 5 percent.

- a) Apply one coat of ready mixed paint red oxide zinc chrome primer by brushing and allow to air dry for 24 hours.
- b) Rub down lightly with waterproof emery paper No.280/330, wipe off the surface with a clean and dry soft cloth and then apply by brushing one coat of the under coating enamel and allow it to dry for 24 hours.
- c) Rub down, wet, with water proof emery paper No.280/320 wipe off the surface with a clean and dry soft cloth and then apply by brushing one coat of the finishing enamel and allow it to dry for 24 hours.
- d) Rub down, wet, with water proof emery paper No.220, wash and wipe off water, and when the surface is dry, apply by brushing a second coat of the finishing enamel and allow it to dry for 7 days before subjecting to exposure test.

OUT DOOR EXPOSURE TEST:

Expose in open the test panels prepared as above in duplicate at an angle of 45° facing south. Examine the condition of the exposed films at monthly intervals for the first quarter and thereafter quarterly for the rest of the period for the properties gloss, colour, checking, cracking, flaking, chalking and spotting.

For the above examinations, wash the right hand half of the surface of the two test panels by pouring water and then wiping with a soft cloth or chamois leather. Examine the same half of the test panel at each examination. At the end of the stipulated period for durability test examine the two halves of the test panels. The sample shall be considered satisfactory if the material surface underneath as well as condition of the film in both the halves, the one washed periodically as well as the one washed only for the final examination is satisfactory by the method of evaluation given below. Stray film failure due to extraneous causes other than climatic shall be ignored.

CORPORATE PURCHASING SPECIFICATIONS



ANNEXURE - CONTINUED

Evaluation and Rating of Film Characteristics:

- a) Gloss: Specular 45° and 60° head glossometer reading.
- b) Colour: The initial rating for a good colour match shall be 10. The colour Retention on exposure shall be expressed and recorded as the abbreviation of the type of colour change followed by numerical rating as follows:

<u>RATING</u>	<u>TYPE OF COLOUR CHANGE</u>
10 - Good match	D - Darkening
9 - Satisfactory	F - Fading
8-7 - Slight colour change	B - Blueing
6-5 - Definite colour change	R - Reddening
4-3 - Bad Colour change	Y - Yellowing
2-1 - Very bad colour change	L - Loss of colour
0 - Complete colour change	

- c) Checking: Freedom for checking shall be rated as 10 for no checking and 0 for most severe and complete checking.
- d) Cracking: Freedom for cracking shall be rated as 10 for no cracking and 0 for most severe and complete cracking.
- e) Flaking: Freedom for flaking shall be rated as 10 for no flaking and 0 for most severe and complete flaking.
- f) Chalking: Freedom for chalking shall be rated as 10 for no chalking and 0 for most severe and complete chalking.
- g) Spotting: Freedom from spotting shall be rated as follows:

Numerical value	Rating
10	No spotting
9	Satisfactory
8-7	Slight spotting
6-5	Definite spotting
4-3	Bad spotting
2-1	Very bad spotting
0	Complete spotting

- h) Blistering and Corrosion: The film shall remain generally free from blisters and the metal underneath shall show no signs of corrosion on exposure for 12 months. A few isolated blisters without any signs of corrosion underneath as well as one or two localized corrosion and/or rust spots shall not constitute a cause of failure.



CORPORATE PURCHASING SPECIFICATION

AA56149

Rev No.01

PREFACE SHEET

HEAT RESISTANT ALUMINIUM PAINT-Gr. 1 (TEMPERATURE UPTO 600°C)

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Equivalent/Comparable Standards

INDIAN

: IS 13183-1991, Gr: 1

User Plants and Replaced Plant Specifications/References:

HARIDWAR

: HW56176

Revisions:

As per Clause 44.4.a) of MOM of MRC-CPO+NM

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(CPO+NM)

Rev No.01

Amd No.

Reaffirmed

Prepared
HEEP, HaridwarIssued
Corp.R&DDt. of 1st Issue
01-06-2001

Dt:01-02-2005

Dt:

Year:2015

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CORPORATE PURCHASING SPECIFICATION

AA56149

Rev No. 01

PAGE 1 of 4

HEAT RESISTANT ALUMINIUM PAINT-Gr. 1 (TEMPERATURE UPTO 600°C)

1 GENERAL

This specification governs the quality requirements of Heat Resistant Aluminium Paint which shall be capable to withstand temperature upto 600°C.

2 APPLICATION

The paint shall be used as primer and finishing paint on steam turbine components like HP casing, IP casing, ESV & CV casing etc., and on other components where temperature is likely to go upto 600°C. The paint shall be capable of being brushed or air sprayed on the components.

3 COMPLIANCE WITH NATIONAL STANDARDS

The material shall conform to the requirements of following national standard and also shall meet other requirements of this specification.

IS 13183-1991, Gr. 1: Aluminium Paint, Heat Resistant specification

4 COLOR

That of metallic Aluminium

5 FINISH

The dried coating shall be bright, smooth and lustrous.

6 FREEDOM FROM DEFECTS

The paint shall remain free from defects like hard settling of pigments, skinning when kept in a closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried paint film shall be free from defects like bittyness, floating of pigments, surface haze, orange peel, colour fading, wrinkles etc.

7 CHEMICAL COMPOSITION

The paint shall be based on special grade of silicone binder of required thermal stability of 600°C, pigmented with aluminium paste and extenders in suitable proportions so as to meet the requirements of the specification. The supplier should provide IR-Spectrograph in support of above composition.

Revisions:

As per Clause 44.4.a) of MOM of MRC-CPO+NM

APPROVED:

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HEEP, Haridwar

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Dt:

Year:2015



8 PROPERTIES

The material when tested in accordance with relevant parts and clauses of IS 101 shall show the following properties.

8.1 DRYING TIME

- | | | | |
|-------|---------------------|---|-------------------------|
| 8.1.1 | Surface Dry | : | 1 hour, max. |
| 8.1.2 | Tack free | : | 3 hours, max. |
| 8.1.3 | Hard Dry | : | 18 hours, max. |
| 8.2 | NON VOLATILE MATTER | : | 30% by mass, min. |
| 8.3 | CONSISTENCY | : | 20 secs. min. at 27±2°C |

8.4 SCRATCH HARDNESS

To pass the test at 6H pencil hardness, when tested on the paint film dried for 48 hours at room temperature.

- | | | | |
|-----|---------------------|---|----------------|
| 8.5 | VOLUME SOLIDS | : | 20%, min. |
| 8.6 | FLASH POINTS | : | Not below 27°C |
| 8.7 | MASS PER TEN LITRES | : | 10.3±0.5 kg |

8.8 *SALT SPRAY RESISTANCE

The film of the paint shall pass the salt spray test when the panel is exposed for 96 hours in salt spray cabinet. The test panel shall be of cold rolled steel and the paint film is dried in air for 30 minutes followed by heating at 250°C for one hour and cooled to room temperature before loading for the test.

8.9 *WATER RESISTANCE

The film of the paint shall show no more than slight whitening or dulling in comparison to the fresh sample, when immersed the test panel in water for 24 hours at 27±2°C.

8.10 RESISTANCE TO HEAT

To pass the test when tested as per Annexure.

8.11 *FLEXIBILITY AND ADHESION

To pass the test when the paint panel is dried for 48 hours at room temperature and then subjected to bend test.

8.12 PROTECTION AGAINST CORROSION UNDER CONDITIONS OF CONDENSATION

To pass the test when the test panel is dried for 48 hours at RT and then subjected to an exposure in temperature humidity chamber for a period of 7 days.

Note: * Test shall be conducted after the paint is fully cured.

9 TYPE APPROVAL

Samples for type approval testing shall be accepted only from reputed and those manufacturers whose manufacturing and testing facilities are considered satisfactory to ensure continuous supply of consistent and good product.



CORPORATE PURCHASING SPECIFICATION

AA56149

Rev No. 01

PAGE 3 of 4

10 TEST CERTIFICATES

Unless otherwise stated, three copies of test certificates shall be supplied giving the following information. In addition, the supplier shall ensure to send one copy of the Test certificate along with despatch documents for quick clearance of material.

AA56149, Rev 01: HEAT RESISTANT ALUMINIUM PAINT-Gr. 1(TEMPERATURE UPTO 600°C)

BHEL order & Date

Supplier's Name & Trade Mark, if any

Batch/Lot No.

Date of Manufacture & Expiry

Test Results of clauses 7 & 8

Quantity of the lot.

T.C. No & Date.

11 KEEPING PROPERTY

When stored in a covered dry place in the original sealed container under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture which shall be subsequent to the date of placing the order.

12 PACKING AND MARKING

The paint shall be supplied in sealed and leak proof metal containers preferably in 4 litres size and each container shall bear the following information:

AA56149: HEAT RESISTANT ALUMINIUM PAINT-Gr. 1(TEMPERATURE UPTO 600°C)

BHEL Order No.

Manufacturer's/Supplier's Name

Trade Mark, if any

Batch/Lot No.

Date of Manufacture & Expiry

Quantity supplied

13 ENVIRONMENTAL REQUIREMENTS

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

14 Referred Standards (Latest Publications Including Amendments)

- 1) IS 101

Annexure (CI 8.10)**TESTING OF HEAT RESISTANCE****A.1 COLD ROLLED STEEL**

Prepare and clean the test panels made from cold rolled steel. Apply the paint uniformly on the test panels. Air dry the panels for 30 minutes and bake subsequently at 250°C for 1 hour. Cool the test panels for room temperature. Place the panels in the furnace at $600 \pm 5^\circ\text{C}$ for a period of 24 hours. Remove the panels from the furnace cool and examine the surface for any cracking, blistering, flaking or peeling. In absence of above surface defects, the material is deemed to have passed the heat resistance test.

A.2 HOT ROLLED STEEL

Take test panels of low carbon steel, clean them thoroughly using hydrocarbon solvent. Coat these test panels with paint under test so as to get a coating thickness of 25-30 microns. Dry them in air for 24 hours. Keep these test panels in the furnace and are subjected to following heating schedule.

Expose the test panels for 8 hours at 400°C followed by further heating for 8 hours at 500°C and finally for 8 hours at 600°C. The panels shall be removed from the furnace for short interval for physical examination.

In absence of above surface defects, the material is deemed to have passed the heat resistance test.



CORPORATE PURCHASING SPECIFICATION

AA 567 01

Rev. No. 05

PREFACE SHEET

PETROLEUM HYDROCARBON SOLVENT (GR.: 145/205)

FOR INTERNAL USE ONLY
REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

COMPARABLE STANDARDS:

1. INDIAN : IS : 1745 – 1978(RA-2005), Gr.: Solvent 145/205,
Low aromatic

SUGGESTED / PROBABLE SUPPLIERS AND GRADES :

Refer plant vendors list

USER PLANT REFERENCES:

1. BHOPAL : PSM 3054 A
2. HYDERABAD : IS: 1745
3. TRICHY : IS:1745

Revisions :

As per 40th MOM of MRC -CPO

APPROVED :

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Dt :

Year :

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Corp. R&D

JANUARY, 1981

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RESTRICTED USE





CORPORATE PURCHASING SPECIFICATION

AA 567 01

Rev. No. 05

PAGE 1 OF 3

PETROLEUM HYDROCARBON SOLVENT (GR.: 145/205)

1.0 GENERAL:

This specification governs the quality requirements of Petroleum hydrocarbon solvent, Gr.: 145/205, low aromatic.

2.0 APPLICATION:

Suitable for use in paint industry in general. This solvent is used as a thinner for all Alkyd Based paints

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following material standard and shall also meet the requirements of this specification.

IS: 1745 – 1978(RA-2005) : Petroleum hydrocarbon solvents

Gr.: Solvent 145 / 205, low aromatic

4.0 FREEDOM FROM DEFECTS:

The material shall be clear and free from sediments suspended matters and undissolved water..

5.0 COMPOSITION:

The material shall be a petroleum distillate.

6.0 TEST SAMPLES:

Test samples shall be supplied for testing and approval as per IS: 1447.

6.1 To draw a representative sample, the contents of the container selected for sampling shall be mixed as thoroughly as possible by shaking or stirring or both or by rolling, so as to bring all portions into uniform distribution.

6.2 The samples shall be taken in a suitable, clean, dry air-tight glass bottle of one liter capacity. It should be almost but not completely filled by the sample.

6.3 In case of failure of first sample, two samples shall be drawn from other two drums of the same consignment at random and failure of the second sample in complying with the specification will lead to the rejection of the whole consignment.

7.0 PROPERTIES:

When tested in accordance with the test methods shown against each clause, the test samples shall show the following properties:

7.1* Colour (Say bolt) (IS: 1448-Part 14):

+ 20, minimum

7.2 Copper Strip Corrosion Test (IS: 1448-Part 15):

Not worse than No. 1, at 50°C for 3 hours.

7.3 Density (IS: 1448-Part 16):

g per ml, at 15°C: Not limited but to be reported.

Revisions:

As per 40th MOM of MRC -CPO

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AA 567 01	CORPORATE PURCHASING SPECIFICATION	
Rev. No. 05		
PAGE 2 OF 3		

7.4 Flash Point (Abel) (IS: 1448-Part 20):
35⁰ C, minimum.

7.5 Residue on Evaporation (IS: 1448-Part 29):
5 mg per 100 ml, maximum.

7.6 Aromatic Content (IS: 1448-Part 48):
40% by volume, maximum.

7.7 Distillation Range:

7.7.1 Initial boiling point (IS: 1448-Part 18):
145⁰ C, minimum.

7.7.2 Final boiling point:
205⁰C. maximum

7.7.3 50% by volume at, in °C:
Not limited but to be reported.

7.7.4 95% by volume at a temperature:
Not limited but to be reported.

8.0 TEST CERTIFICATES:

Unless otherwise specified, Three copies of test certificates shall be supplied along with each consignment.

In addition the supplier shall ensure to send one copy of test certificates along with the despatch documents to facilitate quick clearance of the material.

The test certificates shall bear the followings information

AA 567 01, Rev.No.05 : Petroleum Hydrocarbon Solvent, Gr.: 145/205, Low aromatic
BHEL Order No.
Manufacturer’s/Supplier’s Name.
Trade Mark, if any.
Batch No.
Date of Manufacture and expiry
Test results of clauses 7.0

9.0 Acceptance Criteria: Material shall be accepted on the basis of test results furnished by supplier and testing at BHEL in respect of Cl 7.3, 7.5, 7.7.1, 7.7.2.



CORPORATE PURCHASE SPECIFICATION

AA 567 01

Rev. No. 05

PAGE 3 OF 3

10.0 PACKING AND MARKING:

The material shall be packed in mild steel made, road tankers which shall be thoroughly cleaned before filling.

Each container shall marked with the following information:

AA 567 01 : Petroleum Hydrocarbon Solvent, Gr.: 145/205, Low aromatic

BHEL Order No.

Manufacturer's/Supplier's Name.

Trade Mark, if any.

Batch/Lot No.

Date of Manufacture

Quantity supplied.

A caution label “**FLAMMABLE**” together with the corresponding symbol for labelling dangerous goods.

11.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable

12.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1. IS : 1447 2. IS: 1448 3.IS:1745

RESTRICTED USE





CORPORATE PURCHASE SPECIFICATION

AA 567 08

Rev. No. 04

PAGE 1 OF 2

THINNER FOR EPOXY PAINTS

1.0 GENERAL:

This specification governs the quality requirements of Thinner for all types of Epoxy Paints.

2.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian standard covering the requirements of this material.

3.0 FREEDOM FROM DEFECTS:

The material shall be clear and free from sediments, suspended and undissolved matters.

4.0 TEST SAMPLE:

1/2 litre sample shall be drawn from each consignment for testing and approval.

5.0 COMPOSITION:

The material shall be a blend of either esters, ketones and/or Aromatic hydrocarbons.

6.0 PROPERTIES:

The material shall be compatible with all types of epoxy and stoving (priming & finishing) paints.

7.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied, alongwith each consignment, giving the following information:

In addition, the supplier shall ensure to send one send one copy of the test certificates along with the despatch documents to facilitate quick clearance of the material.

AA 56708 (Rev. 04) : Thinner For Epoxy Paints.

BHEL Order No.

Supplier's/Manufacturer's Name & Trade Mark, if any.

Batch No,

Date of Manufacturer & Expiry, if any,

Test results of Cl.6.0.

Revisions:

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APPROVED:

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Year:

BHOPAL

Corp. R&D

AUGUST, 1988

**8.0 PACKING AND MARKING:**

The material shall be suitably packed in 20 litre drums to avoid damage during transit.'
Each container shall be marked with the following information:

AA 56708: Thinner for Epoxy Paints.

BHEL Order No.

Manufacturer's/ Supplier's Name.

Trade Mark, if any.

Date of Manufacturer & Expiry, if any,

Batch No,

Quantity Supplied.


