

Annexure 1, Indent No.: D81120020 , Dated: 15/07/2022

1. General points related to materials

- a. All parameters as indicated are at Room Temperature.
- b. Method of application: Brush, Air spray and Airless spray.
- c. The finish should be full gloss.
- d. Paint consistency should be smooth and homogeneous.
- e. For all paints –

Test certificate and guarantee certificate to be furnished along with supply. The material shall be procured in line with paint procurement check list and quality procedure released by BHEL-BAP/Quality. Pre-despatch inspection to be offered to BHEL/BHEL authorised inspection agency.

2. Each container must have following information available on it.

Material name
BHEL material code
Colour
Volume of solids in %
Batch no.
Expiration date
BHEL order number
Test Results (Acceptable/Unacceptable)
BHEL-BAP/ Ranipet use only

3. Safety points

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

4. All suppliers shall qualify the PQR criteria.

Receipt No : 966729/2022/BAP-9750_SU

File No. BAP/160/2022-BAP-WTC&IM (Computer No. 256180)

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Receipt No : 946371/2022/BAP-WTC&IM

Annexure 1, Indent No.: D81120020 , Dated: 15/07/2022

Indent Sl.No :01	BHEL SPECIFICATION	BIDDERS CONFIRMATION ACCEPTED/NOT ACCEPTED
Material Code	IM1200200200 ✓	
Material Description	Synthetic Enamel Paint as per IS:2932- Latest .	
COLOUR	Shade no 356 of IS 5 : Golden Yellow ✓	
MASS IN KG / 10 LITER	9.0 Min	
FINISH	Smooth & Glossy	
VOLUME SOILIDS %	35 Min	
DRY TIME : HARD DRY	12 HRS Max.	
APPLICABLE Quality Plan	MQP NO : SYN: ENA Rev No :01 Dt 13/07/2020	
Packing Size	4 Litres ✓	
MINIMUM SHELF LIFE IN MONTHS	12 MONTHS FROM BHEL RECEIPT	

Indent Sl.No : 02	BHEL SPECIFICATION	BIDDERS CONFIRMATION ACCEPTED/NOT ACCEPTED
Material Code	IM1200200300 ✓	
Material Description	Synthetic Enamel Paint as per IS:2932- Latest .	
COLOUR	White ✓	
MASS IN KG / 10 LITER	9.0 Min	
FINISH	Smooth & Glossy	
VOLUME SOILIDS %	35 Min	
DRY TIME : HARD DRY	12 HRS Max.	
APPLICABLE Quality Plan	MQP NO : SYN: ENA Rev No :01 Dt 13/07/2020	
Packing Size	4 Litres ✓	
MINIMUM SHELF LIFE IN MONTHS	12 MONTHS FROM BHEL RECEIPT	

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Indent Sl.No : 03	BHEL SPECIFICATION	BIDDERS CONFIRMATION ACCEPTED/NOT ACCEPTED
Material Code	IM1200200400 ✓	
Material Description	Synthetic Enamel Paint as per IS: 2932- Latest .	
COLOUR	Black ✓	
MASS IN KG / 10 LITER	9.0 Min	
FINISH	Smooth & Glossy	
VOLUME SOILIDS %	35 Min	
DRY TIME : HARD DRY	12 HRS Max.	
APPLICABLE Quality Plan	MQP NO : SYN: ENA Rev No :01 Dt 13/07/2020	
Packing Size	4 Litres ✓	
MINIMUM SHELF LIFE IN MONTHS	12 MONTHS FROM BHEL RECEIPT	

Indent Sl.No : 04	BHEL SPECIFICATION	BIDDERS CONFIRMATION ACCEPTED/NOT ACCEPTED
Material Code	IM8117120001 ✓	
Material Description	Synthetic Enamel Paint as per IS:2932- Latest .	
COLOUR	Shade no 176 of IS 5 :Phirozi Blue ✓	
MASS IN KG / 10 LITER	9.0 Min	
FINISH	Smooth & Glossy	
VOLUME SOILIDS %	35 Min	
DRY TIME : HARD DRY	12 HRS Max.	
APPLICABLE Quality Plan	MQP NO : SYN: ENA Rev No :01 Dt 13/07/2020	
Packing Size	4 Litres ✓	
MINIMUM SHELF LIFE IN MONTHS	12 MONTHS FROM BHEL RECEIPT	

