subor®	QUALITY PLAN	Doc. No : KQD-03-12 Rev. Date : 24.07.2023 Rev. No : 9 Page : 1 / 2

No	Description of Activity	Reference Standard / Doc.	Process / Product Characteristic	Frequency	Description	Acceptance Criteria's Reference Documents	Responsibility	
							SUBOR	CUSTOMER
1.1	**Raw Materials Check**	ISO 2535, ISO 2555	Polyester Resin	For each delivery	Gel time, reaction parameters, peak temperature, solid content	SQD-03-01 SQD-03-02	Quality Control (C)	W/R
1.2		ISO 565	Sand	For each delivery	Particle distribution, humidity, LOI, wetting out time	SQD-03-05	Quality Control (C)	W/R
1.3		ISO 1887, ISO 3374, ISO 3344, ISO 1172, ASTM 2584	Hoop/Chop (Glass Fiber Products)	For each delivery	Visual control, determination of tex (kg per km), humidity	SQD-03-10	Quality Control (C)	W/R
1.4		ISO 7619, ISO 3302, ISO 9691	Gasket/Stopper	For each delivery	Hardness, dimentions such as diameter, cross sections	SQD-03-07 SQD-03-09	Quality Control (C)	W/R
1.5		Product Data Sheet	Gasket/Stopper Control	For each delivery	Hardness, dimentions such as diameter, cross sections	SQD-03-07	Quality Control (C)	W/R
2.1	**Pipe and Coupling Visual Inspection**	ASTM D 3754	Visual Inspection of Pipe, inner and outer surface	For each product	Visual controls on inner and outer surfaces, ends	ISO 23856, ASTM D 3754	Production (C)	W/R
2.2		ASTM D 3754	Visual Inspection of Coupling, inner and outer surface- coupling grooves	For each product	Visual controls on inner and outer surfaces, ends	ISO 23856 ASTM D 3754	Production (C)	W/R
3.1	**Pipe and Coupling Dimensional Check**	ISO 23856, ASTM D 3567	Pipe ID Control	At production start	Measurements of pipe ID control by measuring diameter of mandrel	Product Data Sheet	Quality Control (C)	W/R
3.2		ISO 23856, ASTM D 3567	Pipe OD Control	For each product	OD measurement of pipe ends	ISO 23856, ASTM D 3567	Production (C)	W/R
3.3		ISO 23856, ASTM D 3567	Pipe Thickness Control	For each product	After cutting the pipe measurement of the thickness of the pipe	Product Data Sheet	Production (C)	W/R
3.4		Product Data Sheet	Chamfering and Calibration – DOS Control of Pipe	For each product	OD measurement after chamfering	ISO 23856, ASTM D 3567	Production (C)	W/R
3.5		ISO 23856, Product Data Sheet	Pipe Length	For each product	Length measurement of the pipe with tape	ISO 23856, ASTM D 3567	Production (C)	W/R
3.6		Product Data Sheet	Measurement of Coupling Grooves	For each product	Depth, width measurement of coupling channels	Product Data Sheet	Production (C)	W/R

Prepared By : Quality Control Responsible **Approved By :** Quality Manager	**Legends** **C :** Check / Perform **W :** Witness **R :** Review **W/R :** Whichever is Applicable

No	Description of Activity	Reference Standard / Doc.	Process / Product Characteristic	Frequency	Description	Acceptance Criteria's Reference Documents	Responsibility	
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4.1	**Pipe and Coupling Product Performance**	EN 1228, ISO 7685, ASTM D 2412	Pipe Stiffness Test	One per day or one per 50 pipes (which ever comes first)	Certain deflection applied on 30 cm. sample	ISO 23856, ASTM D 3567	Quality Control (C)	W/R
4.2		EN 1126, ASTM D 2412, ISO 25780	Pipe Failure Control at Inner Surface Under Load	One per day or one per 50 pipes (which ever comes first)	Certain deflection applied on 30 cm. sample. For jacking pipes proper size can be applied.	ISO 23856, ASTM D 3567	Quality Control (C)	W/R
4.3		EN 1126, ASTM D 2412	Pipe Delamination Control Under Load	One per day or one per 50 pipes (which ever comes first)	Certain deflection applied on 30 cm. sample	ISO 23856, ASTM D 3567	Quality Control (C)	W/R
4.4		EN 1393, ASTM D 2105, ISO 8513	Pipe Longitudinal Tensile Strength	One per day or one per 50 pipes (which ever comes first)	Tensile test on samples taken from pipe on axial direction	ISO 23856, ASTM D 3567	Quality Control (C)	W/R
4.5		ASTM D 2290	Pipe Circumferential Tensile Strength	One per day or one per 50 pipes (which ever comes first)	Tensile test on samples taken from pipe on circumferential Direction	ISO 23856, ASTM D 3567	Quality Control (C)	W/R
4.6		ASTM D 2583	Pipe Surface Hardness	One per day or one per 50 pipes (which ever comes first)	To determine curing characteristic of resin	Min 40	Quality Control (C)	W/R
4.7		AWWA C-950	Pipe Leak Tightness	For each product	By applying pressure with water	No leakage	Production (C)	W/R
4.8		AWWA C-950	Coupling Leak Tightness	For each product	By applying pressure with water	No leakage	Production (C)	W/R
4.9		ASTM D 2584	Pipe Loss On Ignition (LOI) Test	One per day or one per 50 pipes (which ever comes first)	To determine composition of the pipe by weighing and burning samples	Product Data Sheet	Quality Control (C)	W/R
4.10		ISO 25780	Pipe squareness	Start of production	Taking measurements pipe ends to determine squareness of pipe ends	ISO 25780	Quality Control (C)	W/R
4.11		ISO 25780, Annex A	Compression Test	One per day or one per 50 pipes (which ever comes first)	Compress samples until break to determine compression properties of jacking pipes	Min 90 Mpa	Quality Control (C)	W/R
5.1	**Manholes and fittings**	Product Data Sheet	Lamination Hardness	For each product	To determine curing characteristic of resin	Min 35	Production (C)	W/R
5.2		Product Data Sheet	Dimensional Control	For each product	Angles, lengths, number of holes in flanges are checked	Product Data Sheet	Production (C)	W/R
5.3		ASTM D 3754	Visual Inspection	For each product	Visual controls on inner and outer surfaces, ends and parts	ASTM D 3754	Production (C)	W/R