9.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable

10.0 REFERRED STANDARDS (Latest Publications Including Amendments):

– NIL –

TD-106-1 Rev No. 5	Form No.		<h2 style="text-align: center;">PRODUCT STANDARD</h2> <h3 style="text-align: center;">PULVERISERS HYDERABAD</h3>		Product STD NO.	BA07002																		
					Rev No 01																			
					Page 1 of 2																			
<div style="display: flex;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding: 10px; font-size: 0.8em;"> COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. </div> <div style="flex-grow: 1; padding: 10px;"> <p>Description :</p> <p>Two-component polyamide adducts cured, high build epoxy paint which combines a relatively high volume solids content with a short drying time.</p> <p>Application:</p> <p>Finishing coat on bowl mill components. It shall be compatible to intermediate coat of Polyamide cured High build epoxy base paint.</p> <p>Service Temperature : Maximum, dry exposure only: 140°C</p> <p>PHYSICAL CONSTANTS:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Shade</td> <td>: RAL 9002</td> </tr> <tr> <td>Finish:</td> <td>Semi-gloss</td> </tr> <tr> <td>Volume solids, %:</td> <td>60 ± 1</td> </tr> <tr> <td colspan="2">Theoretical spreading rate: 5.6 m²/l - 125 micron/5 mils</td> </tr> <tr> <td>Flash point:</td> <td>23 °C [73.4 °F]</td> </tr> <tr> <td>Specific gravity:</td> <td>1.5 kg/litre [12.9 lbs/US gallon]</td> </tr> <tr> <td>Dry to touch:</td> <td>2 approx. hour(s) 20°C/68°F</td> </tr> <tr> <td>Fully cured:</td> <td>7 day(s) 20°C/68°F</td> </tr> <tr> <td>VOC content:</td> <td>298 g/l [2.5 lbs/US gallon]</td> </tr> </table> </div> </div>							Shade	: RAL 9002	Finish:	Semi-gloss	Volume solids, %:	60 ± 1	Theoretical spreading rate: 5.6 m ² /l - 125 micron/5 mils		Flash point:	23 °C [73.4 °F]	Specific gravity:	1.5 kg/litre [12.9 lbs/US gallon]	Dry to touch:	2 approx. hour(s) 20°C/68°F	Fully cured:	7 day(s) 20°C/68°F	VOC content:	298 g/l [2.5 lbs/US gallon]
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		Revisions: Refer to record of revisions:		Prepared: Aman Surin	Approved: Satish Ghatge	Date: 27.11.13																		

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Rev.00**PLANT STANDARD
HYDERABAD****HY 90 500 01**Rev No.: **08**

Page 1 OF 12

**PAINTS REQUIRED FOR TURBINE & COMPRESSOR AND ITS AUXILIARY SYSTEM
APPLICATIONS****1. INTRODUCTION**

This specification defines the list of paints required for painting external & internal surfaces following components:

1. Steam Turbine
 - a) Outer Casing, Balance piston piping, inter connecting piping and LP Governing valve
 - b) Bearing pedestals, Governing assemblies and Rotor lifting equipment.
2. Compressor
3. Base frame of Compressor & Turbine
4. Base frame of LO reservoir internal
5. Base frame of LOP & EOP
6. Assembly of LOP & EOP
7. BHEL fabricated Dry gas seal control & filter skid etc.

2. MATERIALS

The list of rationalized varieties of Primers, Intermediate & Finish Paints, Thinners & Putties etc., required for main production purpose is given in the Variant table. Any deviation from this standard without written deviation permit from appropriate authority will result in rejection of job. The supplied paint shall be suitable for the metallic structures blasted surface finish SSPC-SP-10(Near white metal).

3. CODES & STANDARDS

IS-5	Colour coding
RAL DUTCH	International Standard for Colour Shade (Dutch Standard)
IS-101	Methods of test for ready mixed paints and enamels.
IS-2379	Indian Standard for pipe line identification –color code
ASTM Vol 6.1&6.3	American standard test methods for paints and coatings.
SSPC	Steel Structure Painting Council
ANSI A 13.1	Scheme for identification of piping systems: American National Standards Institution

The paint Supplier shall provide the instructions/ documents for the following:

- a) Instructions for storage to avoid exposure as well as extremes of temperature.
- b) Surface preparation prior to painting.
- c) Mixing and thinning preparation.
- d) Application of paints and recommended limit on time intervals between coats.
- e) Suggested Quality assurance procedures.

4. PAINT MATERIALS

Paint manufacturers shall furnish the characteristics of all paints materials on printed literature along with the test certificate for all specified characteristics given in this

Revisions:
Var no. 37 added (Refer Page 10)

Issued :
**STANDARDS ENGINEERING & IPR COORDINATION
DEPARTMENT**

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Page 2 OF 12

specification. All the paint materials shall be on first quality and confirm to the following general characteristics as per the tables 4.1, 4.2, 4.3 and 4.4.

TABLE No. 4.1 PRIMER PAINT REQUIREMENTS

Sr. No.	Description	P1	P2	P3	P4	P5
1	Technical Name	Inorganic zinc silicate coating	Epoxy zinc phosphate Primer	Epoxy Zinc Rich Primer	Zinc Dust Graphite Paint	Epoxy Phenolic
2	Material Code	HY9050001017 (VAR-01)	HY9050001025 (VAR-02)	HY9050001033 (VAR-03)	HY9050001254 (VAR-25)	HY9050001297 (Var-29)
3	Type and composition	A two pack air drying self-curing solvent based inorganic zinc Silicate coating with Minimum 80% Zinc content on dry film. The Final cure of the dry film shall pass the MEK Rub Test.	Two component polyamine cured epoxy resin medium pigmented with zinc Phosphate.	A two-pack polyamide cured high solid, high build epoxy Zinc Rich Primer	Primer containing Zinc dust (31 +/-2 % by wt.) and Graphite (24 +/-2 %)	Two pack ambient temperature curing epoxy phenolic coating system
4	Volume Solids (approx.)	60 +/-3 %	50 +/-1 %	64 +/-2 %	40 +/-2 %	67
5	DFT (Dry Film thickness) per coat in microns (approx.)	65-75μ	40-50μ	60-125μ	40-45μ	75-100
6	Theoretical covering capacity in M2/coat/litre (approx.)	8-9	8-10	8-9	10-11	4-5
7	Weight per liter in kgs/liter (approx.)	2.3+/- 0.03	1.4 +/- 0.05	2.4+/- 0.03	2.3+/- 0.03	1.65±0.03
8	Touch dry at 30 °C (approx.)	30 minutes	After 30 min	After 1 hr	After 12 hr	3
9	Over coating interval (approx.)	Min : 12 hrs at 20° C & 50% RH	Min.: 8 hrs.	Min.: 8 hrs.	Min.: 24 hrs.	Mon: 36 Hrs
10	Pot life (approx) at 30 °C for two component paints	4 to 6 hrs	6 to 8 hrs.	4 to 6 hrs	12 to 18 hrs	4-6

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HYDERABAD****HY 90 500 01**Rev No.: **08**

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	(approx.)					
11	Temperature Resistance (Minimum)	400 °C (Dry Service)	80 °C (Dry Service)	150 °C (Dry Service)	450 °C (Dry Service)	150 (Method A)

TABLE No. 4.2 INTERMEDIATE PAINT REQUIREMENTS

Sr. No.	DESCRIPTION	I1	I2	I3
1	Technical Name	Epoxy high build Coating	Epoxy high build MIO	Epoxy-High Build Aromatic
2	Material Code	HY9050001041 (VAR-04)	HY9050001220 (VAR-22)	HY9050001351 (VAR-34)
3	Type and Composition	Polyamide cured Epoxy resin medium suitably pigmented	Polyamide cured Epoxy resin medium suitably pigmented with MIO	Aromatic amine cured epoxy resin medium suitably pigmented.
4	Volume Solids (approx.)	60 +/- 3 %	57 +/- 3 %	60 +/- 3 %
5	DFT (Dry Film thickness) per coat in microns (approx.)	100-125μ	100-125μ	100-125μ
6	Theoretical covering capacity in M2/coat/litre (approx.)	5-6	5-6	5-6
7	Weight per liter in kgs/liter (approx.)	1.42+/-0.03	1.42+/-0.03	1.42+/-0.03
8	Touch dry at 30 °C (approx.)	3 hrs	3 hrs	3 hrs
9	Over coating interval at 30 °C (approx.)	Min : 12hrs	Min : 12hrs	Overnight. Max.: 5 days
10	Pot life (approx.) at 30 °C for two component paints (approx.)	4-6 hrs	4-6 hrs	4-6 hrs
11	Temperature Resistance (Minimum)	80 °C (Dry Service)	80 °C (Dry Service)	80 °C (Dry Service)

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TABLE No. 4.3 FINISH PAINT REQUIREMENTS

Sl. No.	Description	F1	F2	F3	F4
1	Technical Name	Heat resistant silicone aluminum paint suitable up to 600°C dry temperature.	Acrylic polyurethane paint	Aliphatic Acrylic polyester polyurethane paint	INERT POLYMERIC MATRIX COATING
2	Material Code	<p>HY9050001050 Aluminum (VAR-05)</p> <p>HY9050001335 Basalt Grey (RAL 7012) (VAR-32)</p>	<p>HY9050001068 Phirozi Blue (VAR-06)</p> <p>HY9050001076 Brilliant Green (VAR-07)</p> <p>HY9050001084 White Aluminum (VAR-08)</p> <p>HY9050001092 Dark admiralty grey (VAR-09)</p> <p>HY9050001190 Basalt grey (VAR-19)</p> <p>HY9050001246 Blue grey (VAR-24)</p> <p>HY9050001270 White Grey (VAR-27)</p> <p>HY905001289 Jet Black (Var-28)</p> <p>HY9050001009 Bluish Green (Var-33)</p> <p>HY9050001360 Smoke Grey Shade no.692 of IS:5 (Var-36)</p> <p>HY9050001394 SKY BLUE 101 (Var-37)</p>	<p>HY9050001106 Light Grey (VAR-10)</p> <p>HY9050001114 White Grey (VAR-11)</p>	HY9050001203 Aluminum (VAR-20)
3	Type and composition	Single pack silicone resin based medium with Aluminum flakes.	Two-pack aliphatic isocyanate cured acrylic finish paint	Two component polyester polyurethane finish paint	Suitable for high temp service & under approx.on coating for CS,AS & SS
4	Volume Solids (approx.)	20+/- 2 %	40 +/- 3 %	57 +/- 2 %	50+/- 2 %

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Sl. No.	Description	F1	F2	F3	F4
5	DFT (Dry Film thickness) per coat (approx.)	15 to 20 μ	30-40 μ	75-125 μ	100-125
6	Theoretical covering capacity in M2/coat/litre (approx.)	8-10	11-15	8-10	3 minimum
7	Weight per liter in kgs/liter (approx.)	1 +/- 0.03	1.15+/-0.03	0.383+/-0.03	>1.3
8	Touch dry at 30 °C (approx.)	30 min	30 Minutes	1 hr	1 hr
9	Over coating interval (approx.)	Min. : 24 hrs	Min : 12 hrs.	Min: 12 hrs.	Min: 6 hrs.
10	Pot life (approx.) at 30 °C for two component paints (approx.)	Not applicable	6-8 hrs.	4 hrs.	1 hrs
11	Temperature Resistance	600 °C Dry service	80 °C Minimum (Dry Service)	93 °C Minimum (Dry Service)	650 °C Minimum

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TABLE No. 4.4 THINNERS REQUIREMENT

Sl. NO.	TECHNICAL NAME	MATERIAL CODE
1	THINNER FOR INORGANIC ZINC SILICATE –(P1)	HY9050001122 (VAR-12)
2	THINNER FOR EPOXY ZINC PHOSPHATE PRIMER (P2)	HY9050001130 (VAR-13)
3	THINNER FOR EPOXY ZINC RICH PRIMER (P3)	HY9050001149 (VAR-14)
4	THINNER FOR EPOXY-HIGH BUILD COATING – (I1)	HY9050001157 (VAR-15)
5	THINNER FOR HEAT RESISTANT SILICONE ALUMINIUM PAINT - (F1)	HY9050001165 (VAR-16)
6	THINNER FOR ACRYLIC POLYURETHANE FINISH Paint – (F2)	HY9050001173 (VAR-17)
7	THINNER FOR ALIPHATIC ACRYLIC POLYESTER POLYURETHANE FINISH Paint PAINT - (F3)	HY9050001181 (VAR-18)
8	THINNER FOR INERT POLYMERIC MATRIX COATING- (F4)	HY9050001211 (VAR-21)
9	THINNER FOR EPOXY-HIGH BUILD MIO – (I2)	HY9050001238 (VAR-23)
10	THINNER FOR ZINC DUST GRAPHITE PAINT – (P4)	HY9050001262 (VAR-26)
11	THINNER FOR EPOXY PHENOLIC PAINT- (P5)	HY9050001319 (VAR-31)
12	THINNER FOR AROMATIC AMINE CURED EPOXY RESIN (I3)	HY9050001343 (VAR-35)

NOTES:

1. For all the three type of Paints (Primer, Intermediate, Finish) & Respective Thinners shall be procured from the same manufacturer
2. Paint manufacturer shall submit the Technical data sheets for all paints at the time of submission of quotations/ offers.
3. Technical data sheet shall have the Application of paint, typical equipment's details, thinner mixing ratio, application conditions, curing schedule etc. shall be as per paint manufacturer instruction.

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VARIANT TABLE

VARNO	TECHNICAL NAME	TYPE & COMPOSITE	MATERIAL CODE
1	INORGANIC ZINC SILICATE COATING (P1)	A two-pack air drying self-curing solvent based inorganic zinc silicate coating with minimum 80% zinc content on dry film. The final cure of the dry film shall pass the MEK rub test.	HY9050001017
2	EPOXY ZINC PHOSPHATE PRIMER (P2)	Two-component polyamine cured epoxy resin medium, pigmented with zinc phosphate.	HY9050001025
3	EPOXY ZINC RICH PRIMER (P3)	Two component Zinc rich Epoxy primer	HY9050001033
4	EPOXY-HIGH BUILD COATING (I1)	polyamide cured epoxy resin medium suitably pigmented	HY9050001041
5	HEAT RESISTANT SILICONE ALUMINIUM PAINT SUITABLE UPTO 600° C DRY TEMP. (F1) Color shade: Aluminium	Single pack silicone resin based medium with Aluminium flakes.	HY9050001050
6	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Phirozi Blue	Two-pack aliphatic isocyanate cured acrylic finish paint.	HY9050001068
7	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Brilliant Green	Two-pack aliphatic isocyanate cured acrylic finish paint.	HY9050001076
8	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: White Aluminium	Two-pack aliphatic isocyanate cured acrylic finish paint.	HY9050001084
9	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Dark Admiralty Grey	Two-pack aliphatic isocyanate cured acrylic finish paint.	HY9050001092
10	ALIPHATIC ACRYLIC POLYESTER POLYURETHANE FINISH PAINT (F3) Color shade: Light Grey	Two-pack aliphatic acrylic polyester polyurethane finish paint.	HY9050001106

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VARNO	TECHNICAL NAME	TYPE & COMPOSITE	MATERIAL CODE
11	ALIPHATIC ACRYLIC POLYESTER POLYURETHANE FINISH PAINT (F3) Color shade: white Grey	Two-pack aliphatic acrylic polyester polyurethane finish paint.	HY9050001114
12	THINNER FOR INORGANIC ZINC SILICATE	THINNER FOR VAR 01	HY9050001122
13	THINNER FOR EPOXY ZINC PHOSPHATE PRIMER	THINNER FOR VAR 02	HY9050001130
14	THINNER FOR EPOXY ZINC RICH PRIMER	THINNER FOR VAR 03	HY9050001149
15	THINNER FOR EPOXY- HIGH BUILD COATING	THINNER FOR VAR 04	HY9050001157
16	THINNER FOR HEAT RESISTANT SILICONE ALUMINIUM PAINT	THINNER FOR VAR 05 & 32	HY9050001165
17	THINNER FOR ACRYLIC POLYURETHANE FINISH Paint	THINNER FOR VAR 06, 07, 08, 09, 19,24, 27,28 36 &37	HY9050001173
18	THINNER FOR ALIPHATIC ACRYLIC POLYESTER POLYURETHANE FINISH Paint	THINNER FOR VAR 10 &11	HY9050001181
19	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Basalt grey	Two-pack aliphatic isocyanate cured acrylic finish paint.	HY9050001190
20	INERT POLYMERIC MATRIX COATING (F4) Color shade: Aluminium	Suitable for high temperature service and under insulation coating for CS,AS & SS	HY9050001203
21	THINNER FOR INERT POLYMERIC MATRIX COATING	THINNER FOR VAR 20	HY9050001211
22	EPOXY-HIGH BUILD MIO (I2)	polyamide cured epoxy resin medium suitably pigmented with MIO	HY9050001220

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VARNO	TECHNICAL NAME	TYPE & COMPOSITE	MATERIAL CODE
23	EPOXY-HIGH BUILD MIO	THINNER FOR VAR 22	HY9050001238
24	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Blue Grey	Two-pack aliphatic isocyanate cured acrylic finish paint	HY9050001246
25	ZINC DUST GRAPHITE PAINT (P4) Color shade: Aluminium	Primer containing Zinc dust and Graphite	HY9050001254
26	THINNER FOR ZINC DUST GRAPHITE PAINT (P4)	THINNER FOR VAR 25	HY9050001262
27	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: White Grey	Two-pack aliphatic isocyanate cured acrylic finish paint	HY9050001270
28	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Jet Black	Two-pack aliphatic isocyanate cured acrylic finish paint	HY9050001289
29	EPOXY PHENOLIC PRIMER (P5) Colour Shade: Aluminium	Two pack ambient temperature curing epoxy phenolic coating system	HY9050001297
31	THINNER FOR EPOXY PHENOLIC PAINT (P5)	THINNER FOR VAR-29	HY9050001319
32	HEAT RESISTANT SILICONE ALUMINIUM PAINT SUITABLE UPTO 600° C DRY TEMP. (F1) Color shade: BASLT GREY (RAL7012)	Single pack silicone resin based medium with Aluminium flakes.	HY9050001335
33	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Bluish Green	Two-pack aliphatic isocyanate cured acrylic finish paint	HY9050001009

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VARNO	TECHNICAL NAME	TYPE & COMPOSITE	MATERIAL CODE
34	EPOXY-HIGH BUILD-AROMATIC (I3)	AROMATIC AMINE CURED EPOXY RESIN MEDIUM SUITABLY PIGMENTED.	HY9050001351
35	THINNER FOR AROMATIC AMINE CURED EPOXY RESIN MEDIUM SUITABLY PIGMENTED.	THINNER FOR EPOXY-HIGH BUILD- AROMATIC (I3)	HY9050001343
36	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: Smoky Grey 692	Two-pack aliphatic isocynate cured acrylic finish paint	HY9050001360
37	ACRYLIC POLYURETHANE FINISH PAINT (F2) Color shade: SKY BLUE 101	Two-pack aliphatic isocynate cured acrylic finish paint	HY9050001394

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5. Referee Methods

- Drying time - ASTM D1640
- Solids Content - ASTM D2697
- VOC Content - ASTM D3960
- Flash point - ASTM D3278

6. FREE FROM DEFECTS

The paint shall remain free from defects like hard settling of pigments, skinning when kept in a closed container and levering (excessive viscosity build up) during its rated shelf life. The dried coating of paint shall be free from defects like bittiness, floating of pigments, leafing/flaking of film from substrate etc.

