

Inspection & Testing Plan

End user: XXX

Scope of Work: Supply of SS tubes as per TDC:0:102/17

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This ITP is drafted to prepare a plan to specify the key steps of inspection and testing, so as to meet code req and TDC:0:102 /17

SN	STAGE / ACTIVITIES	CHARACTERISTICS	QUANTUM OF CHECK	ACCEPTANCE NORMS	FORMAT OF RECORD	SCOPE OF		
						Mill	TPI	User
1.0	Procedures qualification							
1.1	NDE/Hydrotest, Heat treatment and other procedures	Documented prcedures	100%	Applicable standards & TDC 102/17	Procedure document	H	R	R
2.0	Raw Material Inspection							
2.1	Raw material inspection & preparation	Review of MTC,Steel making process etc. Incoming inspection of Chemical, Mechanical Properties, Radioactivity free, Size & macro/micro structure, non-metallic inclusions etc	100%	Applicable standards & TDC 102/17	Test certificates	H	R	R
3.0	Manufacturing process & inspection							
	Hot piecing / rolling	Temperature, rolling force, speed, forging ratio, surface quality, dimensions, length, weight etc	100%	Mill established procedures	Hot working record	P	-	-
	Straightening	Temperature, press, speed, surface quality, straightness	100%	Mill established procedures	Straightening record	P	-	-
	Surface cleaning	Surface quality, suitability for cold working	100%	Mill established procedures	Cleaning record	P	-	-
	Cold rolling	Rolling speed, press, etc	100%	Mill established procedures	Cold rolling record	P	-	-
	Heat treatment-stress relieving or final solution treatment as per process design to specific sizes	time, tempature, heating speed, cooling speed etc	100%	TDC 102/17 Mill established procedures	HT record		R	R

	Straightening	Temperature, press, speed, surface quality, straightness	100%	Mill established procedures	Straightening record	P	-	-
	Surface cleaning	Pickling, time, cleaning media	100%	Mill established procedures	Cleaning record		-	-
	Cold drawing(if size requies)	Drawing speed, press, etc	100%	Mill established procedures	Cold drawing record	P	-	-
	Heat treatment-stress relieving or final solution treatment as per process design to specific sizes	time, tempature, heating speed, cooling speed etc	100%	Mill established procedures	HT report	P	R	R
	Straightening	Temperature, press, speed, surface quality, straightness	100%	Mill established procedures	Straightening record	P	-	-
	Surface cleaning	Pickling, time, cleaning media	100%	Mill established procedures	Cleaning record		-	-
	Ultrasonic Testing	Surface & Internal impections	100%	TDC 102/17	UT reports	P	RW	R
	Eddy current Test	Surface & Internal impections	100%	Applicable standards & TDC 102/17	ET report	P	RW	R
	Radioactive contamination	Radioactive damage	100%	TDC 102/17	Report		R	R
	Residual magnetism	Magnetism existing	100%	TDC 102/17	Report	P	R	R
	Identification of test samples	Product chemical, Tensile, Flattening, Flaring, hardness, grain size, etc	5% of lot, min 2 No.s	Applicable standards & TDC 102/17	Test reports	P	RW	R
	Product Analysis	Chemical composition	5% of lot, min 2 No.s	Applicable standards & TDC 102/17	Test reports	P	RW	R
	Destructive testing	Tensile test	5% of lot, min 2 No.s	Applicable standards & TDC 102/17	Test reports	P	RW	R
		Grain size	5% of lot, min 2 No.s	Applicable standards & TDC 102/17	Test reports	P	RW	R
		Hardness	5% of lot, min 2 No.s	Applicable standards & TDC 102/17	Test reports	P	RW	R
		Flattening test	5% of lot, min 2 No.s	Applicable standards & TDC 102/17	Test reports	P	RW	R
		Flaring test	5% of lot, min 2 No.s	Applicable standards & TDC 102/17	Test reports	P	RW	R
	Cutting to fixed lengths	Length tolerance	100%	As per PO length req	Inspection record	P	R	R
4.0	Final Inspection							

4.1	Hydrostatic Testing	Leak Check	100%	No leak	Test reports	P	RW	R
4.2	Visual & Dimensional inspection(VDI)	Surface condition, straightness, end finish, Outer Dia, Thickness, end caps etc	100%	Applicable standards & TDC 102/17	Test reports	P	RW	R
4.3	Length Check	Fixed length	100%	As per PO length req	Test reports	P	RW	R
4.4	PMI Check	Chemical check	100%	Mill practise	Test reports	P	RW	R
4.5	Marking	Details of identification	100%	Applicable standards & TDC 102/17	Test reports	P	RW	R
4.6	Color coding	Color	100%	Applicable standards & SIP : PP21 R07	Test reports	P	RW	R
4.7	Presevation & Packing	Protection of tube from rusting/damaging	100%	Applicable standards & TDC 102/17	Test reports	P	RW	R
5.0	Certification & release							
5.1	MTC	Mill's testing report for all tests as appliable	100%	Applicable standards & TDC 102/17	Mill Test Certificate	P	R	R
5.2	IBR Certificate and Release note	Review of stage inspection report / rest reports & issue of IBR certificate and realease note	100%	IBR regulations	Inspection certificate and report	H	P	R

Legend:

P - Perform

R - Review

W - Witness

RW- Random Witness

H - Hold

Remarks

Review of heat treatment only applicable for final solution treatment