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Indent Sl.No : 05	BHEL SPECIFICATION	BIDDERS CONFIRMATION ACCEPTED/NOT ACCEPTED
Material Code	IM1200200700 ✓	
Material Description	Synthetic Enamel Paint as per IS: 2932- Latest .	
COLOUR	Shade no 591 of IS 5 : Deep orange ✓	
MASS IN KG / 10 LITER	9.0 Min	
FINISH	Smooth & Glossy	
VOLUME SOILIDS %	35 Min	
DRY TIME : HARD DRY	12 HRS Max.	
APPLICABLE Quality Plan	MQP NO : SYN: ENA Rev No :01 Dt 13/07/2020	
Packing Size	4 Litres ✓	
MINIMUM SHELF LIFE IN MONTHS	12 MONTHS FROM BHEL RECEIPT	

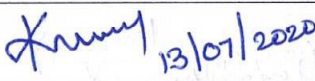
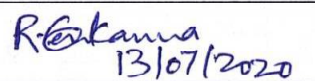
Indent Sl.No : 06	BHEL SPECIFICATION	BIDDERS CONFIRMATION ACCEPTED/NOT ACCEPTED
Material Code	IM1200201800 ✓	
Material Description	Synthetic Enamel Paint as per IS:12932- Latest .	
COLOUR	Shade no 106 of IS 5 : Navy Blue ✓	
MASS IN KG / 10 LITER	9.0 Min	
FINISH	Smooth & Glossy	
VOLUME SOILIDS %	35 Min	
DRY TIME : HARD DRY	12 HRS Max.	
APPLICABLE Quality Plan	MQP NO : SYN: ENA Rev No :01 Dt 13/07/2020	
Packing Size	4 Litres ✓	
MINIMUM SHELF LIFE IN MONTHS	12 MONTHS FROM BHEL RECEIPT	



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	MANUFACTURER'S NAME & ADDRESS:		MANUFACTURING QUALITY PLAN					MQP NO: SYN:ENA REV NO: 01			
	BHEL (BAP) - Ranipet Approved Suppliers		PRODUCT: Synthetic Enamel to IS: 2932 -1 : 2013 (Reaffirmed 2018)					DATE: 13/07/2020		PAGE: 1 OF 2	
			SUB-SYSTEM : ---								

SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
									M	C	N	
1	2	3	4	5	6	7	8	9	D**	**	10	11

1.0 RAW MATERIALS:													
1.1	Pigments, solvents, resins & additives	Composition	M	Review	IS 2932-1	IS 2932-1	IS 2932-1& BHEL PO	TC	-	V	-	-	
2.0 INPROCESS CONTROLS:													
2.1	Measurement of Ingredients	Weight / Volume	A	Measure	IS 2932-1	Supplier's Procedure and IS 2932-1		Log	-	P	-	-	
2.2	Dispersion	Granulating Pigments	M	Visual	IS 2932-1	Supplier's Procedure and IS 2932-1		Log	-	P	-	-	
2.3	Let-down & Mixing	Proper mixing of resins, solvents and additives	M	Visual	IS 2932-1	Supplier's Procedure and IS 2932-1		Log	-	P	-	-	
3.0 FINAL INSPECTION & TESTING (Refer Note 1 & 2):													
3.1	Finished Paint	Consistency	M	Visual	IS 2932-1	IS 2932-1	IS 2932-1	TC	√	P	V	-	
3.2		Viscosity by Ford Cup No:4 at 27+2°C	M	Measure	IS 2932-1	IS 2932-1 / IS 101	IS 2932-1	TC	√	P	V	-	
3.3		Mass (kg/10 litre), min	M	Measure	IS 2932-1		IS 2932-1	TC	√	P	W	-	
3.4		Drying Time (h), max. a) Surface Dry b) Hard Dry c) Tack Free	A	Measure	IS 2932-1		IS 2932-1	TC	√	P	W*	-	*W for Surface Dry. Others, V.
3.4		Finish & Gloss	A	Visual	IS 2932-1		IS 2932-1& BHEL PO	TC	√	P	W	-	
3.5		Fineness of grind(μ), max	M	Measure	IS 2932-1		IS 2932-1	TC	√	P	V	-	
3.6		Colour	A	Visual	IS 2932-1		IS 2932-1 & BHEL PO	TC	√	P	W	-	
3.7		Flexibility & Adhesion # a) Scratch Hardness b) Bend Test	A	Measure	IS 2932-1		IS 2932-1	TC	√	P	W	-	# After 48 h of air drying
3.8		Flash Point	A	Measure	IS 2932-1		IS 2932-1	TC	√	P	W	-	
3.9		Composition #: a) Volume solids percent, min, b) Non-volatile content, percent by mass, min	A	Measure	IS 2932-1		IS 2932-1 & BHEL PO	TC	√	P	W	-	#To be tested at NABL accredited lab

