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REV.	DATE	ALTERED		REV.	DATE	ALTERED		REV.	DATE	ALTERED	
		CHECKED				CHECKED				CHECKED	
		APPROVED				APPROVED				APPROVED	

## PAINTING SCHEDULE FOR UDANGUDI CV PUMP

CUSTOMER



TANGEDCO

PROJECT

2 x 660 MW UDANGUDI TPP  
STAGE-I

CONSULTANT



TATA CONSULTING ENGINEERS LTD, BENGALURU

TYPE OF PRODUCT

CONCRETE VOLUTE TYPE CW PUMP




**BHARAT HEAVY ELECTRICALS LTD.  
HYDERABAD**


	NAME	SIGN	DATE	NO. OF VAR.
DRN.	SUDHEER	SUDHEER	06/11/2019	
CHD.	SATISH	SATISH	06/11/2019	
APPD.	K.H.R.K	K.H.R.K	06/11/2019	NA


DEPARTMENT	PUMPS ENGG.	SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO. OF ITEMS
CODE	410	NA	NA	NA	NA	NA

TITLE	DRAWING NO.	REV.
PAINTING SCHEDULE FOR UDANGUDI CV PUMP	FP13615	00
SHEET NO. 01	NO. OF SHEETS	10


TD-106-1 Rev No.2	Form no.		<b>PRODUCT STANDARD</b> <b>PUMPS</b> <b>HYDERABAD</b>		<b>FP13615</b> <table border="1"> <tr> <td>Rev No.</td> <td>00</td> </tr> <tr> <td colspan="2">Page 2 of 10</td> </tr> </table>	Rev No.	00	Page 2 of 10																																					
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<b>COPY RIGHT AND CONFIDENTIAL</b> 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		<b>1. Summary of Paint Color and Painting System</b>																																											
		<table border="1"> <thead> <tr> <th></th> <th>Insulation</th> <th>Finishing Color (Mansell No.)</th> <th>Paint System No.</th> </tr> </thead> <tbody> <tr> <td>           * Non-Submerged surface of casing cover, sole plate (upper surface) and manhole            *Coupling cover            *Thrust bearing pedestal            *Thrust bearing            *Outer surface of discharge pipe            *Outer surface of counter flange            *Piping supports            *Thrust bearing nut            *Thrust bearing collar            (Outer surface above top cover)            *Shaft cover         </td> <td>-</td> <td>French Blue</td> <td>01</td> </tr> <tr> <td>           *Inner surface of discharge pipe and counter flange            *Submerged surface of manhole         </td> <td>-</td> <td>Gray</td> <td>02</td> </tr> <tr> <td>           *Submerged surface of casing cover, sole plate (excluding lower surface), submersible bearing, bearing supporting plate and stuffing box            *Suction liner         </td> <td>-</td> <td>Black</td> <td>03</td> </tr> <tr> <td>*Coupling hub</td> <td>-</td> <td>French Blue</td> <td>04</td> </tr> <tr> <td>*Coupling spacer</td> <td>-</td> <td>Brown</td> <td>04</td> </tr> <tr> <td>*Special tools</td> <td>-</td> <td>Black</td> <td>05</td> </tr> <tr> <td>*Volute of concrete</td> <td>-</td> <td>Black</td> <td>06</td> </tr> <tr> <td>*Lower surface of sole plate</td> <td>-</td> <td>Black</td> <td>06</td> </tr> <tr> <td>*Joint between metal parts and concrete</td> <td>-</td> <td>Black</td> <td>06</td> </tr> </tbody> </table>					Insulation	Finishing Color (Mansell No.)	Paint System No.	* Non-Submerged surface of casing cover, sole plate (upper surface) and manhole *Coupling cover *Thrust bearing pedestal *Thrust bearing *Outer surface of discharge pipe *Outer surface of counter flange *Piping supports *Thrust bearing nut *Thrust bearing collar (Outer surface above top cover) *Shaft cover	-	French Blue	01	*Inner surface of discharge pipe and counter flange *Submerged surface of manhole	-	Gray	02	*Submerged surface of casing cover, sole plate (excluding lower surface), submersible bearing, bearing supporting plate and stuffing box *Suction liner	-	Black	03	*Coupling hub	-	French Blue	04	*Coupling spacer	-	Brown	04	*Special tools	-	Black	05	*Volute of concrete	-	Black	06	*Lower surface of sole plate	-	Black	06	*Joint between metal parts and concrete	-	Black	06
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<b>2. NOTES FOR PAINTING WORKS</b> <b>(A) General requirement</b> The following area should not be carried out painting (1) Screw hole (2)Casing flange surface (3)Fitting area (4)Wearing area (5)Pin-hole (ex.Taper pin hole, etc) (6) Rotating parts (excluding thrust bearing nut, bearing collar (outer surface above top cover; ex. Impeller, Impeller plate, shaft, etc.,)																																													
<b>(B) Notes for Painting works at SITE</b> (1) After the installation, if damaged painting or rusted area caused by transportation or assembling is found, that area should be brushed and chipped, and touched up with removing oil, dust, water, and harmful foreign material.  (2) The outer surface should be touched up after the final assembling.  (3) the inner surface of concrete volute should be painting based on system No.5 at site  (4) The joint area between the concrete and metal casing (ex. Discharge pipe etc.,) the boundary between inner surface (paint system No.3) and lower surface (paint system No.5) of sole plate for pump should be carried out the overcoating based on system No.6																																													
Ref. Doc.																																													




