

		MANUFACTURER'S NAME & ADDRESS: BHEL (BAP) - Ranipet Approved Suppliers		MANUFACTURING QUALITY PLAN				MQP NO: EPX:MIO REV NO: 00 DATE: 18/07/2020 PAGE: 1 OF 2				
												PRODUCT: Epoxy High Build MIO Pigmented Intermediate Paint (75 µ - 100 µ & BHEL PO) – Two Component Polyamide Cured
				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

1.0 RAW MATERIALS:													
1.1	Pigments, solvents, resins & additives	Composition	M	Review	Supplier's Procedure	BHEL PO	TC	-	V	-	-		
2.0 INPROCESS CONTROLS:													
2.1	Measurement of Ingredients	Weight / Volume	A	Measure	Supplier's Procedure		Log	-	P	-	-		
2.2	Dispersion	Granulating Pigments	M	Visual	Supplier's Procedure		Log	-	P	-	-		
2.3	Let-down & Mixing	Proper mixing of resins, solvents and additives	M	Visual	Supplier's Procedure		Log	-	P	-	-		
3.0 FINAL INSPECTION & TESTING (Refer Notes 1, 2 & 6):													
3.1	Finished Paint	Consistency	M	Visual	IS 101	IS 101 & Supplier's Procedure	Smooth & homogenous	TC	√	P	W	-	
3.2		Mass (kg/10 litre), min	M	Measure			12.5 - 13.5 kgs #	TC	√	P	W	-	#mix paint of base & hardener
3.3		Drying Time (h), max. a) Touch Dry b) Hard Dry	A	Measure			a) Touch Dry: 6 hr. b) Hard Dry: 12 hr.	TC	√	P	W*	-	*W for Touch Dry. Others, V.
3.4		Finish	A	Visual			Smooth, Matt & BHEL PO	TC	√	P	W	-	
3.5		Colour	A	Visual			Dark Brown & BHEL PO	TC	√	P	W	-	
3.6		Flexibility & Adhesion ##	M	Visual			No sign of damage, detachment or cracking	TC	√	P	W	-	## after 7 days curing at RT or 2 hours drying at 70 - 80°C after 24 hours air drying
3.7		Scratch Hardness at a load of 1000 grams ##	M	Visual			No sign of scratch	TC	√	P	W	-	
3.8		Flash Point	A	Measure			>25°C	TC	√	P	W	-	
3.9		Composition \$: a) Volume solids percent, min b) Non-volatile content, percent by mass, min c) Lamellar MIO, min	A	Measure			a) 55% min & BHEL PO # b) 48 - 52% by weight c) 30% min & BHEL PO #	TC	√	P	W	-	# whichever is max / stringent. \$ To be tested at NABL accredited lab.

Kanny 18/07/2020 R. Venkanna 18/07/2020		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: EPX:MIO REV NO: 00 DATE: 18/07/2020 PAGE: 2 OF 2
	PRODUCT: Epoxy High Build MIO Pigmented Intermediate Paint (75 µ -100 µ & BHEL PO) – Two Component Polyamide Cured		
	SUB-SYSTEM : ---		

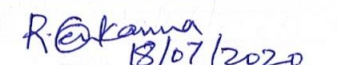
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
										M	C	N	
1	2	3	4	5	6	7	8	9	D**	** 10			11
3.10	Finished Paint	DFT (μ) per coat, min	A	Measure	IS 101	IS 101 & Supplier's Procedure	75-100μ & BHEL PO#	TC	√	P	W	-	# whichever is max
3.11		Lead Content	M	Measure			Free from lead or its compounds	TC	√	P	V	-	
3.12		Pot Life (h), min	M	Measure			4-6 hr	TC	√	P	V	-	
3.13		Keeping properties	A	Visual & Measure			Not less than one year from date of manufacturing	TC	√	P	V	-	
3.14		Resistance to Salt Spray after continuous exposure#	M	Visual & Measure			No corrosion	TC	√	P	V	-	#to salt spray for a period of 7 days
3.15		Mixing Ratio	M	Measure			Supplier's Procedure	TC	√	P	V	-	
3.16		Freedom from defects	M	Visual			Note 3	TC	√	P	V	-	
4.0	MARKING, PACKING & CERTIFICATION:												
4.1	Identification & Packing	Stenciling & Packing	M	Visual	Supplier's Procedure		Note 4 & BHEL PO	TC	√	P	V	-	
4.2	Certification	Compliance	A	Review	100%	Supplier's Procedure	Note 5 & BHEL PO	TC	√	P	V	-	

Record of Revisions

Rev No	Date	Clauses revised	Description of Revision
00	18/07/2020	--	Original Issue.

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.
- 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.,
- Marking & Packing:** BHEL Purchase Order No, Manufacturers/ Supplier's name, Trade name / mark (if any), Batch/Lot No, Name of Components, Mixing ratio, Quantity, Date of manufacture & expiry, corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing, etc., as applicable.
- Certification:** BHEL Purchase Order No, Manufacturers/ Supplier's name, Trade name / mark (if any), Batch/Lot No, Date of manufacture and expiry, Test results (clause 3), T.C. No & Date, Mixing ratio, Material Safety Data Sheet (MSDS).
- Apart from above indicated tests, any other requirement(s) specified in BHEL PO shall be complied with by the supplier.

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