QUALITY ASSURANCE PLAN FOR IDLER ROLLERS

Sl. No.	Components & Operation	Charecteristics	Class	Type of Check	Quantum of Check		Reference document	Acceptance Norms	Format of Record		Agency			Remarks
					SUP	OPGC / TPI			format	Documention	SUP	TPI	OPGC	
1. RAW MATERIAL														
1.1	Tubes for Idlers	Surface Defect	Major	Visual	100%	100%	IS : 9295	IS : 9295	IR	---	P	---	---	
		Dimensional properties	Major	TC Review	100%	100%	IS : 9295	Thickness	TC	Y	P	V	V	Min. Tube shell thickness as per Drg.
		Mechanical Properties	Major	TC Review	Batch	Batch	IS : 9295	IS : 9295	TC	Y	P	V	V	
		Chemical Properties	Major	TC Review	Batch	Batch	IS : 9295	IS : 9295	TC	Y	P	V	V	
1.2	Bars for spindle	Mechanical Properties	Major	TC Review	Batch	1 / batch	Relevent material standard as per Drg. & data sheet		TC	Y	P	V	V	
		Chemical Properties	Major	TC Review	Batch	1 / batch			TC	Y	P	V	V	
1.3	Steel for Brg. Housing	Mechanical Properties	Major	TC Review	Batch	1 / batch	Relevent material standard as per Drg. & data sheet		TC	Y	P	V	V	
		Chemical Properties	Major	TC Review	Batch	1 / batch			TC	Y	P	V	V	
1.4	Bearings	Type / Size / Dimension / Make	Major	Verification	100%	1 / batch	Approved Drg. / Data Sheet Technical Spec. / TC Report		IR	Y	P	V	V	
1.5	Seals	dimension / Condition	Major	Verification	100%	1 / batch	Approved Drg. / Data Sheet Technical Spec. / TC Report		IR	Y	P	V	V	
2. IN PROCESS INSPECTION														

2.1	WPS, PQR & Welder Qualification	Conformance to standards	Major	Verification	100%	100%	ASME Section - IX		WPS PQR WPQ	Y	P	V	V	
2.2	Fabn. of Housing	Surface Defect on final weld & distortion	Major	DP Test	10% Random	10% Random	ASME Section - IX	Absence of defects	IR	Y	P	V	V	
2.3	Machining of Spindle	Final Dimension	Major	Measurement	100%	----	Mfg. Drg.	Mfg. Drg.	IR	---	P	---	---	
3. FINAL INSPECTION														
3.1	Complete Assembled Roller	Dimension	Major	Measurement	1%	1 / Lot	Approved Drg. / Data Sheet / IS : 8598		IR	Y	P	W	W	
		Free rotation	Major	Visual	100%	10% Random	IS : 8598 / Free Rotation		IR	Y	P	W	W	
		Radial Run out	Major	Visual	10% Random	10% Random	Approved Drg. / Data Sheet / IS : 8598		IR	Y	P	W	W	
		Fitment of Roller with Bracket	Major	Visual	100%	10% Random	Free Drop / rollers shall be interchangeable		IR	Y	P	W	W	
		Dust Ingress Test	Major	Visual	1 / Lot	1 / Lot	Approved test procedure - #A		IR	Y	P	W	W	See details of test bellow TEST A
		Water Ingress Test	Major	Visual	1 / Lot	1 / Lot	Approved test procedure - #B		IR	Y	P	W	W	See details of test bellow TEST B
		Friction Factor	Major	Measurement	1 / Lot	1 / Lot	Approved test procedure - #C		IR	Y	P	W	W	See details of test bellow TEST C
3.2	Painting	DFT & Paint Shade	Major	Measurement & Visual	10% Random	10% Random	Data Sheet / Technical Spec.		IR	Y	P	V	W	

LEGENDS

SUP	Supplier
TPI	Third Party Inspector
IR	Inspection Report
TC	Test Certificate

P	Perform
V	Verify
W	Witness
Y	Yes

Note :

1 All measuring / test instruments shall be calibrated from NPL / NABL Lab. & should have validity during the test.

2 All activities shall be documented in Internal Inspection Report (IIR) & the same shall be apart of the Inspection Offer by TPI / OPGC

3 Only qualified welders shall be put carry ou the job. The welder qualification records shall be a part of IIR.

4 Eevry 1000 pcs of each type of idlers or part their of shall be treated as one lot.

TEST A	DUST INGRESS TEST	
	Selected roller is mounted on a suitable fixture, on a test rig located on a closed dust chamber, roller shall be operated at operating speed while maintaining a continuous dust cloud in the dust chamber. After 180 minutes the roller shall be stopped and shall be dismantled. Grease from the vicinity of the bearing shall be collected & dissolved in a suitable solvent. The residue shall be measured & compared with residue of fresh grease. The difference between the two should be within 5% for acceptance.	
TEST B	WATER INGRESS TEST	
	Selected roller is mounted on a suitable fixture, on a test rig located on a closed dust chamber, roller shall be operated at operating speed while maintaining a continuous while maintaining continuous spray of water directly on the roller face near the ned cap at 45^{o} angle with a pressure of 1 Kg/cm2 . After a period of 180 minutes. the roller s shall be stopped & dismantled to check for water particles at the bearing area. No water contamination / emulsification of grease / water droplets are acceptable.	
TEST C	FRICTION FACTOR TEST	
	The friction factor is the ration of turning force to rotating mass. Acceptable friction factor for the idler rollers are < 0.2	