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<b>3. Detailed Painting Schedule</b>											
System No.	Application	Place of Operation	Surface Preparation	General Name/ Ref. product name	No. of coat	Dry Film Thickness (μ m)	Method	Color	Remarks		
01	* Non-Submerged surface of casing cover, sole plate (upper surface) and manhole. * Coupling cover * Thrust bearing pedestal * Thrust bearing * Outer surface of discharge pipe * Outer surface of counter flange * Piping supports * Thrust bearing nut * Thrust bearing collar (Outer surface above top cover) * Shaft cover	Shop	Blast cleaning SSPC SP 10 Power tool cleaning SSPC SP 3	2 Pack Epoxy Zinc Rich Paint Ref: DAI NIPPON TORYO : ZETTAR EP-2HB	1*	75* *	A.L or B	Gray	French Blue: code no. 166 of IS-5		
				2 Pack Epoxy Coating Ref: Dai NIPPON TORYO: V TOP-HB	1*	50* *	A.L or B	Silver or Gray			
				Acryl polyurethane Enamel Ref: DIA NIPPON TORYO: V TOP-HB	1	75	A.L or B	French Blue			
		Site	Power tool cleaning SSPC SP 3	2 Pack Epoxy Zinc Rich Paint Ref: DAI NIPPON TORYO : ZETTAR EP-2HB	(1*)	(75**)	A.L or B	Gray	Spot claning and touch up for damaged areas only. Non-submerged surface of sole plate.  French Blue: code no. 166 of IS-5		
				2 Pack Epoxy Coating Ref: Dai NIPPON TORYO: EPONICS MIO	(1*)	(50**)	A.L or B	Silver or Grey			
				Acryl polyurethane Enamel Ref: DIA NIPPON TORYO: V TOP-HB	(1)	(75)	A.L or B	French Blue			
Total thickness over 200 μ m											
Mark* : If the paint method is brush, the number of coat is 2. Mark* * : It shows total D.F.T. The paint does not include Pd, Cr and Cd.											
Ref. Doc.											

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System No.	Application	Place of Operation	Surface Preparation	General Name/ Ref. product name	No. of coat	Dry Film Thickness (μ m)	Method	Color	Remarks	
02	*Inner surface of discharge pipe and counter flange *Submerged surface of manhole	Shop	Blast cleaning SSPC SP 10	Vinyl Ester Resin Primer Ref: DAI NIPPON TORYO : ML-3000M under coat	1*	Min.70 ~ 150**	A.L or B	Brown		
				Vinyl Ester Resin Glass Flake Coating Ref: DAI NIPPON TORYO : ML-3000M Intermediate coat	1 ~ 2*	Min.320 ~ 450**	A.L or B	Dark Gray		
				Vinyl Ester Resin Glass Flake Coating Ref:DAI NIPPON TORYO : ML-3000M top coat	1*	Min.110 ~ 150**	A.L or B	gray		
+1200 μ m Total thickness over 500 μ m 0 μ m										
Mark * : It shows at airless spray. If th epaint method is brush, the number of coat is 8 (50 ~100μ m /n) Mark * * It shows total D.F.T. The paint does not include Pd, Cr and Cd.										
Method A.L : Airless Spray B : Brush										