7. STORING PROPERTY

When stored in a covered dry place in the original sealed container under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture, which shall be subsequent to the date of placing the order.

8. TEST SAMPLES

Tender samples will not be required when once the type approval is given and the supplier /manufacturer declares that the materials for which tender is given is of the same quality and composition as that of type approved sample. Representative sample of the homogenised paint shall be drawn in accordance with applicable standard.

9. TEST CERTIFICATES

Unless otherwise specified, three copies of test certificates shall be supplied along with each consignment. In addition, the supplier shall ensure to send one copy of test certificates along with the despatch documents to facilitate quick clearance of the material.

The test certificates shall bear the following information:

- BHEL material no. with description
- BHEL Order No. & Date
- Manufacturer's / Supplier's Name
- Trade Mark, if any
- Batch / Lot No
- Date of Manufacture & Expiry
- Quantity supplied
- Applicable Test results

10. PACKING AND MARKING

The paint shall be supplied in sealed and leak proof metal containers in size as per BHEL order. Each container shall bear the following information neatly written or pasted at suitable location on it.

- BHEL material no. with description
- BHEL Order No.
- Manufacturer's/Supplier's Name
- Trade Mark, if any
- Batch/Lot No.
- Date of Manufacture & Expiry
- Quantity supplied
- Paint data sheet



(Attachment to Enquiry No. XXXXXXXXXX Due on Date XX.XX.XXXX for submission by 11.00 hrs to open from 14.00 hrs.)

INSTRUCTIONS TO BIDDER (ITB)

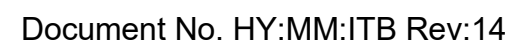
NOTE: Bidder to confirm in affirmative by typing "YES" or "Applicable Data" in the response column. Deviations, if any shall be recorded in deviations/comments column (Separate sheet can be attached if needed). Non deviatable clauses are indicated as "NON DEVIATABLE".

Sl. No.	DETAILED TERMS & CONDITIONS	BIDDER RESPONSE (YES/NO)	DEVIATIONS / COMMENT
1	SCOPE OF SUPPLY:		
	Signed & Sealed offers are invited for the Scope of Supply of goods or services or both as detailed in the enquiry. Relevant enclosures/supporting documents / catalogue, if any shall be enclosed to the technical offer.		
2	DEFINITIONS		
A	'The Buyer' means BHEL-HPEP, Ramachandrapuram, Hyderabad-502 032 of Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the companies Act having its registered office at BHEL House, Siri fort, New Delhi-110049, India and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.		
B	'The Bidder' means the persons, firm, company or organization on whom the Purchase order is placed and shall be deemed to include the bidder's successors, representatives, heirs, executors and administrator as the case may be. It may also be referred to as Contractor, supplier or bidder.		
C	'Contract' shall mean and include the Purchase order incorporating various documents viz., Notice Inviting Tender (NIT), Offer, Letter Of Intent/Acceptance (LOI/LOA), Instruction to Bidders (ITB) and Special Conditions of Contract (SCC), specifications, inspection/quality plan, schedule of prices and quantities, drawings, if any, enclosed by Bidder/ provided by the Buyer or his authorized nominee and the samples or patterns if any to be provided under the provision of the contract. In case of any inconsistency or contradiction between any of the documents, the order of precedence shall be Purchase Order, LOI/LOA followed by Minutes Of Meeting (MOM), NIT, SCC, ITB.		
D	'Parties to the contract' shall mean the bidder and the buyer as named in the main body of the Purchase Order.		
E	'Goods/Material' shall include Works and Services which are incidental or consequential to supply.		
3	GENERAL INSTRUCTIONS:		
A	Mode of submission of offer shall be as indicated in SCC		Non Deviatable
B	The quotation should be neatly typed and free from over writing/ erasures. Any correction or addition must be authenticated. The offer including annexures and brochures should be submitted in English / Hindi. All Pages of Techno Commercial Bids (Main Pages), ITB, SCC should be signed and Stamped. If there is a conflict in case of bilingual submission, the submission in English will be final. Prices shall be quoted both in figures and words. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 Status. Any discount / revised offer / bids submitted by a bidder on his own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.		Non Deviatable
C	Incomplete offers are liable for rejection.		Non Deviatable
D	Bidders to please note that the Terms & conditions contained in this document and SCC are to be read fully before submission of quotations.		Non Deviatable
E	Bidders are advised to comply with ITB and SCC, should there be any deviations (where deviations are permitted), it shall be entered in the deviation column. BHEL reserves the right to reject such offers or load the bid suitably for evaluation.		Non Deviatable
F	Offers shall be submitted directly, only by the bidder or by their authorized representative / agent and the offer should be in line with the regulatory guidelines (i.e. A valid Agency agreement between principal bidder and agent / representative shall be attached and the agreement shall cover the scope of services rendered by Agent, Agency Commission and any other information called for as per the regulatory guidelines). OEM / Mill details shall be provided if bidder is not a manufacturer. Bid envelops shall bear the name of Bidder. In case of submission through authorized representative/agent, the name of representative/agent should also be mentioned apart from bidder name.		Non Deviatable
G	Offer received after the specified time and date of submission will be rejected. No further correspondence shall be entertained.		Non Deviatable
H	Unsolicited offers will not be considered.		Non Deviatable
4	OTHER PARTICULARS (Please indicate applicable data)		
A	Name of the Bid currency (freely tradable foreign currency for imports and Indian Rupees for indigenous purchase).		
B	Name of the Port of loading and Port of Discharge (applicable to imports).		



5	BID SUBMISSION PROCEDURE FOR CONVENTIONAL TENDER:		
A	For Single Part Bids:		
	The complete bid shall be submitted in a single sealed cover superscribing the Tender number and due date, addressed to Sr DGM/CMM, Vendor Complex, BHEL, Hyderabad and sent by appropriate mode to above address or dropped in tender box located at vendor complex on or before the specified time and date of submission of offers, preferably in the bidder's envelope. E- mail bids shall be sent to mail ID pricebid_hyd@bhel.in only as an attachment.		Non Deviatable
B.	For two-Part Bids:		
i	<p>The offer is to be submitted in two parts viz., Techno-commercial Bid - (Part-I), with all technical specification & scope including bill of material etc., Earnest Money Deposit (EMD)(wherever applicable) and unpriced bid with all applicable Commercial Terms and Conditions, rates of agency commission, duties, taxes and other charges, Signed and Stamped ITB and SCC, <u>except the price</u>, shall be kept in a separate sealed cover, superscribing enquiry No. (Techno-Commercial Bid) and due date AND Price Bid (Part-II), containing ONLY the price (including agency commission, if any) and the applicable duties/taxes/other charges shall be kept in a separate sealed cover superscribing Enquiry no. (Price bid) & due date.</p> <p>Both the above covers (Part –I & II) shall be kept in a Third cover superscribing Enquiry no. & due date.</p> <p>Bidder can also submit offer through email. Technical offer to be submitted to mail ID technicalbid_hyd@bhel.in, and price bid to be submitted to mail ID pricebid_hyd@bhel.in only as an attachment. Interchanging the information in the mails may lead to rejection of the offer. Bidder shall have no claim on e-mail offers sent to any other e-mail ID.</p> <p>In case of e-mail offers, the mail subject should contain Enquiry Number, Due date and Bidder name. Bidder address including contact details shall be mentioned in the content of the mail. Without these details, the offer is liable for rejection.</p> <p>All techno commercial terms & conditions mutually agreed prior to price bid opening shall prevail and supersede any terms and conditions specified otherwise in price bid.</p>		Non Deviatable
ii	The bidders whose bids are techno commercially not accepted will be informed and EMD shall be returned wherever submitted.		
iii	Bidders will be allowed to submit the impact on their quoted prices due to changes in technical scope, specifications, and commercial terms/conditions as specified in NIT which in the opinion of BHEL , warrant changes in prices.		Non Deviatable
C	Bids shall be opened on due time and date in the presence of bidders who may like to be present. Only one representative of each bidder shall be permitted to attend the bid opening. Only the price bids of bidder (in case of two part bid) whose techno commercial bids are accepted will be opened later on a specified date.		Non Deviatable
6	DELIVERY TERMS		
A	Indigenous Purchase		
	<p>a. Terms of Delivery for dispatches to BHEL Hyderabad (HPEP) shall be FOR Destination.</p> <p>b. Terms of Delivery for Direct Dispatch (DD) items shall be Ex Works.</p> <p>i. Incase specified in SCC that insurance is in customer/BHEL scope, price quoted shall include Freight charges up to Destination.</p> <p>ii. Otherwise, price quoted shall include Freight and Insurance upto Destination. However, beneficiary for insurance shall be BHEL.</p>		
B.	Imports		
	The goods shall be delivered on FCA capital airport basis in case of freight by Air and CIP basis in case of freight by Sea.		
7	Documentation for Payment		
A	Indigenous Purchase		
	<p>Following documents shall be submitted immediately on dispatch of material to BHEL HPEP / Site</p> <p>a. Two numbers of Original Tax Invoice (Refer ITB clause no 11 for Tax Compliance)/ e-invoice of GST Portal if applicable)</p> <p>b. Packing List - clearly showing number of packages, gross weight and net weight.</p> <p>c. Test/Warranty/Guarantee certificates, O&M Manual (If specified in SCC)</p> <p>d. Insurance intimation/declaration certificate</p> <p>e. Pre-dispatch Inspection report /Third Party Inspection Certificates.</p> <p>f. Consignee copy of LR signed & stamped by Customer/Site representative for DD Items</p> <p>g. e-waybill</p> <p>h. Any other documents as specified in SCC.</p> <p>Softcopies of the above documents shall be uploaded in Pradan portal https://hpep.bhel.com/mm/ immediately after dispatch of the material.</p>		Non Deviatable

B	<p>Imports</p> <p>i) Bidder shall inform BHEL the readiness of material along with packing details 30 days in advance from the date of delivery. For Hazardous cargo/DG cargo, supplier must provide the following documents prior to handing over shipment to freight forwarder, wherever freight is in BHEL scope:</p> <ol style="list-style-type: none"> Valid MSDS DGD certificate with appropriate UN numbers. Labelling and marking on DG cargo along with photo of packaging. Self-declaration for consignment Packaging Certificate as per DG Standards TSA Approved Truckers details to be provided to forwarder at the time of shipment <p>In addition to the above, supplier should ensure to comply all IATA DG regulations, if any new requirement is added in future.</p> <p>ii). Bidder shall also upload the soft copy of the dispatch documents consisting of BL / AWB, Invoice, delivery note, packing list, country of origin & Test certificates and other documents as specifically indicated in the SCC in PRADAN Portal (https://hpep.bhel.com/mm) within Five days from the B/L date for sea shipment and One day from AWB date for Air shipment and sent to email ids: mssea@bhel.in, msair@bhel.in, cmmfe@bhel.in.</p> <p>iii) AWB/BL must contain the information of BHEL GST no., and PAN no.</p> <p>iv) Air Shipments: Bidder shall ensure the following</p> <ol style="list-style-type: none"> Port of discharge -- Mumbai/Chennai/Hyderabad (as indicated in SCC). Consignee shall be BHEL, Hyderabad. Material shall be air freighted through cargo mode only and not through Courier. Upon handing over the cargo to the forwarder, bidder shall ensure the acknowledgement receipt with wordings "Cargo handed over in sound condition for Air freighting". Note: Warehouse receipt will not be considered for penalty calculations. In case of CIF/ shipments, bidder shall also inform BHEL the information about discharge port agent details and cargo arrival information within one day from the date of Shipment. Following dimensions of single package may be noted. <ol style="list-style-type: none"> Maximum dimension of the cargo(ODC) -- 125" x 88" x 63" Maximum weight of the cargo -- 3.5 MT. <p>If any package dimension or weight exceeds the above set limits, it will be treated as Over Dimension Cargo (ODC) or Over Weight Cargo and bidder shall inform BHEL 30 days in advance to the delivery date to enable BHEL to finalize the freight forwarder.</p> If package falls under Hazardous category, bidder shall communicate BHEL 30 days in advance period with document support. <p>v) Sea Shipments:- bidder shall ensure the following</p> <ol style="list-style-type: none"> Port of discharge -- Nhavaseva/Mumbai/Chennai. Place of Delivery / Final Destination for CIP shipments - Nhavaseva CFS / Chennai CFS. In case of FOB shipments, bidder shall handover the material to BHEL nominated forwarder and obtain the cargo receipt. If the material cannot be containerized in 20 or 40 GP containers, an advance information of 30 days prior to the delivery date shall be communicated to BHEL for necessary arrangements and finalisation of freight forwarder. For CIP shipments <ol style="list-style-type: none"> In case of FCL shipments, Detention free period must be 14 days. Bidder shall also inform BHEL the information about discharge port agent details and cargo arrival information within 5 days from the date of Shipment. No charges for the services rendered till place of destination will be payable by BHEL. In case liner / forwarder insist for charges, not in the scope of BHEL, the same will be adjusted from bidder account. In case of CIF shipments -- Bidder must select a forwarder/liner whose discharge port published tariff for THC and other services is available. Any charges over and above the published tariff will not be borne by BHEL or will be adjusted from the bidder's bill. bidder must insure the cargo for 110% of material value including the freight amount. <p>(vi). Recovery charges for non-submission of documents: - Bidder shall submit all the required documents to BHEL as prescribed in the Purchase order and NIT.</p> <p>If BHEL incurs any charges such as Penalty, demurrage, container detention, wharfage, storage, Ground rent etc., due to non - compliance / non - submission of documents prescribed in Purchase Order/ NIT/Letter of credit, the same shall be recovered from the bidder as under:</p> <ol style="list-style-type: none"> EUROPE/USA/Black Sea/ Far East/Middle East/South East sector <p>A. For FOB Sea Consignments:-</p> <p>Penalty for late submission / negotiation of documents beyond 14 days shall be as under:</p>		
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c) In case the bidder has a Business Connection in India as per Section 9 of Income Tax Act or significant economic presence in India as per rule 11 UD of IT Act or Permanent Establishment in India as per Article 5 of Double Taxation Avoidance Agreement between India and the bidder's country, the bidder shall provide a withholding tax order issued by the Indian Income Tax authority for recovery of applicable tax.