 13/07/2020	 13/07/2020	LEGEND: * RECORDS IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. ** M: MANUFACTURER, C: BHEL / BHEL AIA, N: CUSTOMER; P: PERFORM, W: WITNESS, V: VERIFICATION; CLASS: A - CRITICAL; B - MAJOR; C - MINOR; MTC- MILL /MANUFACTURER'S TEST CERTIFICATE; IR- INSPECTION REPORT.
PREPARED BY	REVIEWED & APPROVED BY	
K.S. GOPAKUMAR, DE/QA	VENKANNA RUPANI, DM/QA	
SIGNATURE & SEAL		

	MANUFACTURER'S NAME & ADDRESS: BHEL (BAP) - Ranipet Approved Suppliers		MANUFACTURING QUALITY PLAN				MQP NO: SYN:ENA REV NO: 01					
			PRODUCT: Synthetic Enamel to IS: 2932 -1 : 2013 (Reaffirmed 2018)				DATE: 13/07/2020		PAGE: 2 OF 2			
	SUB-SYSTEM : ---											
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS
1	2	3	4	5	6	7	8	9	D**	**	10	11

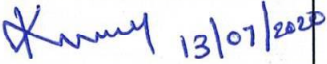

3.10	Finished Paint	Accelerated storage stability test#	M	Measure	IS 2932-1	IS 2932-1 / IS 101	IS 2932-1	TC	√	P	V	-	#To be tested at NABL accredited lab
3.11		Keeping properties - Not less than one year from date of manufacturing	A	Measure	IS 2932-1		IS 2932-1	TC	√	P	V	-	
3.12		Wet opacity, m ² /10 litre, min	C	Visual	IS 2932-1		IS 2932-1	TC	√	P	V	-	
3.13		DFT (μ) per coat	A	Measure	IS 2932-1		IS 2932-1 & BHEL PO	TC	√	P	W	-	
3.14		Lead Content	M	Measure	IS 2932-1		IS 2932-1	TC	√	P	V	-	
4.0		MARKING, PACKING & CERTIFICATION:											
4.1	Identification & Packing	Stenciling & Packing	M	Visual & Review	IS 2932-1	IS 2932-1	IS 2932-1 & BHEL PO	TC	√	P	V	-	
4.2	Certification	Compliance	A	Review	IS 2932-1	IS 2932-1	IS 2932-1 & BHEL PO	TC	√	P	V	-	

Record of Revisions

Rev No	Date	Clauses revised	Description of Revision
00	17/08/2015	--	Original Issue.
01	13/07/2020	All	Completely reorganized and revised.

Notes:

- Latest editions / versions of the referred standards shall be used.
- Sample selection for testing to be done in the presence of BHEL / BHEL AIA.

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PREPARED BY	REVIEWED & APPROVED BY	
K.S. GOPAKUMAR, DE/QA	VENKANNA RUPANI, DM/QA	
SIGNATURE & SEAL		

Stencilling and Marking

1. BHEL Purchase orders No, PO date, Material code, Material description, Manufacturing date, expiry date, & “BHEL/RANIPET Use only” shall be stenciled/stickered on each Tin/Can/Package individually.