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<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <b>COPY RIGHT AND CONFIDENTIAL</b>            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> </div> </div>																						
												System No.	Application	Place of Operation	Surface Preparation	General Name/ Ref. product name	No. of coat	Dry Film Thickness (μ m)	Method	Color	Remarks	
												03	* Submerged surface of casing cover, sole plate (excluding lower surface), submersible bearing, bearing supporting plate and stuffing box * Suction liner	Shop	Blast cleaning SSPC SP 10	Modified Aliphatic Polyamine cured Epoxy Zinc Rich Primer Ref:DAI NIPPON TORYO : ZETTAR EP-2	1	15~20	A.L or B	Gray		
																Modified polyamine cured tar epoxy coating Ref: DAI NIPPON TORYO SDC COAT #402T ECO***	1*	300**	A.L or B	Black		
														Site	Power tool cleaning SSPC SP 3	Modified Aliphatic Polyamine cured Epoxy Zinc Rich Primer Ref:DAI NIPPON TORYO : ZETTAR EP-2	(1)	15~20	A.L or B	Gray		Spot cleaning and touch up for damaged areas only
																Modified polyamine cured tar epoxy coating Ref: DAI NIPPON TORYO SDC COAT #402T ECO	(1*)	300**	A.L or B	Black		
												Total thickness over 315 μ m										
												Mark* : If the paint method is brush, the number of coat is 2. Mark** : It shows total D.F.T. Mark***: SDC COAT #602T ECO shall be used instead of SDC COAT #402T ECO in winter season(ambient temperature 1(°C or less) The paint does not include Pd, Cr and Cd.										
												Method                      A.L : Aireless Spray B : Brush										
Ref. Doc.																						