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A	<p>Indigenous Purchase</p> <p>i) Only valid GST registered bidders will be considered for the tender. The GSTIN of the bidder should be clearly mentioned in the offer.</p> <p>ii) If bidder is exempted from GST registration under any provision of the GST Law, a declaration with due supporting documents should be furnished for considering the offer.</p> <p>iii) Bidder to quote the applicable taxes in the following manner:</p> <ul style="list-style-type: none"> - Harmonized System of Nomenclature (HSN) of Goods - Services Accounting Code(SAC) of Services. - IGST/CGST/SGST/UTGST: Rate of Tax to be quoted as extra in % against the space provided <p>iv) Bidders to ensure correct applicability of IGST/CGST/SGST/UTGST based on the Inter / Intra state movement of goods/services.</p> <p>v) In case Bidder has opted for GST Composition Scheme, the same may be stated explicitly both in their technical and price bids. An undertaking to the effect that any change in the status of the bidder will be intimated.</p> <p>vi) Any other taxes & duties not covered anywhere above may be indicated separately.</p> <p>Taxes deducted at source:</p> <ul style="list-style-type: none"> - TDS as per the extant statutes shall be deducted. - In case bidder does not provide PAN details, higher rate of tax shall be deducted as per the Act. - Concessional certificates, if any, should be provided well in time for lower deduction of tax. 		Non Deviatable
	<p>Terms & Conditions to be complied</p> <p>1. All invoices (incl. Credit Notes, Debit Notes) to contain BHEL HPEP GSTIN ie 36AAACB4146P1ZG. Invoices submitted should be in the format as specified under GST Law. All details as mentioned in Invoice Rules including Dealer GST registration number (GSTIN), invoice number with date of issue, quantity, rate, value, taxes with nomenclature – CGST, SGST, UGST, IGST mentioned separately, HSN Code / SAC Code etc.</p> <p>2. Reimbursement of GST amount will be made only upon completion of the following:</p> <ol style="list-style-type: none"> i. Bidder declaring such invoice in their GSTR-1 Return/ IFF ii. Receipt of Goods or Services and Submission of Tax invoice by BHEL iii. The tax invoice is reflected in the GSTR2B of BHEL, HPEP (buyer). Payment of GST will be made only if it is matching with data uploaded by the Bidder in GST portal. <p>3. In case of discrepancy in the data uploaded by the bidder in the GSTN portal vis-a-vis the tax invoice or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit. The same would be available in PRADAN Portal for the bidder's information. Bidder has to rectify the data discrepancy in the GSTN portal or issue credit note or debit note (details also to be uploaded in GSTN portal) for the shortages or rejections in the supplies or additional claims for processing of such invoices.</p> <p>4. In cases where invoice details have been uploaded by the bidder but failed to remit the GST amount to GST Department within stipulated time, then GST on the invoices in default will be recovered from the bidder along with the applicable interest.</p> <p>5. In case GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, such GST amount will be recoverable from bidder along with interest levied/ leviable on BHEL.</p> <p>6. GST TDS deducted as per GST Act, is uploaded in GSTN portal along GSTR7. Bidders can directly download the GST TDS Certificate from the GSTN Portal.</p> <p>7. Bidders to note that Rules & Regulations pertaining to E-way bill system are to be strictly adhered to, as and when notified by Govt. authorities.</p> <p>8. Vendors who fall under the E-Invoice regulations, i.e., having an annual turnover of Rs. 10 crores (Rs 5 crore w.e.f 01.08.2023) in the previous year shall issue e-invoice in line with Rule 48(4) of CGST Rules failing which GST amount will not be reimbursed to the vendor even if the other requirements are fulfilled.</p> <p>9. In case the vendor is exempted by the GST department under the Rule 48(4) of CGST Rules from issuing E-invoice, a declaration as prescribed in the Notification 17/2022 - Central Tax dated 01-08-2022 shall be provided on the invoice.</p> <p>10. Vendors who do not fall under the E-Invoice regulations, i.e., whose annual turnover is less than Rs. 10 crores (Rs 5 crore w.e.f 01.08.2023) in the previous year have to give an undertaking indemnifying BHEL that the vendor is not falling under the E-invoice requirement category and that in case of any breach of this E-invoicing requirement, the vendor indemnifies BHEL of any consequences that may arise due to such a breach.</p> <p>11. No GST shall be levied on liquidated damages / penalty.</p>		
B.	Foreign Purchase (Imports)		



	<p>The offered price shall be inclusive of all the Taxes and duties as applicable in country of export / country of dispatch for the quoted price.</p> <p>Taxes deducted at source:</p> <p>a. In case of goods or services subject to Income tax in India, such tax as per the extant statute shall be recovered.</p> <p>b. In case bidder does not provide necessary documents for beneficial taxation (Refer clause 7-B-(ix) a-c of ITB), the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act.</p>		Non Deviatable
12	Payment Terms: Unless otherwise specified in SCC, following shall be the terms of Payment.		
A	<p>Indigenous:</p> <p>a. Micro & Small Enterprises (MSEs) - 100% Direct EFT payment within 45 days</p> <p>b. Medium Enterprises - 100% Direct EFT payment within 60 days</p> <p>c. Non MSME Bidders - 100% direct EFT Payment within 90 Days</p> <p>Note</p> <p>A. Above due date is reckoned from the date of Receipt of material or 15 days from the date of submission of complete set of documents as per PO whichever is later. Payment will be made for Material accepted value .</p> <p>B. MSEs (covered under MSME Act) need to register and renew periodically and update the same with BHEL</p> <p>C. The taxes that are reimbursed are limited to applicable taxes as on the Purchase Order delivery date or the amount actually paid whichever is less.</p> <p>D. Adherence to the above time schedule of payment is contingent upon Bidder complying with GST provisions and availment of Input Tax Credit by BHEL before the date of payment.</p> <p>E. In case of packaged items, 10% of supply value will be retained till completion of total supplies.</p> <p>F. Bidders to comply with clause 11 on GST requirements</p> <p>G. MSE benefits are not applicable to Traders/Wholesalers registered as MSEs</p>		
B	<p>Imports:</p> <p>i) 100% payment (less Indian Agency Commission, if any) shall be through Wire Transfer with a credit period of 60 days - Cash Against Documents (CAD)</p> <p>ii) In case Bidder opts for Letter of Credit payment, the LC Usance period shall be 90 days with respective bank charges to respective accounts and loading of 0.50%</p> <p>iii) Indian Agency commission if payable and so specified in the Purchase order shall be paid in Indian Rupees, considering the SBI TT selling exchange rate, as on the date of payment after successful completion of the contract.</p>		
C	<p>Conditions for LC:</p> <p>a. LC validity period will be 90 days and for any extension, applicable charges will be to bidder's account.</p> <p>b. LC will be opened after successful completion of pre dispatch inspection prior to the scheduled / agreed delivery date. LC will be opened within 15 bank working days from the date of request.</p>		Non Deviatab le
D	<p>Conditions for both Indigenous & Foreign Bidders:</p> <p>a. In case Bidders insist for lesser Credit period and BHEL accepts, a loading of 0.60% for every 15 days reduction will be applicable.</p> <p>b. In case PBG as required is not furnished, Payment will be released deducting the BG amount, which will be paid after expiry of warranty period against submission of supplementary claim.</p> <p>c. Payment does not imply in any respect whatsoever a waiver of Buyer's right to performance of the Order. Buyer is entitled to set off claimable debts against claimable liabilities with the bidder by means of a setoff Note.</p>		Non Deviatab le
E	<p>Wherever EMD is applicable, the EMD will be paid back to unsuccessful bidders within fifteen days after award of the contract. Successful bidder's EMD will be retained till submission of Performance Bank Guarantee (PBG).</p> <p>Tender Fee wherever applicable is not refundable.</p> <p>No interest shall be payable by BHEL on earnest money or security deposit or any money due to the contractor by BHEL.</p>		Non Deviatab le

13	Penalty clause:		
	<p>In the event of delay in supply /part-supply of goods, Penalty as detailed below is leviable</p> <p>a. Penalty of 0.5% per week or part there of shall be levied, limited to a max of 10% (ten percent) of delayed portion value / order value (as specified in SCC).</p> <p>b. Penalty applicable for delay in documentation is as per SCC.</p> <p>c. Date Reckoned for Penalty</p> <ul style="list-style-type: none"> - Indigenous Orders with delivery terms FOR HPEP: C Note date. - Indigenous Orders (Others): Date of e-waybill. - Imports: For CIP/CIF Orders: IGM date - Imports: For FOB Orders: AWB / BL date - Imports: For FCA Orders: Date of acknowledgement from Freight Forwarder. For Ex Work Orders (both air and sea): Latest of Air Freight Request (AFR), Invoice, Packing List, Inspection date (if applicable) or any other documentary evidence confirming material readiness. <p>d. In case of Deviation to above Penalty clause, loading applicable to the extent to which not agreed by Bidder.</p> <p>e. Timelines as mentioned in the Annexure 1 will be considered for reckoning delivery.</p>		
14	Excess materials supplied beyond tolerance limit as specified in PO will not be paid and bidder may raise credit note for the excess/unaccepted material as per GST law.		Non Deviatable
15	Rejected materials , if any, shall be collected by the bidder within 90 days of such communication to the bidder. Beyond this period the bidder forfeits their right to the materials.		Non Deviatable
16	<p>Guarantee / Warranty Period:</p> <p>Wherever required, and so provided in the specifications/SCC/Purchase Order, the bidder shall guarantee that the goods supplied shall comply with the specifications laid down, for materials, workmanship and performance.</p> <p>a. Guarantee period shall be 12 months from the date of commissioning or 18 months from the date of supply whichever is earlier.</p> <p>b. In case erection & commissioning is involved, guarantee period shall be 12 months from the date of commissioning.</p> <p>c. In case of equipment bought as a package which are intended to be incorporated in installations or systems, the guarantee period shall be 12 months from the date of commissioning of such equipment.</p> <p>The guarantee period shall be extended by the period during which the goods are not in compliance. If the delivery is found to be non-complaint, bidder shall replace, repair or re-execute the as requested by BHEL. If the bidder defaults on his obligations, buyer has the right to proceed to replace, repair or re-execute at the bidder's expense.</p> <p>A guarantee period as described above shall apply afresh to replaced, repaired or re-executed parts of a delivery.</p> <p>Loading for deviation:</p> <p>In case warranty specified in SCC is over and above the period mentioned in b & c above; loading will be 1% per annum for the deviation in warranty end period, on the contract value. Expected commissioning period is as indicated in SCC.</p>		Non Deviatable
17	<p>PERFORMANCE BANK GUARANTEE (PBG) (Applicable in case mentioned in SCC)</p> <p>In case enquiry specifically spells out PBG requirement, PBG is to be submitted by Bidder in requisite format as per Annexure VII.</p> <p>Further detailing on PBG as specified in SCC.</p> <p>The PBG shall be for the performance of the goods and shall remain binding notwithstanding such variations, alterations or extensions of item as may be made, give, conceded or agreed to between the Bidder and BHEL under these Terms and conditions or otherwise.</p>		Non Deviatable
<p>NOTE: Deviations (Commercial as well as Technical) from the tender specifications and conditions are generally not acceptable. However, deviation if any, shall be brought out clearly with proper justification in the offer. The deviation, if considered by BHEL, shall be loaded for comparison, while evaluating the offer. If a bidder unconditionally withdraws any deviation before price bid opening, the same shall not be loaded. Loading criteria in respect of major commercial conditions where deviations if any are accepted shall be as per clause No.18.</p> <p>The Bidders may specifically note the following.</p>			
18	Evaluation and Loading Criteria:		

	<p>i) Evaluation Currency for this tender shall be “INR”.</p> <p>ii) Evaluation of prices shall be done item-wise unless otherwise specified in the SCC.</p> <p>iii) Evaluation shall be on the basis of delivered cost, i.e. “Total Cost to BHEL” w.r.t the finalized technical scope and commercial conditions (after considering incidence of applicable taxes and duties and loading).</p> <p>iv) In the course of evaluation, if more than one Bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts from the respective L1 Bidders. In case more than one Bidder happens to occupy the L1 status even after soliciting discounts, the L1 Bidder shall be decided by a toss/draw of lots, in the presence of the respective L1 Bidders or their representatives. Ranking will be done accordingly. BHEL decision in such situations shall be final and binding.</p> <p>INDIGENOUS</p> <p>a. Bidder shall ensure to indicate the applicable taxes against each line item, failing which the same will be considered as inclusive/NIL.</p> <p>b. Ex-works offers received (as against FOR Destination mentioned in enquiry) shall be loaded by 2% of Ex-works value.</p> <p>c. GST and any other charges quoted will be added to the base price. However, in case input credit is available for GST (SGST, CGST/IGST), the same shall be excluded for arriving at “Total Cost to BHEL”</p> <p>IMPORTS</p> <p>For evaluation of offers in foreign currency, exchange rate (TT selling rate of State Bank of India) as on the date of bid opening (Part-I, in case of two-part bids) shall be considered. If the relevant day happens to be a bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.</p> <p>In case of foreign Bidders, the quoted CIP price shall be loaded by the following factors to arrive at “Total Cost to BHEL”:</p> <p>- Import duty as applicable on the date of Part-I bid opening.</p> <p>- Loading will be as per the table below</p> <table><tr><td></td><td>Ex Works</td><td>FOB/FC A</td><td>CIF/CFR</td><td>CIP</td></tr><tr><td>Foreign Inland freight and insurance</td><td>2%</td><td></td><td></td><td></td></tr><tr><td>Marine freight and marine insurance</td><td>3%</td><td>3%</td><td></td><td></td></tr><tr><td>Destination Port handling charges</td><td>0.50%</td><td>0.50%</td><td>0.50%</td><td></td></tr><tr><td>clearing charges & inland freight and insurance</td><td>2%</td><td>2%</td><td>2%</td><td>2%</td></tr></table> <p>COMMON LOADING FOR IMPORTS & INDIGENOUS that will be added for arriving the "Total Cost to BHEL"</p> <p>A. Loading on Deviated Penalty clause shall be 10% or to the extent to which the bidder has opted for deviation.</p> <p>B. Loading for payment terms as per clause 12 of ITB</p> <p>C. Loading for deviation in Warranty & PBG as per clause 16,17.</p>		Ex Works	FOB/FC A	CIF/CFR	CIP	Foreign Inland freight and insurance	2%				Marine freight and marine insurance	3%	3%			Destination Port handling charges	0.50%	0.50%	0.50%		clearing charges & inland freight and insurance	2%	2%	2%	2%
	Ex Works	FOB/FC A	CIF/CFR	CIP																						
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clearing charges & inland freight and insurance	2%	2%	2%	2%																						
19	Procurement directly from the manufacturers/ suppliers shall be preferred. However, no agent shall be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer / supplier could bid directly but not both. In case bids are received from both from the manufacturer/ supplier and the agent, bid received from the agent shall be ignored.																									
20	RIGHT OF REJECTION /NON- PLACEMENT OF PO: BHEL reserves the right to accept or reject any or all bid/s in full or part without assigning any reason whatsoever.																									
21	INTEGRITY PACT Bidders shall have to enter into Integrity Pact with BHEL as per Annexure VI - for Tender value of rupees two crores and above and shall be signed by the authorized signatory along with the offer, failing which Bidder’s offer will be rejected.																									
22	Public Procurement																									
A	Make in India For this Procurement, the local content to categorize a bidder as a Class I local bidder / Class II local bidder / Non-Local bidder and purchase preference to Class I local bidder, is as defined in Public Procurement (Preference to Make in India) order No P-45021/2/2017-PP(BE-II) dated 04-06-2020 issued by DPIIT as amended from time to time. Proforma for self-certification for minimum local content and auditor’s certification is given in Annexure III.																									
B	Any Bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with competent authority. GOI website https://www.mea.gov.in/ to be referred for latest details of competent authority and exemptions . Proforma for self-certification for compliance is given in Annexure IV.																									
C	Startups: For Start-ups duly registered with DPIIT (Copy of certificate to be provided), condition of prior turnover and prior experience in Public Procurement may be relaxed subject to meeting of Quality and Technical Specifications. Startups are exempt from paying EMD.																									
23	Benefits earmarked for Purchase from Micro & Small Enterprises (MSEs) – Indigenous Purchase																									
A	All Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy are exempt from Paying EMD. NSIC/UDYAM registered bidders shall submit NSIC/UDYAM Certificate along with bid documents. Date to be reckoned for determining the deemed validity will be the last date of Technical bid submission. Non- submission of such document will lead to consideration of their bid, at par with other bidders and MSE status of such bidders shall be shifted to Non- MSE Category till the bidder submits these documents.																									

