

	Project :	ROURKELA PP-II EXPANSION (1 x 250MW)	Document No.	PY-AD-4-M087-8315-04
			REV	01P
	Package :	Fire Protection & Detection System	Page	1 of 2

17.05.17	00	INITIAL SUBMISSION	--	AMIT	MNSR
Date	Rev	Description of Revision	ALT	CHD	APPD
CUSTOMER: 		NTPC-SAIL POWER COMPANY (P) LIMITED			
CONSULTANT 		MECON LIMITED			
CONTRACTOR: 		BHARAT HEAVY ELECTRICALS LTD PROJECT ENGINEERING & SYSTEMS DIVISION, HYDERABAD			
Doc. No		PY-AD-4-M087-8315-04			Rev: 01P
PACKAGE		FIRE PROTECTION & DETECTION SYSTEM			
TITLE		PIPES - MS BLACK, GALVANIZED -MEDIUM INCLUDING FITTINGS			
PREPARED BY		SUMANT		14.05.2017	
CHECKED BY		AMIT		16.05.2017	
APPROVED BY		MNSR		17.05.2017	

BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD-32			Doc no	PY-AD-4-M087-8315-04
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Sl. No.	Description	Material Standard	Dimensional Standard	
A. PIPES NORMALLY FILLED WITH WATER				
1. M.S. Pipes (Underground / Aboveground)				
	65 NB and Below	Mild steel, Black ERW to IS:1239, Part-I	IS: 1239, Part-I, Heavy Gr. PE	
	Above 65 NB to 150 NB		IS: 1239, Part-I, Heavy Gr. BE	
	200 NB & Above	Mild steel, Black, ERW to IS: 3589, Gr. Fe 410	Thickness: 6.35 mm for 200 NB to 350 NB,BE Thickness: 7.14 mm for 400 NB, BE Thickness: 8 mm beyond 400 NB,BE	
2. Fittings				
Fittings (Elbows (R=1.5D) / Reducers/Tees)				
	65 NB and Below	Forged to ASTM A 105	SW ends to ANSI B16.11,3000#	
	Above 65 NB to 300NB	ASTM A 234 Gr WPB	BW Ends to ANSI B-16.9, Sch. 40	
	350 NB & Above	MITRE bends (R=1.5D) Fabricated from parent pipe	BW ends to ASME B16.25	
3. Flanges				
	All sizes	Fabricated from Plate conforming to IS: 2062 Gr. B	Dimensions/ Drilling as per ASME B16.5, Class 150#	
			Facing: FF for all	
4. Gasket				
	All Sizes	CNAF as per BS:7531,Gr.Y Full face type to suit flanges as per ANSI B 16.5, 150# Flat Face		
5. MS FASTENER				
	Bolt	MS to IS: 1367 Cl. 4.6 Full threaded as per IS: 1367		
	Nut	MS to IS: 1367 Cl. 4.0		
	Washer	MS to IS: 2016		
B. PIPES NORMALLY EMPTY BUT PERIODICALLY FILLED WITH WATER				
1. G.I. Pipes (Aboveground)				
	65 NB and Below	MS ERW Galvanized to	IS: 1239, Part-I, Heavy Grade, SCRD	
	Above 65 NB to 150 NB	IS:1239,Part-1, Galvanized as per IS: 4736	IS: 1239, Part-I, Medium Grade, BW	
	200 NB & Above	MS ERW Galvanized to IS-3589 Gr 410 , Galvanized as per IS: 4736	6.35 mm thickness for 200 NB to 350 NB,BE 7.14 mm thickness for 400 NB,BE 8 mm thickness beyond 400 NB, BE	
2. Fittings (Elbows / Reducers / Tees / Cross)				
	65 NB and Below	MS as per IS 1239 Part-I , Galvanized as per IS: 4759	Screwed Ends	
	Above 65 NB to 150 NB	MS as per IS 1239 Part-I , Galvanized as per IS: 4759	BW Ends	
	200 NB & Above	MITRE bends (R=1.5D) Fabricated from parent pipe	BW Ends	
3.	Slip-On / blind flanges for all sizes	IS: 2062 Gr. B, Galvanized	Dimensions/Drilling as per ANSI B 16.5, Class 150 # and Flat Face	
4. Gaskets				
	All Sizes	CNAF as per BS: 7531,Gr.Y. Full face type to suit flanges as per ANSI B 16.5, 150# Flat Face		
5. MS FASTENER				
	Bolt	MS Galvanized to IS: 1367 Cl. 4.6 Full threaded as per IS: 1367		
	Nut	MS Galvanized to IS: 1367 Cl. 4.0		
	Washer	MS Galvanized to IS: 2016		
	Note: In case of branching connections from GI mains for spray piping networks, pipe may be welded for more than two pipe size reduction instead of standard tee.			