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												System No.	Application	Place of Operation	Surface Preparation	General Name/ Ref. product name	No. of coat	Dry Film Thickness (μ m)	Method	Color	Remarks					
												04	Coupling hub Coupling spacer Special Tools	Shop	Power tool cleaning SSPC SP 10	Synthetic resin base, phosphate pigment Anticorrosive Paint Ref: DAI NIPPON TORYO GREEN SUBOID QD UNDER COAT	2	35**	B	Brown	Special tools are painted this coating only.					
														Site	Power tool cleaning SSPC SP 3	Synthetic resin base, phosphate pigment Anticorrosive Paint Ref: DAI NIPPON TORYO GREEN SUBOID QD UNDER COAT	(2)	(35**)	B	Brown	This coating should be painted after centering at site and flange area only should be coated with TECTYL 506 paints.  French Blue : code no. 166 of IS-5					
																						Long Oil Alkyd Coating Ref: DAI NIPPON TORYO TAIKO MARINE INTERMEDIATE COAT GH	1*	30**	B	French Blue
																						Long Oil Alkyd Coating Ref: DAI NIPPON TORYO TAIKO MARINE TOP COAT GH	1*	25**	B	French Blue
												Total thickness over 90 μ m														
												<div style="display: flex; justify-content: space-between;"> <div> <p>Mark* : If the paint method is brush, the number of coat is 2.</p> <p>Mark** : It shows total D.F.T.</p> <p>The paint does not include Pd, Cr and Cd.</p> </div> <div> <p>Method    A. L : Airless Spray</p> <p>B : Brush</p> </div> </div>														
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												System No.	Application	Place of Operation	Surface Preparation	General Name/ Ref. product name	No. of coat	Dry Film Thickness (µ m)	Method	Color	Remarks
												05	Volute of Concrete Lower surface of sole plate	Site	Blast (To remove the oil content, soil and etc.)	A high solids, low viscosity, two or three-pack epoxy pimer with excellent adhesion to damp surfaces. Ref: CORROCOAT PLASMET ECP	1*	(100 ~ 175**)	A.L or B	Amber	This coating should be carried out after three months passed from concrete placing.
																A solventless chemically resistant two-pack epoxy repair and re-building compound which is highly resistant to abrasion and wear. Ref: CORROCOAT PLASMET R	3*	(900~1200**)	B	Dark gray	
A polyamine cured, high solids, two-pack glass filled epoxy with good gloss and chemical resistance (Epoxy Glass Flake) Ref: CORROCOAT PLASMET ZE	1*	(150~500**)	A.L or B	Black																	
<div style="display: flex; justify-content: space-between;"> <div> <p>Mark* : If the paint method is brush, the number of coat is 2.</p> <p>Mark** : It shows total D.F.T.</p> <p>The paint does not include Pd, Cr and Cd.</p> </div> <div> <p>Method    A.L : Airless Spray                   B: Brush</p> </div> </div>																					
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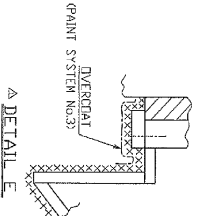
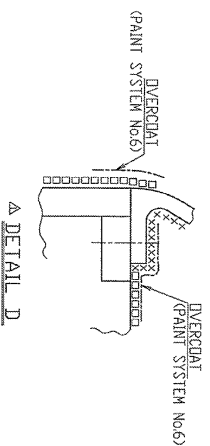
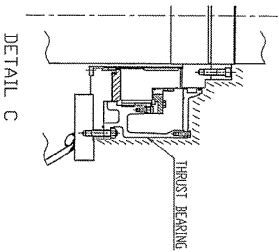
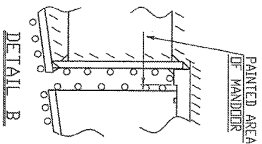
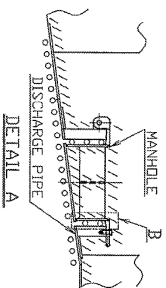
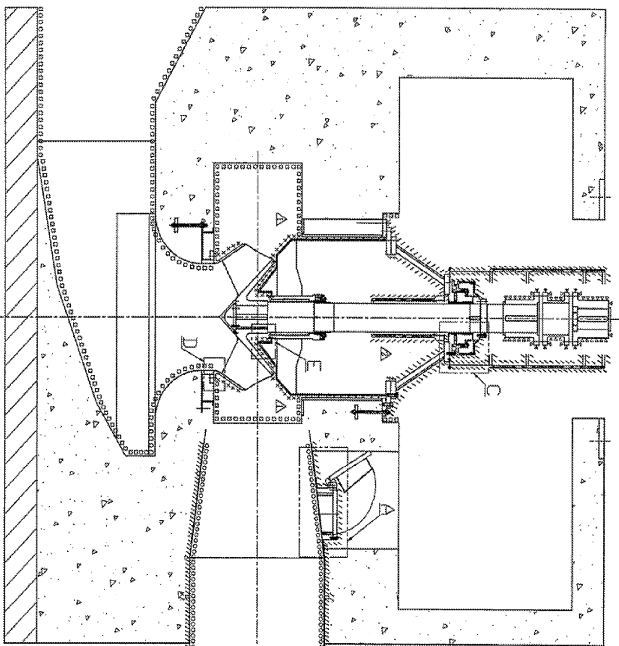
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	06	*Joint between metal parts and concrete *Inside of the embedded parts and discharge lip *Boundary between inner surface (paint system No.3) and lower surface (paint system No.5) of sole plate for pump	Site	Blast (To remove the oil content soil and etc.,)	A high solids, low viscosity, two or three-pack epoxy primer with excellent adhesion to damp surfaces. Ref: CORROCOAT PLASMET ECP	1*	100~175**	A.L or B	Amber	This coating should be carried out after three months passed from concrete placing.
					A polyamine cured, high solids, two-pack glass filled epoxy with good gloss and chemical resistance (Epoxy Glass Flake) Ref: CORROCOAT PLASMET ZE	1*	(150~500**)	A.L or B	Black	
	Total Thickness over 250 μm									
Ref. Doc.	Mark* : If the paint method is brush, the number of coat is 2. Mark** : It shows total D.F.T. The paint does not include Pd, Cr and Cd.									





PRODUCT STANDARD  
PUMPS  
HYDERABAD

4 PAINTING AREA OF PUMP



SYMBOL	SYSTEM No.
///	01
○○○	02
×××	03
▽▽▽	04
▲▲▲	04
(TBCTYL506)	
□□□	05
NO SYMBOL	06
(The joint areas between metal parts and concrete, Inside of the embedded parts, discharge lip, boundary between inner surface (paint system No.3) and lower surface (paint system No.5) of sole plate for pump, Detail D)	

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