

		STANDARD MANUFACTURING QUALITY PLAN						QP. NO.: PESD/QA/MP/0004					
								PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032		PRODUCT : PIPE BHEL SPEC, REV : AS PER PO		REV NO: 00	
		PAGE 1 OF 2											
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY			REMARKS
										P	W	V	
1.0	RAW MATERIALS & BOUGHT OUT ITEMS												
	Raw Material (Mother Hollow, Billets etc.)	Mechanical & Chemical Properties	Major	Mech., Chem. Analysis	One per Lot/Batch /Heat	BHEL Spec	BHEL Spec	MTC		2		2	
2.0	INPROCESS INSPECTION												
		Heat Treatment	Major	TC Review	One per Lot/Batch /Heat	BHEL Spec/ Approved drawing/ datasheet	BHEL Spec/ Approved drawing/ datasheet	TC, HT Chart	√	2	2	1	
		WPS, PQR, WPQ*	Major	Doc. Review	100%			WPS,PQR, WPQ	--	2		1	*for Welded pipes
		NDE*	Critical	RT/UT /LP	As per BHEL Spec			NDE Reports	√	2		1	*as applicable
3.0	FINAL INSPECTION & TESTING												
	PIPES	Mechanical Analysis (UTS, YS, EL, BEND/Flattening)	Major	Mech. Analysis	One per Lot/Batch /Heat	BHEL Spec/ Approved drawing/ datasheet	BHEL Spec/ Approved drawing/ datasheet	MTC	√	2		1	
		Chemical Analysis	Major	Chem. Analysis	One per Lot/Batch /Heat			MTC	√	2		1	
		Dimensional (OD, ID, Length, Thickness, Edge preparation, Straightness, etc.)	Critical	Measure ment	100%			TC	√	2	1		10% Witness by BHEL/BHEL's TPIA
		Hydrostatic Test/ Eddy Current test/ Ultrasonic test	Critical	Hydro Test ET/UT	100%			TC	√	2		1	
		IBR Certificate*	Critical	TC Review	100%			TC	√	2		1	
		PMI*	Critical	PMI test	Random			TC	√	2	1		*If applicable

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL/BHEL NOMINATED INSPECTION AGENCY & END CUSTOMER 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY  BHEL QA SIGNATURE & STAMP	APPROVED BY  BHEL QA SIGNATURE & STAMP	APPROVED BY CUSTOMER'S SIGNATURE & STAMP
---	---	---	---

		STANDARD MANUFACTURING QUALITY PLAN						QP. NO.: PESD/QA/MP/0004					
		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL-HYD 502032			PRODUCT : PIPE BHEL SPEC, REV : AS PER PO			REV NO: 00		DATE: 10.12.2016			
								PAGE 2 OF 2					
SL NO	COMPONENTS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	* D	AGENCY P W V			REMARKS
		Galvanizing (Coating weight, uniformity, Adherence)	Critical	Strip test, Preece test, Bend/ Pivot hammer test	Random	BHEL Spec/ Approved drawing /datasheet	BHEL Spec/ Approved drawing /datasheet	TC	√	2	1		*for G.I Pipe
4.0	PRESERVATION & PACKING												
		Painting*, (Shade, DFT Check) Marking	Major	Visual, Measure ment	Random	BHEL Spec	BHEL Spec	TC	√	2		1	*if applicable
		Packing*	Major	Visual	Random	BHEL Spec	BHEL Spec	Packing List	√	2		1	

Notes:-

1. This MQP should be read along with specification, approved drawings & approved datasheet. (Latest revisions to be considered as per PO).
2. Drawing/datasheet shall prevail over quality plan for contradiction if any.
3. Any project/customer specific requirements which shall be notified have to be fulfilled by the vendor at the time of execution of order.

Abbreviations:-

MTC	–	Material Test certificate	WPS	–	Welding Procedure Specification
IBR	–	Indian Boiler Regulations	PQR	–	Procedure Qualification Record
DFT	–	Dry Film Thickness	WPQ	–	Welder Performance Qualification
TC	–	Test Certificate	NDE	–	Non Destructive Examination
IS	–	Indian Standards	UTS	–	Ultimate Tensile Strength
Appd.			YS	–	Yield Strength
Dwg.	–	Approved Drawing	EL.	–	Elongation
PMI	–	Positive Material Identification	OD	–	Outer Diameter
G.I	–	Galvanized Iron	ID	–	Internal Diameter

Revision History:-

Rev No.	Date	Revision Status	Rev No.	Date	Revision Status
00	10-12-16	Initial Issue			

LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL/BHEL NOMINATED INSPECTION AGENCY & END CUSTOMER 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS.	PREPARED BY	APPROVED BY	APPROVED BY
	 BHEL QA SIGNATURE & STAMP	 BHEL QA SIGNATURE & STAMP	 CUSTOMER'S SIGNATURE & STAMP