B	In tender, MSEs quoting price within price band of L1+15% shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a MSE and such MSE shall be allowed to supply at least 25% of total tendered value. In case of more than one such MSE, the supply shall be shared proportionately. Out of these 25% minimum 3% shall be earmarked for MSEs owned by women and 6.25% for MSEs owned by SC/STs who submit the relevant documents.
C	If an enterprise falling under MSME category as defined in the Act, graduates to a higher category from its original category or beyond the purview of the Act, it shall continue to avail all non-tax benefits of its original category notified by the Ministry of Micro, Small and Medium Enterprise for a period of three years from the date of such graduation to the higher category.
D	BHEL HPEP is registered with RXIL (TReDS) platform. MSME bidders are requested to get registered with RXIL (TReDS) platform to avail the facility as per the GOI guidelines.
24	Inspection Measuring and Test Equipment (IMTE) used by the Bidder/ Contractor or sub-contractor shall be calibrated, maintained and controlled. Calibration shall be valid and IMTE maintained in sound condition during usage.
25	ISO-9001, ISO14001 & OHSMS 45001 shall be complied.
26	If BHEL registered supplier is not quoting against this NIT, supplier shall send regret letter positively with valid reasons for not participating. Repeated lack of response on the part of supplier may lead to deletion of such registered supplier from BHEL's approved supplier's list as per BHEL SEARP Guidelines.
27	BREACH OF CONTRACT, REMEDIES AND TERMINATION: In case of Breach of Contract, BHEL shall recover 10% amount of the contract value from the vendor in any of the following manners: (i) Forfeiture/ encashment of Security instruments (Performance security, EMD etc.) available against the said contract. (ii) Pending / Available bills of the vendor , any amount available with BHEL HPEP or any other units of BHEL. (iii) In case recovery is not possible from security instruments or from financial remedies mentioned above, legal remedies shall be pursued. Important Notes: (1) Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract. (2) Non-performance of contract attracts penal provisions in line with BHEL guidelines for Suspension of Business Dealings (SBD).
28	Any other terms and conditions of the bidder attached / referred against the tender enquiry will not be considered.
29	All drawings, patterns and tools supplied by BHEL or made at BHEL's expense are BHEL's property. These cannot be used or referred to any other party and must be used only in the execution of BHEL's orders.
30	Any amount payable by the bidder under any of the conditions of this contract shall be liable to be adjusted against any amount payable to the bidder under any other work / contract awarded by BHEL HPEP or any other BHEL Units. This is without prejudice to any other action as may be deemed fit by BHEL.
31	The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, will be rejected. The list of firms banned by BHEL is available on BHEL web site: www.bhel.com
32	Ordering and confirmation of order
	The bidder shall send the order acceptance within one week from the date of LOI/Purchase order or such other period as specified/agreed by the Buyer. Buyer reserves the right to revoke the order placed if the order confirmation differs from the original order placed. Buyer shall be legally bound, only if agreed for any deviation explicitly in writing. The acceptance of deliverables or supplies by Buyer as well as payments made in this regard shall not imply acceptance of any deviations. The Purchase order will be deemed to have been accepted if no communication to the contrary is received within one week (or the time limit as specified /agreed by the Buyer) from the date of P.O. Buyer, is at liberty to send signed P.O. through electronic media such as e-mail and the receipt of which shall be treated as receipt of order.
33	Execution
	The whole contract is to be executed in the most workman like manner, substantial and approved as per the contracted terms.
34	Progress Report
	The bidder shall render such report as to the progress of work and in such form as may be called for by the Buyer from time to time. The submission and acceptance of such reports shall not prejudice the rights of the buyer in any manner. Bidder shall communicate to BHEL immediately, the change of address, ownership, contact person(s), the mobile numbers and e-mail of the dealing person concerned. Milestones shall be periodically updated by bidder through PRADAN Portal (https://hpep.bhel.com/mm/). Non updation will adversely affect service rating of bidder performance.
35	Non-disclosure Obligations

	<p>Drawings, technical documents or other technical information received by one party shall not without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to third parties. All information and data contained in general product documentation, whether in electronic or any other form, are confidential and binding only to the extent that they are by reference expressly included in the contract.</p> <p>The bidder shall, as per agreed date/s but not later than the date of delivery, provide free of charge any information and/or drawings which are necessary to permit the Buyer to erect, commission, operate and maintain the product. Such information and drawings shall be supplied as specified in technical specification.</p> <p>All intellectual properties, including designs, drawings and product information etc. exchanged during the formation and execution of the contract shall continue to be the property of the submitting party.</p> <p>The bidder shall provide Buyer with all information pertaining to the delivery in so far as it could be of importance to Buyer. The bidder shall not reveal confidential information to its own employees not involved with the tender/contract and its execution and delivery or to third parties, unless Buyer has agreed to this in writing beforehand. The bidder shall not be entitled to use the Buyer's name in advertisements and other commercial publications including website without prior written permission from Buyer.</p> <p>In the event of violation of the confidentiality as agreed, BHEL will take legal action as deemed fit. Non-disclosure agreement to be entered as per Annexure- II wherever applicable.</p>
36	Inspection and Testing
A	The goods and stores shall be manufactured by approved quality system and each part/component may be inspected and tested by the Buyer prior to shipment and shall comply with relevant requirements. Buyer has the right to inspect at any stage during manufacture/ delivery.
B	<p>Buyer or his authorized representative shall be entitled at all reasonable times during execution to inspect, examine and test at the bidder's premises the material and workmanship of all stores to be supplied under the contract, and if the part of the stores are being manufactured at other premises, the bidder shall obtain for buyer or his authorized representative permission to inspect, examine and test as if the said stores are being manufactured at the bidder's premises. Such inspection, examination and testing, if made shall not release the bidder from any obligation under the contract.</p> <p>For indigenous bidders all costs related to first inspection request shall be borne by the buyer and the cost of subsequent inspections due to non-readiness of material/rework/ rejections shall be borne by the bidder. In case of imports all inspection charges including third party inspections if any shall be borne by the bidder. The cost of inspection staff/third party specified by the Buyer shall be borne by bidder unless otherwise specifically agreed. If the contract provides for tests on the premises of the bidder or any of his sub-contractor/s, bidder shall be responsible to provide such assistance, labor, materials, electricity, fuels, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently.</p> <p>Cost of any type test or such other special tests shall be borne by the bidder unless otherwise specifically agreed in the contract.</p> <p>The Bidder shall give the authorized representative of the buyer reasonable notice in writing of the date on and the place at which any stores will be ready for inspection/ testing as provided in the Contract. Annexure – I, may strictly be complied with or the time lines. Any delay in submission of the documents by the bidder will not alter the delivery date.</p>
37	Quality and Condition of the Deliverables
	The bidder shall be responsible for compliance with applicable technical, safety, quality, environmental requirements and other regulations in relation to products, packaging and raw and ancillary materials.
38	Packaging and Dispatch
	<p>The bidder shall package the deliverables safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by sea/air/rail/road to its destination suitably protected against loss, damage, corrosion in transit and the effect or tropical salt laden atmosphere. The packages shall be provided with fixtures/hooks and sling marks as may be required for easy and safe handling by mechanical means. Special packaging conditions/ environmental conditions as defined in the NIT shall be fully complied.</p> <p>Each package must be marked with consignee name, address, P.O. number, Package Number, gross weight & net weight, dimensions (Lx B x H) and bidder's name. The packing shall allow for easy removal and checking of goods on receipt and comply with carrier's conditions of packing or established trade practices. Packing list for goods inside each package with P.O. item No. & quantity must also be fixed securely outside the box to indicate the contents. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols/instructions. Hazardous material should be notified as such and their packing, transportation and other protection must conform to relevant regulations.</p>
39	Contract variations; Increase or decrease in the scope of supply
	<p>Buyer may vary the contracted scope during execution due to exigencies of project requirement.</p> <p>If the bidder is of the opinion that the variation has an effect on the agreed price or delivery period, Buyer shall be informed of this immediately in writing along with technical details, and in the event of additional work, submit a quotation with regards to the price and period involved, as well as the effect this additional work will have on the other work to be performed by the bidder. Wherever unit rates are available in the contract, the same shall be applied to such additional work. The bidder shall not perform additional work before buyer has issued written instructions/amendment to the purchase order to that effect.</p> <p>The work which the bidder should have or could have anticipated in terms of delivering the service (s) and functionality (ies) as described in this agreement should be executed by the bidder without any price implication.</p> <p>In case of no change in the scope / technical specifications, bidder shall endeavor to keep the material ready and intimate the same to BHEL within the contractual delivery date, failing which, the delay if any will be attributed to supplier, and any upward price variation thereof for delivery at a later date is not admissible.</p>
40	Rejected/Short shipments/ warranty/guarantee replacements
	In case of any short shipment during initial supply which is subsequently dispatched by the bidder or any guarantee / warranty replacements shall be dispatched on "DDP-Delivered duty paid BHEL stores" basis for imported items and "FOR-BHEL Stores/designated destination" basis for indigenous items.
41	Export Administration Regulations

	If a delivery includes such technology and / or supply that is subjected to the export regulations the bidder shall obtain due permissions, approvals, license etc.
42	Force Majeure
	<p>The bidder shall not be considered in default if delay occurs due to causes beyond their control such as Acts of God, Natural calamities, Fire, Frost, Flood, Civil War, civil commotion, riot, Government Restrictions.</p> <p>Only those causes that have duration of more than seven days shall be considered cause of force majeure. Notification to this effect duly certified by local chamber of commerce/statutory authorities with supporting documents shall be given by the bidder to BHEL by registered letter/courier service immediately without loss of time.</p> <p>In the event of delay due to such causes the delivery schedule shall be extended for a length of time equal to the period of Force Majeure or at the option of BHEL the order may be cancelled. Such cancellation would be without any liability whatsoever on the part of BHEL.</p> <p>In the event of such cancellation the bidder shall refund any amount advanced or paid to the bidder by BHEL and deliver back any material issued to him by BHEL and release facilities, if any provided by BHEL.</p>
43	Non-waiver of Defaults
	If any individual provision of the contract is invalid, the other provisions shall not be affected.
44	Settlement of Disputes
	<p>Except as otherwise specifically provided in the contract, all disputes concerning questions of the facts arising under the contract, shall be decided by the Buyer, subject to written appeal by the bidder to the buyer, whose decision shall be final. Any disputes of differences shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration</p> <p>The bidder shall continue to perform the contract, pending settlement of disputes(s).</p>
45	Conciliation clause
	<p>CONCILIATION CLAUSE FOR CONDUCTING CONCILIATION PROCEEDINGS UNDER THE BHEL CONCILIATION SCHEME, 2018: The Parties agree that if at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the agreement, contract or the Memorandum of Understanding, penalty deduction, time extension), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.</p> <p>The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure in http://www.bhel.com/index.php/story_details?story=2454 .</p> <p>The Procedure together with its Formats will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this ITB</p>
46	ARBITRATION
	<p>46.1 Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 45 herein above or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to IAMC (International Arbitration and Mediation Centre, Hyderabad) and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the IAMC Rules.</p> <p>46.2 A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to IAMC. The Notice shall be addressed to the Head of the Unit, BHEL, executing the Contract and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any.</p> <p>46.3 After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to IAMC and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd Judge having considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to a specific Arbitral institution for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.</p> <p>46.4 The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.</p> <p>46.5 The Arbitration proceedings shall be in English language and the seat and venue of Arbitration shall be Hyderabad.</p> <p>46.6 Subject to the above, the provisions of Arbitration & Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at Hyderabad.</p> <p>46.7 Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.</p> <p>46.8 It is agreed that Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.</p> <p>46.9 In case the disputed amount Claim, Counter claim including interest is Rs. 10 crores and above, the parties shall be within</p>

	<p>their rights to take recourse to remedies other than Arbitration, as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.</p> <p>46.10 In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of clause 46.9. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.</p> <p>In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 05/0003/2019-FTS-10937 dated 14-12-2022 as amended from time to time.</p>
47	Applicable Laws and jurisdiction of Courts
	<p>This contract shall be governed by the Law for the time being in force in the Republic of India. Subject to clause 46 of this contract, the Civil Court having original Civil Jurisdiction at Hyderabad, shall alone have exclusive jurisdiction in regard to all matters in respect of the Contract."</p>
48	BHEL-Fraud prevention policy shall be adhered to.
	<p>The Bidder along with its associate/ Collaborators/ Sub-contractors/ sub-bidders/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention policy displayed on BHEL Website http://www.bhel.com and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.</p> <p>List of nodal officers is hosted on BHEL Hyderabad website https://hpep.bhel.com/.</p>
49	Suspected Cartel Formation
	<p>The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case , the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies / guidelines .</p>
50	Conflict of Interest:
	<p>"A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:</p> <ol style="list-style-type: none"> a) they have controlling partner (s) in common; or b) they receive or have received any direct or indirect subsidy/ financial stake from any of them; or c) they have the same legal representative/agent for purposes of this bid; or d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; or e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from. one bidding manufacturer in more than one bid; or f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following: <ol style="list-style-type: none"> 1. The principal manufacturer directly or through one Indian agent on his behalf; and 2. Indian/foreign agent on behalf of only one principal; or g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; or h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business. "

Note: Purchase officer has to fill Annexure-I while sending enquiry

(To be executed on Non- Judicial Stamp Paper for an appropriate value.
To be stamped as an agreement)

(For Suppliers on Unit's / Division's PMD)

ANNEXURE-II

Framework Confidentiality Agreement Cum Undertaking

This Agreement made on this the _____ day of (month) _____ 20 ____ ("Effective Date") by and between M/s. BHARAT HEAVY ELECTRICALS LIMITED, having registered office at "BHEL House", Siri Fort, New Delhi – 110049 (India), acting through its _____ Unit (hereinafter may be referred to as "BHEL" or "the company").

And

M/s. _____ (address) _____
represented by authorized representative Sri _____ (herein after referred to as the "Supplier").

The supplier and the company may, unless the context otherwise requires, hereinafter be collectively referred to as "Parties" or singly as the "Party".

RECITALS

Whereas, BHEL is engaged in the design, engineering, manufacturing, construction, testing, commissioning and servicing of a wide range of products, systems and services for the core sectors of the economy, viz. Power, Transmission, Industry, Transportation, Renewable energy, Oil & Gas and Defence and providing associated services to varied customers in relation to which BHEL / its affiliates own valuable information of a secret and confidential nature.

Whereas the Company may, in connection with contract(s) (as defined hereunder) placed or to be placed upon the supplier, or otherwise, from time to time, make available, Technical Information as is defined hereunder.

And Whereas BHEL is willing to provide such Technical Information to the Supplier from time to time and the Supplier understands and acknowledges that such Technical Information is valuable for the Company and as such is willing to protect confidentiality of such information, subject to the terms and conditions set out hereunder.

Now therefore, in view of the foregoing premises and in consideration of the mutual covenants and agreements hereinafter set forth, the parties agree as under:

1. Definitions:

Unless the context so requires, in this Agreement, the following terms will bear the meaning ascribed to the said term in this clause.

- A. **“Contract”** means the contract entered into with a supplier and includes a Purchase Order, or a Work Order for procurement of any goods or for provision of any services.
- B. **“Effective Date”** means the date of this Agreement as mentioned in the preamble of this Agreement.
- C. **“Supplier”** includes a Contractor or a Vendor of the Company whether for supplying of goods or for providing any services under a Contract or both.
- D. **“Technical Information”** includes Drawings, and / or Product Standards and / or Specifications and / or Corporate / Plant Specifications and / or Technological Process Sheets and / or Technical Data Sheets and / or Jigs & Fixtures and / or Pattern & Dies and / or Special Gauges and / or Tools etc. Belonging to or wherein the Company has acquired from a third party a right of user and includes any improvement thereto from time to time whether carried out by the Company or by the Suppliers.
- E. **“Intended Purpose”** means the purpose for which the Technical Information is provided to the supplier under or in connection with a contract.
- F. **“Improvement”** includes any modification made to, or adaptation of, the Technical Information which enhances or is calculated to enhance the performance (Whether in terms of effectiveness or in terms of efficiency or both) of the product and / or the service to be provided by the Supplier under a Contract.

2. This Agreement shall come into force / deemed to have come into force, as the case may be, on the Effective Date; or, on the first date when the Technical Information or any part thereof is provided by BHEL to the supplier; whichever is earlier.

3. **Agreement deemed to be incorporated in each contract:** Unless and to the extent otherwise stipulated in the Contract, the conditions of this Agreement are deemed to be incorporated in all Contracts which may be entered into between the Company and the Supplier. Further, unless otherwise stipulated, the obligations under this Agreement are and will be independent of the obligations under the Contracts and such obligations of the Supplier hereunder will remain of full effect and validity notwithstanding that the period of validity of the Contract has expired by efflux of time stipulated therein; or, the contract has been discharged by performance or breach; or, the termination of the Contracts for any reason whatsoever.

4. **Ownership:**

4.1 The Company may, from time to time, make available to the Supplier, Technical Information on a non-exclusive basis by way of loan.

4.2 The Supplier acknowledges and agrees that all Technical Information and copies thereof that are or may be provided by the Company to the Supplier, are and shall remain the property of

BHEL or that of the concerned entity from whom BHEL has obtained the Technical Information and such Technical Information are and shall constitute trade secrets of the BHEL. Nothing in this Agreement or in any disclosures made hereunder by or on behalf of the Company shall be construed as granting upon the Supplier any patent, copyright or design or any other intellectual property rights of whatsoever description that subsists or may hereinafter exist in the Technical Information. Furthermore, nothing in this Agreement or in any disclosures made hereunder by or on behalf of the Company shall be construed as granting upon the supplier any license or right of use of such patent, copyright or design or any other intellectual property rights of whatsoever description which may now or hereafter exist in the Technical Information except for use of the Technical Information strictly in accordance with this Agreement and the contract and / or as directed in writing by the Company, solely for the Intended Purpose under the Contract.

- 4.3 Neither party is obligated by or under this Agreement to purchase from or provide to the other party any service or product and that any such purchase / sale of any product and / or service by one party to the other party will be governed by the Contract if any, that may be entered into by and between the Company and the Supplier.
- 4.4 The Supplier is / has been made well aware and acknowledges that the Technical Information being / which may be shared with it by the Company has been either generated by the Company by incurring huge investment and cost or obtained from foreign collaborators under Technical Collaboration Agreement (TCA) with stringent confidentiality conditions.
- 4.5 The supplier agrees and undertakes to adhere to confidentiality requirements as applicable to BHEL under a TCA and also ensure that the confidentiality requirements are adhered to by all its concerned employees or sub-contractors /suppliers (where permitted to be engaged by BHEL). Any damages, losses, expenses of any description whatsoever, arising out of or in connection with a breach of the confidentiality requirements under a TCA owing to any act or omission on the part of the supplier or its employees or sub-contractors / suppliers that is claimed by a foreign collaborator from the Company shall be wholly borne by the Supplier and it shall keep BHEL fully indemnified in this behalf. The demand by the Company shall be conclusive upon the Supplier who shall thereupon forthwith pay to the Company without demur, dispute or delay the amount as demanded without demanding any further proof thereof.
- 4.6 The Supplier agrees and undertakes that unless so decided and advised by the Company in writing all rights / title to any Improvement to the Technical Information shall vest in the Company. The Supplier undertakes and agrees to inform forthwith to the Company of any such Improvement made to the Technical Information and transfer all drawings / documents or other materials connected with such Improvement to the Company and also agrees to fully cooperate with the Company for protecting the Company's interests in such Improvements

in the Technical Information including but not limited to obtaining necessary protection for the intellectual property rights in such improvement, if so desired by the Company. If a question arises whether a modification amounts to improvement to the Technical Information, the same shall be decided by the Company and such decision shall be final and binding upon the supplier.