BHEL Material code & Description to be mentioned in invoices and inspection calls. Please submit the below documents for

1. dispatch clearance and Dispatch the material only after the dispatch clearance from BHEL.
2. Final Inspection report (CQIR)
3. Test certificate
4. Photos of Tin/Can with sticker details
5. MSDS

Inspection clause:

1. Inspection before dispatch will be applicable for this item as per the quality plan.
Procedure: After completion of production, the bidder has to raise the inspection call through CQIR <https://cqir.bhel.in/Cqir> at least 3 days in advance.
2. The first stage inspection will be done by the inspector and with the witness of the inspector, a sample will be collected for further testing.
3. Once again, an inspection call has to be raised through <https://cqir.bhel.in/Cqir> for the inspector to witness/verify the final tests.
4. All the charges applicable for the above procedure/testing should be borne by the bidder. Service charges for the inspector only will be borne by BHEL.

MATERIAL SAFETY DATA SHEET – 16 Sections

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier		[WHMIS Classification]	
Product Use			
Manufacturer's Name		Supplier's Name	
Street Address		Street Address	
City	Province	City	Province
Postal Code	Emergency Telephone	Postal Code	Emergency Telephone
Date MSDS Prepared	MSDS Prepared By	Phone Number	

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (<i>specific</i>)	%	CAS Number	LD ₅₀ of Ingredient (<i>specify species and route</i>)	LC ₅₀ of Ingredient (<i>specify species</i>)

SECTION 3 – HAZARDS IDENTIFICATION

Route of Entry <input type="checkbox"/> Skin Contact <input type="checkbox"/> Skin Absorption <input type="checkbox"/> Eye Contact <input type="checkbox"/> Inhalation <input type="checkbox"/> Ingestion
[Emergency Overview]
[WHMIS Symbols]
[Potential Health Effects]

SECTION 4 – FIRST AID MEASURES

Skin Contact
Eye Contact
Inhalation
Ingestion

SAMPLE FORMAT PROVIDED BY THE WORKERS' COMPENSATION BOARD OF BRITISH COLUMBIA

SECTION 5 – FIRE FIGHTING MEASURES

Flammable <input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, under which conditions?	
Means of Extinction		
Flashpoint (°C) and Method	Upper Flammable Limit (% by volume)	Lower Flammable Limit (% by volume)
Autoignition Temperature (°C)	Explosion Data – Sensitivity to Impact	Explosion Data – Sensitivity to Static Discharge
Hazardous Combustion Products		
[NFPA]		

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment
Storage Requirements

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits <input type="checkbox"/> ACGIH TLV <input type="checkbox"/> OSHA PEL <input type="checkbox"/> Other (specify)
Specific Engineering Controls (such as ventilation, enclosed process)
Personal Protective Equipment <input type="checkbox"/> Gloves <input type="checkbox"/> Respirator <input type="checkbox"/> Eye <input type="checkbox"/> Footwear <input type="checkbox"/> Clothing <input type="checkbox"/> Other
If checked, please specify type

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Odour and Appearance	Odour Threshold (ppm)
Specific Gravity	Vapour Density (air = 1)	Vapour Pressure (mmHg)
Evaporation Rate	Boiling Point (°C)	Freezing Point (°C)
pH	Coefficient of Water/Oil Distribution	[Solubility in Water]

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability <input type="checkbox"/> Yes <input type="checkbox"/> No	If no, under which conditions?
Incompatibility with Other Substances <input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, which ones?
Reactivity, and under what conditions?	
Hazardous Decomposition Products	

SECTION 11 – TOXICOLOGICAL INFORMATION

Effects of Acute Exposure	
Effects of Chronic Exposure	
Irritancy of Product	
Skin Sensitization	Respiratory Sensitization
Carcinogenicity – IARC	Carcinogenicity – ACGIH
Reproductive Toxicity	Teratogenicity
Embryotoxicity	Mutagenicity
Name of Synergistic Products/Effects	

SECTION 12 – ECOLOGICAL INFORMATION

[Aquatic Toxicity]

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal

SECTION 14 – TRANSPORT INFORMATION

Special Shipping Information	
	PIN
TDG	[DOT]
[IMO]	[ICAO]

SECTION 15 – REGULATORY INFORMATION

[WHMIS Classification]	[OSHA]
[SERA]	[TSCA]
<i>This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.</i>	

SECTION 16 – OTHER INFORMATION