5. Use and Non – Disclosure:

5.1 Unless otherwise stipulated by the Company, all Technical Information made available to the supplier, by the Company shall be treated as Confidential irrespective of whether the same is marked or otherwise denoted to be Confidential or not.

5.2 The Supplier undertakes and agrees that the Technical Information in its possession shall be held in strict confidence and will be used strictly in accordance with this Agreement and solely for the Intended Purpose under the Contract. Use of the Technical Information for any other purpose other than Intended Purpose is prohibited.

5.3 In particular, the Supplier shall not use Technical Information or any Improvement in its possession for the manufacture or procurement of the product(s) or components or parts thereof or use the Technical Information or any portion thereof or any modification or adaptation thereof in any form to provide any product and / or service to any third party, without the prior written consent of the Company.

5.4 The Supplier shall not disclose any of such Technical Information to any third party without the prior written consent of the Company. The Supplier agrees that without prior written consent of the Company, the supplier shall not disclose to a third party about the existence of this Agreement, or of the fact that it is / was in possession of or has experience in the use of any Technical Information nor shall the Supplier share in any manner whatsoever, with a third party, the name or details of any Contract(s) awarded by the Company to it or performed by the Supplier or the scope of work thereof or share any document or correspondence by and between the Company and the supplier in or in connection with this Agreement or such Contract(s). Notwithstanding what is stated elsewhere, the overall responsibility of any breach of the confidentiality provisions under this Agreement shall rest with the Supplier.

5.5 This Supplier undertakes and agrees not to make copies or extracts of and not to disclose to other any or all of the Technical Information in its possession, except as follows:

(a) The Supplier may disclose the Technical Information to such of its officers and employees strictly to the extent as is necessary for such officer or employee for the Intended Purpose, provided that the Confidential Information (or copies thereof) disclosed shall be marked

clearly as the confidential and proprietary information of Company and that such officers and employees shall similarly be bound by undertakings of confidence, restricted use and non-disclosure in respect of the Technical Information. The Supplier shall be responsible for any breach of such confidentiality provisions by such officers and employees.

- (b) With the prior written consent of Company, the supplier may disclose for the Intended Purpose such Technical Information as is provided for in such consent to such of its professional advisers: consultants, insurers and subcontractors who shall be similarly bound by undertakings of confidence, restricted use and non-disclosure in respect of such Technical Information.
- (c) The Supplier shall not be prevented to make any disclosure required by (i) order of a court of competent jurisdiction or (ii) any competent regulatory authority or agency where such disclosure is required by law, provided that where the supplier intends to make such disclosure, it shall first consult Company and take all reasonable steps requested by it to minimize the extent of the Technical Information disclosed and to make such disclosure in confidence and also shall cooperate with the Company in seeking any protective order or any other remedy from proper authority in this matter.

6. Exceptions:

The Obligations of the Supplier pursuant to the provisions of this agreement shall not apply to any Confidential Information that:

- a) was / is known to, or in the possession of the Supplier prior to disclosure thereof by the Company;
- b) is or becomes publicly known, otherwise than as a result of a breach of this agreement by the Supplier.
- c) is developed independently of the Disclosing party by the Supplier in circumstances that do not amount to a breach of the provisions of this Agreement or the Contract;
- d) is received from a third party in circumstances that do not result in a breach of the provisions of this Agreement.

- 7. The Obligation of maintaining confidentiality of the Technical Information on each occasion, shall subsist for the entire duration during which the Technical Information / equipment is in possession of the Supplier and shall thereafter subsist for a further period of _____ years from the date when the complete Technical Information has been returned in portions on different dates, the period of ____ years will be reckoned from the date when the last portion of the Technical Information has been returned. Notwithstanding the expiry of the confidentiality obligation, the obligation of the Supplier under clause 5.4 shall continue to subsist for a further period of _____ years.

8. Warranties & Undertakings:

- a) The Supplier undertakes to ensure the due observance of the undertakings of confidence, restricted use and non-disclosure by its persons to whom it discloses or releases copies or extracts of the Technical Information.
- b) The Supplier shall keep the Technical Information or improvement made therein properly segregated and not mix up the same with any other material / documents belonging to him / it or to any other third party.
- c) The Supplier further undertakes that he / it shall not hypothecate or give on lease or otherwise alienate or do away with any of the Technical Information and / or equipment of the Company, made available to him / it, and undertakes that he / it shall hold the same as a trustee, in capacity of custodian thereof and use / utilise the same solely for the purpose of executing the contract awarded by the Company.
- d) The Supplier further undertakes that he / it shall return all the equipment and / or Technical Information as far as practicable in the same condition in which the same was made available to him / it by the Company together with any Improvement thereon and the documents connected with such Improvement, to the Company forthwith upon completion of the scope of work or contract for which such Technical Information was provided by the Company to it or as directed by the Company together with a confirmation by way of an affidavit or in such manner as directed by the Company that it has not retained any equipment and / or Technical Information / improvement thereof. In case any such equipment and / or Technical Information or thereof shall remain in his possession or is not capable of being returned, the retention and use of such Technical Information or improvement thereto shall continue to be governed by this Agreement.
- e) The Supplier undertakes to indemnify the Company for all the direct, indirect and / or consequential losses, damages, expenses whatsoever including any consequential loss of business, profits suffered by the Company owing to breach by the Supplier of its obligations under this Agreement and / or the confidentiality requirements, if any, contained in the Contract and that the Supplier hereby agrees that the decision of the Company in all such or any such matter/s shall be final and binding on the Supplier. On mere written demand of the Company, the Supplier shall forthwith and without demur or delay pay to the Company any such sum as determined by the Company as the amount of loss or damage or expense which has been suffered by the Company. The Supplier agrees that the Company shall be entitled to withhold and appropriate any amount payable to the Supplier under any Contract then existing between the Company and the Supplier, in case the Supplier fails to make payment, in terms of the written demand, within 7 days thereof. Without prejudice to the forgoing actions, in respect to any breach of this Agreement, the Company shall be entitled to take

any other action against the Supplier as per applicable laws, the Contract, Company's applicable policies, guidelines rules, procedures, etc.

9. Without prejudice to any other mode of recovery as may be available to the Company for recovery of the amount determined as due as per Clause 9 (f) hereinabove, the Company shall have a right to withhold, recovery and appropriate the amount due towards such losses, damages, expenses, from any amount due to the Supplier in respect of any other Contract (s) placed on him / it by any department / office / unit/ division of the said Company.

10. Arbitration & Conciliation:

Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the Parties, in respect of any dispute or difference; arising out of the formation, breach, termination, penalty deduction, validity or execution of the Contract; time extension, or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, then, either Party may, by a notice in writing to the other Party refer such dispute or difference to the sole arbitration. Sole arbitrator to be appointed by Head of the Unit - BHEL, HPEP.

The Arbitrator shall pass a reasoned award and the award of the Arbitrator shall be final and binding upon the Parties.

Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause.

The seat of arbitration shall be Sangareddy / Hyderabad, Telangana. The language of arbitration shall be English and the documents shall be submitted in English.

The cost of arbitration shall initially be borne equally by the Parties subject to the final apportionment of the cost of the arbitration in the award of the Arbitrator.

Subject to the arbitration in terms of clause 46 of ITB (clause 27 of ATC GeM), the courts at Sangareddy, Telangana State shall have exclusive jurisdiction over any matter arising out of or in connection with this contract.

Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

ARBITRATION FOR CONTRACT WITH PUBLIC SECTOR ENTERPRISE (PSE) OR A GOVERNMENT DEPARTMENT

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD as mentioned in DPE OM No 4(1)/2013-DPE(GM/FTS 1835 dated 22-05-2018

CONCILIATION CLAUSE FOR CONDUCTING CONCILIATION PROCEEDINGS UNDER THE BHEL CONCILIATION SCHEME, 2018: The Parties agree that if at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the agreement, contract or the Memorandum of Understanding, penalty deduction, time extension), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure in http://www.bhel.com/index.php/story_details?story=2454 . The Procedure together with its Formats will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this ITB

11. Governing Law & Jurisdiction:

This agreement shall be construed and interpreted in accordance with the laws of India and shall have exclusive jurisdiction of Sangareddy/Hyderabad courts, Telangana, India.

SIGNATURE

WITNESSES

1

Name:

Address:

2

Name:

Address:

Annexure - III

Proforma for self-certification by Supplier for minimum local content on their letter head for tender value less than Rs 10 Crore

"We _____ (Name of Manufacturer) undertake that we meet the mandatory minimum Local Content (LC) requirement i.e. _____ (to be filled as notified in the policy) for claiming Purchase Preference linked with Local Contents under the Govt. policy against tender no. _____."

Auditor's certification with respect to minimum local content on the letter head of Statutory Auditor for tender value above Rs.10 crore

"We _____ the statutory auditor of M/s _____ (name of the bidder) hereby certify that M/s _____ (name of manufacturer) meet the mandatory Local Content requirements of the Goods and/or Services i.e. _____ (to be filled as notified in the policy) quoted vide offer No. _____ dated _____ against BHEL's tender No. _____ by M/s _____ (Name of the bidder)."

Annexure - IV

Proforma for self-certification by Supplier for Compliance to Clause No 20 (B)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and I certify that M/s.... (Name of firm) is **not from such a country/is from such a country** (delete whichever is NOT applicable) and has been duly registered with the Competent authority (delete if NOT applicable) . I hereby certify M/s fulfills all requirements in this regard and is eligible to be considered . (where applicable , valid registration by the competent authority shall be attached)

Sd/-

Authorised Signatory with Stamp

Annexure V

(On Company Letter Head)

FORM NO. 10F

[See sub-rule (1) of rule 21AB]

Information to be provided under sub-section (5) of section 90 or sub-section (5) of section 90A of the Income-tax Act, 1961

I..... son/daughter of Mr in the capacity of.....
(Designation) do provide the following information, relevant to the previous year **2021-22** in case of for the purposes of sub-section (5) of section 90/section 90A:-

Sl.No.	Nature of information	Details
(i)	Status (individual; company, firm etc.) of the assessee	Company
(ii)	Permanent Account Number (PAN) of the assessee if allotted	
(iii)	Nationality (in the case of an individual) or Country or specified territory of incorporation or registration (in the case of others)
(iv)	Assessee's tax identification number in the country or specified territory of residence and if there is no such number, then, a unique number on the basis of which the person is identified by the Government of the country or the specified territory of which the assessee claims to be a resident

(v)	Period for which the residential status as mentioned in the certificate referred to in sub-section (4) of section 90 or sub-section (4) of section 90A is applicable	<u>2022-23</u>
(vi)	Address of the assessee in the country or territory outside India during the period for which the certificate, mentioned in (v) above, is applicable

I have obtained a certificate to in sub-section (4) of section 90 of sub-section (4) of section 90A from the Government of..... (name of country or specified territory outside India)

Signature:.....

Name:.....

Address:.....

Email ID:.....

Contact Number.....

Permanent Account Number:.....

Verification

I..... do hereby declare that to the best of my knowledge and belief what is stated above is correct complete and is truly stated. Verified today the..... day of.....

In case the M/s Bharat Heavy Electricals Limited, HPEP, Ramachandrapuram, Hyderabad is declared as an assessee in default due to any misstatement or incorrect declaration, we indemnify M/s Bharat Heavy Electricals Limited from any ensuing consequences thereunder.

Signature of the person providing the information

Place:.....

(On Company Letter Head)

No Business Connection or Permanent Establishment Certificate

Date

To

Bharat Heavy Electricals Limited
Ramachandrapuram, Hyderabad
India - 502032

Sir,

Sub: No Business Connection or Permanent Establishment declaration for FY **2021-22**

This is to certify that (Name of the supplier) is a company incorporated in(country) and does not have any business connection in India as per the provision of Section 9 of the Income Tax Act 1961 or any Permanent Establishment as defined in Article 5 of the India and(country) DTAA.

We hereby certify that we will notify BHEL in case of any change in the status as certified above.

For

Authorised Signatory

(Note – Please refer definition of the Business Connection on reverse and Permanent Establishment in the relevant DTAA)

"Business connection" as defined in Section 9 of the Income Tax Act shall include any business activity carried out through a person who, acting on behalf of the non-resident,—

- (a) has and habitually exercises in India, an authority to conclude contracts on behalf of the non-resident or habitually concludes contracts or habitually plays the principal role leading to conclusion of contracts by that non-resident and the contracts are—
 - (i) in the name of the non-resident; or
 - (ii) for the transfer of the ownership of, or for the granting of the right to use, property owned by that non-resident or that non-resident has the right to use; or
 - (iii) for the provision of services by the non-resident; or
- (b) has no such authority, but habitually maintains in India a stock of goods or merchandise from which he regularly delivers goods or merchandise on behalf of the non-resident; or
- (c) habitually secures orders in India, mainly or wholly for the non-resident or for that non-resident and other non-residents controlling, controlled by, or subject to the same common control, as that non-resident:

Provided that such business connection shall not include any business activity carried out through a broker, general commission agent or any other agent having an independent status, if such broker, general commission agent or any other agent having an independent status is acting in the ordinary course of his business :

Provided further that where such broker, general commission agent or any other agent works mainly or wholly on behalf of a non-resident (hereafter in this proviso referred to as the principal non-resident) or on behalf of such non-resident and other non-residents which are controlled by the principal non-resident or have a controlling interest in the principal non-resident or are subject to the same common control as the principal non-resident, he shall not be deemed to be a broker, general commission agent or an agent of an independent status

For the removal of doubts, it is hereby clarified with explanation-2A, that the significant economic presence of a non-resident in India shall constitute "business connection" in India and "significant economic presence" for this purpose, shall mean—

- (a) transaction in respect of any goods, services or property carried out by a non-resident in India including provision of download of data or software in India, if the aggregate of payments arising from such transaction or transactions during the previous year exceeds such amount as may be prescribed; or
- (b) systematic and continuous soliciting of business activities or engaging in interaction with such number of users as may be prescribed, in India through digital means:

Provided that the transactions or activities shall constitute significant economic presence in India, whether or not,—

- (i) the agreement for such transactions or activities is entered in India; or
- (ii) the non-resident has a residence or place of business in India; or
- (iii) the non-resident renders services in India:

Thresholds for the purposes of significant economic presence.

11UD. (1) For the purposes of clause (a) of Explanation 2A to clause (i) of sub-section (1) of section 9, the amount of aggregate of payments arising from transaction or transactions in respect of any goods, services or property carried out by a non-resident with any person in India, including provision of download of data or software in India during the previous year, shall be two crore rupees;

(2) For the purposes of clause (b) of Explanation 2A to clause (i) of sub-section (1) of section 9, the number of users with whom systematic and continuous business activities are solicited or who are engaged in interaction shall be three lakhs.



GUIDELINES FOR REVERSE AUCTION - 2024



Guidelines for Reverse Auction – 2024

Doc. No. AA:SSP:RA:00
Dated: 05.12.2024

1. Scope

- 1.1. This document describes the guidelines to be followed by each Unit/ Division/ Region for conducting Reverse Auction (RA) for procurement of material/ works/ services. These guidelines will be applicable for purchases/ contracts to be awarded under Purchase/ Works policy and the RA shall follow the philosophy of English Reverse (No ties).
- 1.2. Based on these guidelines, Units/ Divisions/ Regions (hereinafter referred as 'units') may issue their own Departmental Procedures without changing the intent and spirit of the guidelines contained in this document. These guidelines will supersede earlier guidelines issued vide AA:SSP:RA:05 dated 08.03.2021.
- 1.3. English Reverse (No ties) is a type of auction where the starting price and bid decrement are announced before start of online reverse auction. The interested bidders can thereupon start bidding in an iterative process wherein the lowest bidder at any given moment can be displaced by an even lower bid of a competing bidder, within a given time frame. The bidding is with reference to the current lowest bid in the reverse auction. All bidders will see the current lowest quoted price and their rank. The term 'No ties' is used since more than one bidder cannot give an identical price, at a given instant, during the reverse auction. In other words, there shall never be a tie in the bids.

2. Intent of Reverse Auction

To derive maximum benefit in cost savings through competitive bidding.

3. Upfront declaration in NIT

- 3.1. Wherever it is felt that procurement may be done through Reverse Auction, the bids shall be invited in two parts/ three parts or single part bid (Price Bid) where Techno-Commercial MoU already exists. Wherever, the evaluation is done for individual line item, separate sealed price bid for each line item shall be taken.
- 3.2. Decision to go for RA would be taken before floating of the tender. In case it is decided to go for RA, same shall be declared upfront in NIT by inserting the following clause:

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted

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among the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed price bid along with applicable loading, if any, shall be considered for ranking."

4. Aspects to be considered for RA

4.1. While RA can drive cost savings, they should be used judiciously, considering the broader implications beyond price alone. Therefore, RA should not be used indiscriminately or as a default mode of procurement. One may choose procurement of goods/ works/ services that are amenable to this mode of procurement.

4.2. The cases where RA would not be appropriate are as under:

- a) In Engineered products having complexity in design
- b) Items of strategic/ critical/ vital/ high technical complex nature, items that are in short supply in the market
- c) The requirement is not of high enough value to generate competitive pressures on bidders.
- d) Where the QCBS system of selection is used
- e) Where opting for RA in the tender would bring down competition
- f) EPC contracts and complex Works contracts
- g) Where it is proposed to issue parallel orders by splitting the total order quantity among more than one supplier

4.3. RA shall not be done for selection of business partners through pre-bid/ strategic tie-ups

4.4. If it is decided to go for RA, the following may be considered:

- a) Number of techno-commercially qualified bidders in previous tender for same/ similar class of item
- b) Price volatility of the item(s) under consideration
- c) Past purchase experience of similar item(s)
- d) Tender Value of the item(s) under procurement
- e) Any other aspect which may be specific to tender

Above aspects may be considered by the tender issuing authority to decide before floating of the tender, if RA is to be conducted or not for

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that particular tender.

Note: Decision to go for RA or not will be on case to case basis with recorded reasons.

5. RA Committee

5.1. Purchase/ Tender committee, if already in place, shall also act as RA committee. Purchase representative will be the convener. In case Purchase/ Tender committee has not been formed, the Product Manager/ MM Head/ Department Head, shall constitute RA committee consisting of representatives (*rank as per DoP of tender/ negotiation committee*) from departments of Engineering/ Indenter/ User, Purchase and Finance. This committee will work for a specific tender. The role of RA committee shall be as below:

- a) To vet the comparative statement comprising sealed price bids received, MSE status, qualification against Public Procurement (Preference to Make in India), Order 2017 (PPP-MII, Order 2017) of all techno-commercially qualified bidders, loading etc. before sending it to the service provider for RA.
- b) To decide and record the 'Start-Price' and 'Bid Decrement'.
- c) To observe the RA process and declare RA as successful.

6. Business rules for RA

6.1. Model Business rules (annexure I) and other annexures II to VI are attached. MM shall prepare and fill in the required details in the annexures at appropriate places like:

- a) Enquiry/ Request for Quotation (RFQ) number
- b) Name and Addresses of the bidders
- c) Items description, quantities/ weight, Specification
- d) Date and time of opening and closing of RA
- e) Extension conditions
- f) Loading Criteria/ Formulae
- g) Foreign Exchange (FE) rates for evaluation
- h) Taxes & Duties
- i) Freight & Insurance
- j) Bidders' training, if required, etc.

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6.2. The calculation sheet e.g. excel sheet (which will help to arrive at 'Total Cost to BHEL') which is communicated to respective bidders of RA, will be prepared by MM and vetted by Finance. This calculation sheet will be finalized based on the evaluation criteria specified in the NIT and will be same based on which sealed price bids have been evaluated.

6.3. MM shall issue a mandate (annexure II) to the service provider covering business rules etc. and inform about event, calculation sheet etc. to all techno-commercially accepted bidders.

7. Role of Service Provider

- (1) Acknowledge the receipt of mandate from BHEL.
- (2) Contact the bidders, provide business rules and train them, as required.
- (3) Get the process compliance form (annexure III) signed by all the participating bidders before RA event.
- (4) Conduct the event as per the contract and business rules.
- (5) Submit the Login Reports, Results, History sheet and authorized final bid from the bidders.
- (6) To obtain price breakup from successful bidder and submit the same to BHEL.

8. Start Price

Start price for RA shall be lowest of sealed price bid.

Note: Wherever more than one lowest sealed price bids are identical, RA committee shall declare the start price by reducing the lowest sealed price bid by maximum of one decrement.

9. Witnessing Auction

Access to witness the RA shall be available to the concerned officials of BHEL (Indenter/ Finance Officials/ Purchase Officials), nominated by Head MM/ Purchase/ Contracts.

10. Reverse Auction Process

10.1. Reverse Auction will be conducted if two or more bidders are techno-commercially qualified.

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- 10.2. Wherever RA is opted in a tender, the techno-commercially qualified H1 will not be allowed to participate in RA. In case more than one H1 bidder quote the same rate, the Price Offer received last, as per the time log of the Portal, shall be removed first, on the principle of last in, first out by the system.
- 10.3. However, H1 will be allowed to participate in RA in the following cases:
- a) If number of techno-commercially qualified bidders are only 2 or 3.
 - b) In case Primary product of only one OEM is left in contention for participation in RA on elimination of H1.
 - c) For cases where there are more than 3 techno-commercially qualified bidders, if lowest bidder in sealed price bid is non-MSE and H-1 is eligible MSE and H-1 price is coming within price band of 15% of Non-MSE lowest bidder.
 - d) For cases where there are more than 3 techno-commercially qualified bidders, if lowest bidder in sealed price bid is non-MII and H-1 is eligible MII and H-1 price is coming within price band of 20% of Non-MII lowest bidder.
- 10.4. Only those bidders who submit the online sealed bid within the scheduled time shall be eligible to participate further in the RA process.
- 10.5. The lowest bidder in sealed price bid shall be shown as current L1 automatically by the system. System shall have the provision to indicate this bid as current L1 for further bidding. This price can be displaced by an even lower bid of a competing bidder.
- 10.6. If the start price is lower than the lowest sealed price bid (in line with clause 8.0), on acceptance of such start price by any bidder this bid would be indicated as current L1 for further bidding. However, if no bidder accepts the start price, RA shall be treated as cancelled for the respective line item(s) and the tender shall be processed accordingly.
- 10.7. In case of no further bidding, RA will be deemed to have been successful with current L1 bidder. During RA, all bidders will see their rank and current L1 price on the screen. Once the RA is done, the ranking status would be based on the last quoted price of the bidder(s) irrespective of the quote received in RA or sealed price bid.

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10.8.No bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.

11.Processing of case after RA

11.1.Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

11.2.Reasonability of rates received through RA to be ascertained as per extant Policy provisions.

12.Payment to the Service Provider

Payment shall be made as per the agreed terms of the Framework Agreement with the service provider based on the mandate issued and service provider's invoice certified by the respective MM. If the RA event is conducted as per the mandate given by BHEL and agreed procedure, payment shall be made to the service provider irrespective of the auction outcome.

13.Others

13.1.If RA is being conducted for multiple line items and L1 is to be decided for individual items, number of items in single screen be restricted to 10 (ten) to avoid scrolling by the bidders.

13.2.In case of enquiry through e-Procurement, the sealed electronic price bid (e-bid) is to be treated as sealed envelope price bid.

13.3.BHEL will inform bidders the details of service provider who will provide business rules, all necessary training and assistance before commencement of online bidding.

13.4.Bidders will be advised to read the 'Business Rules' indicating details of RA event carefully, before reverse auction event.

13.5.Model annexures are enclosed. However, to suit specific requirement of the Units changes in the annexures may be done with the approval of respective MM Head of Unit. Such changes shall specifically be communicated to the service provider before the RA event.

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Business Rules for Reverse Auction

Annexure – I

This has reference to tender no **{tender number....date...}**. BHEL shall finalise the Rates for the supply of **{item name}** through Reverse Auction mode. BHEL has made arrangement with M/s. **{Service provider}**, who shall be BHEL's authorized service provider for the same. Bidders should go through the instructions given below and submit acceptance of the same.

The technical & commercial terms are as per (a) BHEL Tender Enq. No. {...} dated {...}, (b) Bidders' technical & commercial bid (in case of two part bid) and (c) subsequent correspondences between BHEL and the bidders, if any.

1. Procedure of Reverse Auctioning

- i. Price bids of all techno-commercially qualified bidders shall be opened.
- ii. **Reverse Auction:** The 'bid decrement' will be decided by BHEL.
- iii. The lowest bidder in sealed price bid shall be shown as current L1 automatically by the system and no acceptance of that price is required. System shall have the provision to indicate this bid as current L1.
- iv. Bidders by offering a minimum bid decrement or the multiples thereof can displace a standing lowest bid and become "L1" and this continues as an iterative process. However, no bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.
- v. After the completion of the reverse auction, the Closing Price shall be available for further processing.
- vi. Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

2. Schedule for reverse auction: The Reverse Auction is tentatively scheduled on {date}: ;{start time}: ;{Close Time: }.

3. Auction extension time: If a bidder places a bid in the last {...} minutes of closing of the Reverse Auction and if that bid gets accepted, then the auction's duration shall get extended automatically for another {...} minutes,

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Business Rules for Reverse Auction

Annexure – I

for the entire auction (i.e. for all the items in the auction), from the time that bid comes in. Please note that the auto-extension will take place only if a bid comes in those last {...} minutes and if that bid gets accepted as the lowest bid. If the bid does not get accepted as the lowest bid, the auto-extension will not take place even if that bid might have come in the last {...} minutes. In case, there is no bid in the last {...} minutes of closing of Reverse Auction, the auction shall get closed automatically without any extension. However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the auto-extension period to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc.

The above process will continue till completion of Reverse Auction.

Complaints/ Grievances, if any, regarding denial of service or any related issue should be given in writing thru e-mail/ fax to M/s. {Service provider} with a copy to BHEL within 15 minutes prior to initial closing time of Reverse Auction.

4. **Bid price:** The Bidder has to quote the {...} Price inclusive of Packing & Forwarding charges, all the routine & type tests as per tender scope, taxes, duties, freight and insurance as specified in tender document, including loading (if indicated by BHEL due to deviations in technical/ commercial terms) for the Items specified. Details are as shown in Excel Sheet for calculation of total cost to BHEL (To be specified by Unit as per NIT conditions).
5. **Bidding currency and unit of measurement:** Bidding will be conducted in *Indian Rupees per Unit* of the material as per the specifications {...}

In case of foreign currency bids, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid) shall be considered for conversion in Indian Rupees. If the relevant day happens to be a Bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.

6. **Validity of bids:** Price shall be valid for {... days} from the date of reverse auction. These shall not be subjected to any change whatsoever.

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Business Rules for Reverse Auction

Annexure – I

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7. **Lowest bid of a bidder:** In case the bidder submits more than one bid, the lowest bid at the end of Reverse Auction will be considered as the bidder's final offer to execute the work.
 8. Unique user IDs shall be used by bidders during bidding process. All bids made from the Login ID given to the bidders will be deemed to have been made by the bidders/ bidders' company.
 9. **Post auction procedure:** BHEL will proceed with the Lowest Bid in the Reverse Auction for further processing.
 10. Any commercial/ technical loading shall be separately intimated to respective bidders prior to RA. The excel sheet provided in this regard shall cover all these aspects. Commercial/ technical loading if any, shall be added by the respective bidder in its price during Reverse Auction. Modalities of loading & de-loading shall be separately intimated to the bidders. The responsibility for correctness of total cost to BHEL shall lie with the bidders.
 11. Reverse auction shall be conducted by BHEL (through M/s {Service Provider}), on pre-specified date, while the bidders shall be quoting from their own offices/ place of their choice. Internet connectivity shall have to be ensured by bidders themselves.

During the RA process if a bidder is not able to bid and requests for extension of time by FAX/ email/ phone then time extension of additional 15 minutes will be given by the service provider provided such requests come before 5 minutes of auction closing time. However, only one such request per bidder can be entertained.

In order to ward-off contingent situation of connectivity failure bidders are requested to make all the necessary arrangements/ alternatives whatever required so that they are able to circumvent such situation and still be able to participate in the reverse auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse auction cannot be the cause for not participating in the reverse auction. On account of this, the time for the auction cannot be extended and neither BHEL nor M/s. {Service provider} is responsible for such eventualities.

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Business Rules for Reverse Auction

Annexure – I

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- 12.** Proxy bids: Proxy bidding feature is a pro-bidder feature to safe guard the bidder's interest of any internet failure or to avoid last minute rush. The proxy feature allows bidders to place an automated bid in the system directly in an auction and bid without having to enter a new amount each time a competing bidder submits a new offer. The bid amount that a bidder enters is the minimum that the bidder is willing to offer. Here the software bids on behalf of the bidder. This obviates the need for the bidder participating in the bidding process until the proxy bid amount is decrementally reached by other bidders. When proxy bid amount is reached, the bidder (who has submitted the proxy bid) has an option to start participating in the bidding process.

The proxy amount is the minimum amount that the bidder is willing to offer. During the course of bidding, the bidder cannot delete or change the amount of a proxy bid.

Bids are submitted in decrements (decreasing bid amounts). The application automates proxy bidding by processing proxy bids automatically, according to the decrement that the auction originator originally established when creating the auction, submitting offers to the next bid decrement each time a competing bidder bids, regardless of the fact whether the competing bids are submitted as proxy or standard bids. However, it may please be noted that if a manual bid and proxy bid are submitted at the same instant manual bid will be recognized as the L1 at that instant.

In case of more than one proxy bid, the system shall bid till it crosses the threshold value of 'each lowest proxy bid' and thereafter allow the competition to decide the final L1 price.

Proxy bids are fed into the system directly by the respective bidders. As such this information is privy only to the respective bidder(s).

- 13.** Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, quantity being auctioned, tender value being auctioned etc from M/s {Service provider}.
- 14.** M/s. {Service provider}, shall arrange to demonstrate/ train the bidder or bidder's nominated person(s), without any cost to bidders. M/s. {Service provider}, shall also explain the bidders, all the business rules related to the
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Guidelines for Reverse Auction –2024

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Business Rules for Reverse Auction

Annexure – I

Reverse Auction. Bidders are required to submit their acceptance to the terms/ conditions/ modalities before participating in the Reverse Auction in the process compliance form as enclosed. Without this, the bidder will not be eligible to participate in the event.

15. Successful bidder shall be required to submit the final prices (L1) in prescribed format (Annexure – VI) for price breakup, quoted during the Reverse Auction, duly signed and stamped as token of acceptance without any new condition (other than those already agreed to before start of auction), after the completion of auction to M/s. {Service provider} besides BHEL within two working days of Auction without fail.
16. Any variation between the final bid value and that in the confirmatory signed price breakup document will be considered as tampering the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
17. Bidders' bid will be taken as an offer to execute the work/ supplies the item as per enquiry no. {...} dt. {...}. Bids once made by the bidder, cannot be cancelled/ withdrawn and bidder shall be bound to execute the work as mentioned above at bidder's final bid price. Should bidder back out and not execute the contract as per the rates quoted, BHEL shall take action as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
18. Bidders shall be able to view the following on their screen along with the necessary fields during Reverse Auction:
 - a. Leading (Running Lowest) Bid in the Auction (only total price of package)
 - b. Bid Placed by the bidder
 - c. Start Price
 - d. Decrement value
 - e. Rank of their own bid during bidding as well as at the close of auction.
19. BHEL's decision on award of contract shall be final and binding on all the Bidders.
20. BHEL reserves the right to extend, reschedule or cancel the Reverse Auction process at any time, before ordering, without assigning any reason, with

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Annexure – I

intimation to bidders.

21. BHEL shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause. In such cases, the decision of BHEL shall be binding on the bidders.
22. Other terms and conditions shall be as per bidder's techno-commercial offers and other correspondences, if any, till date.
23. If there is any clash between this business document and the FAQ available, if any, in the website of M/s. {Service provider}, the terms & conditions given in this business document will supersede the information contained in the FAQs. Any changes made by BHEL/ service provider (due to unforeseen contingencies) after the first posting shall be deemed to have been accepted if the bidder continues to access the portal after that time.
24. Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines for suspension of business dealings (as available on www.bhel.com), shall be initiated by BHEL.

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Mandate to Service Provider

Annexure – II

Ref :

Date :

To,

M/s. {Service provider}

Sub: Providing of Services for Reverse Auction.

Ref: No {...} date {...}

Dear Sir,

Please conduct Reverse Auction as per the following details:

- **Scope:** Auction event management with training of BHEL and its bidders.
- Seek process compliance form from all the bidders provided by BHEL before start of RA event. In case of postponement of event to some other date, ensure acknowledgement from each bidder.
- Price: Rs. {.....}/- . No other duties, Taxes, levies etc. except service tax @ {.....}% shall be payable for conducting reverse auction. This price is firm.
- Payment Terms: 100% payment after successful completion of Auction.
- Completion of Auction Process: The auction process shall be deemed to have been successfully completed on receipt and acceptance of final report including hard copy/ email of the final bid with price break up, duly signed by the successful bidder who has participated in the reverse auction. The bill shall be submitted along with the completion report to the undersigned.
- Business Rules of the Reverse Auction are as per Annexure – I.
- The list of bidders with their contact details is given in Annexure – IV. and the details of the item (s) to be Reverse Auctioned are as per Annexure – V.
- Please acknowledge receipt of this letter order and also confirm that final report (duly signed and stamped by M/s. {Service provider}) including hard copy/ email of the final bid with breakup of prices duly signed by the successful bidder (duly endorsed by M/s. {Service provider}) shall be submitted within **four** working days of conclusion of auction.

Yours sincerely,

(for and on behalf of BHEL)

Guidelines for Reverse Auction –2024

Doc. No. AA:SSP:RA:00
Dated: 05.12.2024

Mandate to Service Provider

Annexure – II

Note:

If the event has been conducted as per mandate, you shall be paid irrespective of RA outcome.

Buyer Name	<ul style="list-style-type: none">- Name of BHEL Unit- Full postal address- Fax:- Phone:- Email:- Contact person name:- Phone:-
Auction to be conducted by	<ul style="list-style-type: none">- Name of Service provider- Full postal address- Fax:- Phone:- Email:- Contact person name:- Phone:-
Date of Auction	<ul style="list-style-type: none">- Date of Auction- Reverse auction time:- Auction website:
Documents Attached: (To be sent to the bidders)	<ul style="list-style-type: none">1) Business rules for Reverse Auction (<u>Annexure-I</u>)2) Process Compliance Form (<u>Annexure-III</u>)3) Details of item (s) to be Reverse Auctioned (<u>Annexure-V</u>)4) Post RA Price confirmation by bidder (<u>Annexure-VI</u>)

Guidelines for Reverse Auction –2024

Doc. No. AA:SSP:RA:00

Dated: 05.12.2024

Process Compliance Form

Annexure – III

(The bidders are required to print this on their company's letterhead and sign, stamp before RA)

To

- M/s. {Service provider}
- Postal address}

Sub: Agreement to the Process related Terms and Conditions

Dear Sir,

This has reference to the Terms & Conditions for the Reverse Auction mentioned in the RFQ document for {Items} against BHEL enquiry/ RFQ no.{.....} dt. {.....}
This letter is to confirm that:

- 1) The undersigned is authorized official/ representative of the company to participate in RA and to sign the related documents.
- 2) We have studied the Reverse Auction guidelines (as available on www.bhel.com), and the Business rules governing the Reverse Auction as mentioned in your letter and confirm our agreement to them.
- 3) We also confirm that we have taken the training on the auction tool and have understood the functionality of the same thoroughly.
- 4) We also confirm that, in case we become L1 bidder, we will FAX/ email the price confirmation & break up of our quoted price as per Annexure - VI within **two** working days (of BHEL) after completion of RA event, besides sending the same by registered post/ courier both to M/s. BHEL and M/s. {Service provider.}

We, hereby confirm that we will honor the Bids placed by us during the auction process.

With regards

Signature with company seal

Name –

Company / Organization

Designation within Company / Organization

Address of Company / Organization

- **Sign this document and FAX/ email it to M/s {Service provider} at {.....} prior to start of the Event.**

Guidelines for Reverse Auction –2024

Doc. No. AA:SSP:RA:00
Dated: 05.12.2024

List of bidders and their address/ contact person details

Annexure – IV

Sl. No.	Address	Contact Person
1	<ul style="list-style-type: none">- Name of bidder- Full postal address- Fax:- Phone:- Email:	<ul style="list-style-type: none">- Contact person name:- Phone:- Email:
2		
3		
..		
..		

Guidelines for Reverse Auction –2024

Doc. No. AA:SSP:RA:00
Dated: 05.12.2024

Details of item (s) for Reverse Auction

Annexure – V

1. *{Details of items including quantity, specification, Enquiry no. & date*

- 1.
- 2.
- ..
- ..
- ..
- ..
- }

Guidelines for Reverse Auction –2024

Doc. No. AA:SSP:RA:00

Dated: 05.12.2024

RA price confirmation and breakup

(To be submitted by L1 bidder after completion of RA)

Annexure – VI

To

- M/s. Service provider
- Postal address

CC: M/s BHEL

{Unit-
Address-}

Sub: **Final price quoted during Reverse Auction and price breakup**

Dear Sir,

We confirm that we have quoted.

**Rs.{____in value & in words____} for item(s) covered under tender enquiry
No. {...} dt.{...}**

Total price of the items covered under above cited enquiries is inclusive of {Packing & forwarding, GST, E.D., C.S.T., freight and insurance charges up to {.....} District,{.....} State and Type Test Charges etc., (exclusive of service tax), other as per NIT}

as our final landed prices as quoted during the Reverse Auction conducted today {date} which will be valid for a period of {____ in nos. & in words ____} days.

The price break-up is as given below.

Total

=====

- Rs. **in value & in words**

=====

Yours sincerely,

For _____

Name:

Company:

Date:

Seal:



GUIDELINES FOR REVERSE AUCTION - 2024



PRICE BID FORMAT(PART II)

Enquiry Number : HPEP/CMM/Paints/RC /2025-26

Name of the Bidder:

GROUP- A (20 Items)--- Must quote for all items in a particular group mandatorily								
SL NO	MATERIAL CODE	MATERIAL DESCRIPTION	MU	TENTATIVE Qty of Group A Items for RC (A)	SPEC.NO	SHADE	Unit Price per Litre (Excluding tax) in Rs. (B)	Applicable GST (in Percentage)
1	AA5610026121	S.E.APPLE GREEN	LTR	2140	AA56126, Rev:06	APPLE GREEN		
2	AA5610026024	S.E.AZURE BLUE	LTR	3220	AA56126, Rev:06	AZURE BLUE		
3	HY5610067014	S.E HAMMERTONE PAINT (DARK BLUE)	LTR	2220	AA56126, Rev:06	DARK BLUE		
4	AA5610026512	S.E.DEEP ORANGE	LTR	120	AA56126, Rev:06	DEEP ORANGE		
5	AA5610026130	S.E.SEA GREEN	LTR	420	AA56126, Rev:06	SEA GREEN		
6	AA5610026237	S.E.SMOKE GREY	LTR	560	AA56126, Rev:06	SMOKE GREY		
7	AA5610026300	HIGH QLTY SE PAINT(GOLDEN YELLOW)	LTR	1400	AA56126,Rev:06	GOLDEN YELLOW		
8	AA5610026032	HGH QLTY SE PAINT (SKY Blue)(RAL5015)	LTR	2900	AA56126 Rev:06	RAL 5015 (Sky Blue)		
9	HY5610071046	SE BUS GREEN	LTR	60	AA56126, Rev:06	BUS GREEN		
10	HY5610071062	SE MACHINE GREEN	LTR	540	AA56126, Rev:06	MACHINE GREEN		
11	HYN561000042	S.E.LIGHT BLUE	LTR	160	AA56126, Rev:06	LIGHT BLUE		
12	AA5610026555	H.Q.F.G OD FNSH SYTC ENML PNT(BLACK)	LTR	820	AA56126, Rev:06	BLACK		
13	AA5610026504	H.Q.F.G OD FNSH SYTC ENML PNT(P.O. RED)	LTR	1000	AA56126, Rev:06	POST OFFICE RED		
14	AA5610027560	H.Q.F.G OD FNSH SYTC ENML PNT(WHITE)	LTR	1680	AA56127,Rev- 02	WHITE		
15	AA5610026202	SYNTHETIC ENAMEL PAINT (LIGHT GREY)	LTR	980	AA56126, Rev:06	LIGHT GREY		
16	AA5610026210	S.E DARK ADMIRALTRY GREY	LTR	560	AA56126, Rev:06	DARK ADMIRALTRY GREY		
17	AA5610026326	CANERY YELLOW ENEMAL PAINT	LTR	240	AA56126, Rev:06	CANARY YELLOW		
18	AA5610032563	OIL RESISTANT AIR DRYING (White paint)	LTR	760	AA56132,Rev. No.05	WHITE		
19	HY5670062302	THINNER FOR ENAMIL PAINTS	LTR	4140	AA56701,REV:05	NO SHADE		
20	HY5610026997	SYNTHETIC ENAMEL PAINT- GREY- RAL 9002	LTR	1200	AA56126, Rev:06	GREY, RAL 9002		
Group A Total Qty			LTR	25120				

GROUP-B (61 Items)-Must quote for all items in a particular group mandatorily								
SL NO	MATERIAL CODE	MATERIAL DESCRIPTION	MU	TENTATIVE Qty of Group B Items for RC (A)	SPEC.NO	SHADE	Unit Price per Litre (Excluding tax) in Rs. (B)	Applicable GST (in Percentage)
1	HY5610031680	EPOXIDE FINISH PAINT (BLUE)	LTR	2800	AA56131,REV.No-07	BLUE,RAL 5012		
2	HY5610031621	EPOXIDE FINISH PAINT (FRENCH BLUE)	LTR	20	AA56131,REV.No-07	FRENCH BLUE		
3	HY9050001041	EPOXY HIGH BUILD COATING	LTR	2800	HY9050001,Rev.08	GREY		
4	HY5610031974	EPOXY PRIMER YELLOW 8532	LTR	2000	AA56109	YELLOW		
5	HY5610034620	HR Aluminium Paint	LTR	1060	AA56149,Rev No.01	ALUMINIUM		
6	AA5670008006	EPOXY THINNER	LTR	7400	AA56708,REV.NO-04	NO SHADE		
7	HY9050001106	ACRYLIC POLYESTER POLYUR.PAINT-LIT.GREY	LTR	1200	HY9050001,Rev.08	LIGHT GREY		
8	HY9050001114	ACRYLIC POLYESTER POLYUR.PAINT-W.GREY	LTR	1000	HY9050001,Rev.08	WHITE GREY		
9	HY9050001084	ACRYLIC POLYURETHANE PAINT-W.ALUMINIUM WHITE PAINT	LTR	1100	HY9050001,Rev.08	WHITE ALUMINIUM		
10	HY9050001092	ACRYLIC POLYURETHANE PAINT-D.ADRLY.GREY	LTR	1100	HY9050001,Rev.08	DARK ADMIRALTY GREY		
11	HY9050001190	ACRYLIC POLYURETHANE PAINT-BASALT GREY	LTR	1100	HY9050001,Rev.08	BASALT GREY		
12	HY5610011019	ALKYD ROXD ZN PHSPT ANTI CORROSIVE SYPP	LTR	1600	AA56111,Rev.03	RED OXIDE		
13	HY5610006228	CARBOLINE 134 ALPHTC URTHN PAINT:RAL9002	LTR	2140	AA56106,Rev:00	RAL 9002		
14	AA5610031400	CR EPOXIDE FNSh LT. BROWN	LTR	120	AA 56131,Rev- 07	LIGHT BROWN		
15	HY9050001033	EPOXY ZINC RICH PRIMER	LTR	920	HY9050001,Rev.08	GREY/RED OXIDE		
16	HY5610005922	HEAT RESISTANT ALUMINIUM SILICON FINISH PAINT	LTR	620	AA56134,Rev No.04	RAL 9006		
17	HY5610031710	HIGH BUILD MIO INTERMEDIATE COAT PAINT	LTR	300	AA56112 Rev 02	RAL7032, pebble grey		
18	HY5610005914	IN ORGANIC ZINC SILICATE	LTR	2460	AA56113,Rev. No. 02	GREY		
19	HY9050001017	INORGANIC ZINC SILICATE COATING	LTR	3100	HY9050001,Rev.08	GREY		
20	BA9707002000	POLYAMIDE CURED HIGH BUILD EPOXY	LTR	2400	BA07002,REV.NO- 01	RAL 9002		
21	HY5610006074	POLYAMIDE CURED HIGH BUILD MIO EPOXY	LTR	4400	AA56112,Rev No. 02	DARK BROWN		
22	AA5610001013	RED OXIDE ZINC CHROME PRIMER	LTR	200	AA56101 Rev:09	RED OXIDE		
23	HY5670062159	THINNER FOR AL PAINT	LTR	700	AA56708,REV.NO-04	NO SHADE		
24	HY9050001157	THINNER FOR HB MIO EPOXY INTRMDT PAINT	LTR	1200	HY9050001,Rev.08	NO SHADE		
25	HY9050001122	THINNER FOR INORGANIC ZINC SILICATE	LTR	1700	HY9050001,Rev.08	NO SHADE		
26	HY9050001025	EPOXY ZINC PHOSPHATE PRIMER	LTR	1800	HY9050001,Rev.08	GREY/RED OXIDE		
27	HY9050001130	THINNER FOR EPOXY ZINC PHOSPHATE	LTR	900	HY9050001,Rev.08	NO SHADE		
28	HY9050001149	THINNER FOR EPOXY ZINC RICH PRIMER	LTR	500	HY9050001,Rev.08	NO SHADE		
29	HY9050001220	EPOXY HIGH BUILD MIO	LTR	1300	HY9050001,Rev.08	GREY		
30	HY9050001238	THINNER FOR EPOXY HIGH BUILD MIO	LTR	500	HY9050001,Rev.08	NO SHADE		
31	HY9050001050	HEAT RESISTANT SILICON ALUMINIUM PAINT	LTR	3240	HY9050001,Rev.08	RAL 9006		

32	HY9050001165	THINNER FOR HEAT RESISTANT SILICON ALUMINIUM PAINT	LTR	1380	HY9050001,Rev.08	NO SHADE	
33	HY9050001173	THINNER FOR ACRYLIC POLYURETHENE PAINT	LTR	3160	HY9050001,Rev.08	NO SHADE	
34	HY9050001181	THINNER FOR ACRYLIC POLYESTER POLYURETHANE PAINT	LTR	700	HY9050001,Rev.08	NO SHADE	
35	HY9050001289	ACRYLIC POLYURETHANE PAINT-JET BLACK	LTR	400	HY9050001,Rev.08	JET BLACK,RAL 9005	
36	HY9050001335	HEAT.RES.SIL ALUM PAINT-600DEG-RAL7012	LTR	400	HY9050001,Rev.08	RAL 7012	
37	HY9050001360	ACRYLIC POLYURETHANE PAINT-SMOKE GREY	LTR	200	HY9050001,Rev.08	IS 692	
38	HY9050001386	ACRYLIC POLYURETHANE-PEBBLE GREY RAL7032	LTR	760	HY9050001,Rev.08	PEBBLE GREY,RAL 7032	
39	HY5610031702	CHEMICAL RESISTANCE POLYURETHANE PAINTS	LTR	300	AA56142 Rev 06	RAL7032, pebble grey	
40	HY9050001297	EPOXY PHENOLIC PRIMER	LTR	400	HY9050001,Rev.08	ALUMINIUM	
41	HY9050001068	ACRYLIC POLYURETHANE PAINT PHIROZI BLUE	LTR	40	HY9050001,Rev.08	PHIROZI BLUE	
42	HY9050001076	ACRYLIC POLYURETHANE PAINT BRIL.GREEN	LTR	40	HY9050001,Rev.08	BRILLIANT GREEN	
43	HY9050001246	ACRYLIC PU FINISH PAINT BLUE GREY	LTR	40	HY9050001,Rev.08	BLUE GREY	
44	HY9050001270	ACRYLIC PU FINISH PAINT WHITE GREY	LTR	800	HY9050001,Rev.08	WHITE GREY	
45	HY9050001203	INERT POLYMER MATRIX ALUMINIUM	LTR	40	HY9050001,Rev.08	ALUMINIUM	
46	HY9050001211	THINNER FOR INERT POLYMERIC MATRIX COATING	LTR	20	HY9050001,Rev.08	NO SHADE	
47	HY5670062140	THINNER FOR INORGANIC ZINC SILICATE PRIMER	LTR	700	AA56708,REV.No-04.	NO SHADE	
48	HY5670062086	THINNER/INORGANIC ZINC PRIMER	LTR	100	AA56708,REV.No-04.	NO SHADE	
49	HY5610005760	CARBOLINE 4674	LTR	40	AA56708,REV.No-04.	ALUMINIUM	
50	HY5610005817	THINNER 10	LTR	40	AA56708,REV.No-04.	NO SHADE	
51	HY5670062256	THINNER 02	LTR	200	AA56708,REV.No-04.	NO SHADE	
52	AA5610035600	HB COAL TAR EPOXY BLACK	LTR	1280	AA56135,REV.NO-05	BLACK	
53	AA5610031206	EPOXY LIGHT GREY	LTR	3520	AA56131 Rev - 07	LIGHT GREY	
54	AA5610005019	EPOXY 8532 PRIMER RED	LTR	1060	AA56105,REV.No-07	RED OXIDE	
55	AA5610031109	CHMICAL RESISTANT EPOXDE FNSH PAINT (Sea Green)	LTR	280	AA56131,REV.NO-07	SEA GREEN	
56	HY9050001319	THINNER FOR EPOXY PHENOLIC PAINT	LTR	100	HY9050001,Rev.08	NO SHADE	
57	HY9050001351	EPOXY HIGH BUILD COATING AROMATIC AMINE	LTR	100	HY9050001,Rev.08	HIGH BUILD AROMATIC	
58	AA5610007003	CHLORINATED RUBBER BASED PAINT	LTR	200	HY9050001,Rev.08		
59	AA5610012015	EPOXY HIGH BUILD TIO2 COATING	LTR	200	HY9050001,Rev.08		
60	HY5610005787	EPOXY PAINTS Of Other shades	LTR	680	HY9050001,Rev.08	FINAL SHADES AS PER REQUIREMENT	
61	HY5610005760	PU FINISH PAINT of Other Shades	LTR	660	HY9050001,Rev.08	FINAL SHADES AS PER REQUIREMENT	
		Group B Total Qty	LTR	69520			

Note:

a)Evaluation shall be done on Group wise L1 Basis (i.e Quoted Grand Total of a Particular Group)

b)Bidder can opt for single group (i.e Group A or Group B) or both the groups (Group A& B).

c)Bidders must quote for all items mandatorily in a particular group . If any bidder not quoted for any of the item in a particular group,then their offer will be summarily rejected for that particular group

d) BHEL Shall arrive the Group wise Total Cost based on the Unit price quoted by the bidder for Evaluation.

e) Unit Price must quote upto two decimal points only

f) Bidders Shall enter the Unit price per litre only and not the total price i.e Bidders to feed rate per litre in the coloured cells.