

INSPECTION CERTIFICATE

(A02) EN 10204: 2004 TYPE 3.1

(A03) No. **4-23-01050-rev.01** Pag. 1 / 7

(A06) Purchaser
GRANDE PRAIRIE FLUID SYSTEM TECHNOLOGIES INC
118 COMMERCE DRIVE
R3P 0Z6 WINNIPEG
Manitoba
Canada

(A07) Customer Order No	8007212
(A08) SMST-Tubes Order No	0000290227
SMST-Item	(A09) Part No
0000290227-000005	SS-T6-S-049-20

(B01) (B02) (B04) Product Description

Seamless Stainless Steel Cold Finished Tubes Solution Annealed In Bright Condition Plain Ends Square Cut Deburred

Specifications

ASME SA 213 21;ASTM A 213 21 a;ASTM A 269 15a (2019) >US units;SWAGelok SCS-00062 06.2021 Rev. C

Grade

TP 316;TP 316L;DMV 316L

Tolerances

A 213 / A 1016 AW;ASTM A 269

(B03) Supplementary Requirements

None

(B06 - D01) Marking of the Product

Technical marking

MANNESMANN MST-I - ASME SA 213 / ASTM A 213 / ASTM A 269 - DMV 316L - TP 316 / TP 316L - 3/8 " x 0,049 " - 9,53 MM x 1,24 MM - AW - SML - CF - NDE - HEAT \$HEAT_NBR\$ - \$QUAL_LOT_NBR\$ - ITALY - BUNDLE \$BUNDLE_NBR\$

Country of Origin of the tubes

Italy

			Quantity			Dimensions			
(B07) Heat	Quality Lot	SMST-Item	(B08) Pieces	(B13) Weight	(B16) Length	(B09) OD	(B10) WT	(B11) Ordered Length	
								min	max
278155	QL40078460	000005	1713	2655.13 kg	10442.448 m	9.53 mm	1.24 mm	6096 mm	6099 mm
				5853.56 lbs	34260.00 ft	0.375 "	0.049 "	20.00 ft	20.01 ft
	QL40078692	000005	293	448.00 kg	1786.128 m	9.53 mm	1.24 mm	6096 mm	6099 mm
				987.67 lbs	5860.00 ft	0.375 "	0.049 "	20.00 ft	20.01 ft
278157	QL40078684	000005	385	597.35 kg	2346.960 m	9.53 mm	1.24 mm	6096 mm	6099 mm
				1316.93 lbs	7700.00 ft	0.375 "	0.049 "	20.00 ft	20.01 ft
409830	QL40078934	000005	659	1022.48 kg	4017.264 m	9.53 mm	1.24 mm	6096 mm	6099 mm
				2254.18 lbs	13180.00 ft	0.375 "	0.049 "	20.00 ft	20.01 ft
	QL40078940	000005	595	920.00 kg	3627.120 m	9.53 mm	1.24 mm	6096 mm	6099 mm
				2028.25 lbs	11900.00 ft	0.375 "	0.049 "	20.00 ft	20.01 ft
RM343	QL40078557	000005	960	1489.51 kg	5852.160 m	9.53 mm	1.24 mm	6096 mm	6099 mm
				3283.81 lbs	19200.00 ft	0.375 "	0.049 "	20.00 ft	20.01 ft
	QL40078683	000005	345	537.39 kg	2103.120 m	9.53 mm	1.24 mm	6096 mm	6099 mm
				1184.74 lbs	6900.00 ft	0.375 "	0.049 "	20.00 ft	20.01 ft
			4950	7669.86 kg	30175.200 m				
			4950	16909.14 lbs	99000.00 ft				

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Heat Analysis

		Request	C	Si	Mn	P	S	Cr	Ni	Mo
		Min	0.00	0.00	0.00	0.00	0.0050	16.0	10.0	2.0
		Max	0.035	1.0	2.0	0.045	0.0150	18.0	14.0	3.0
(B07) Heat	Heat Origin	(C70) Melting Process	%	%	%	%	%	%	%	%
278155	Italy	EAF + AOD	0.020	0.37	1.30	0.025	0.0080	16.7	11.3	2.1
278157	Italy	EAF + AOD	0.024	0.38	1.32	0.025	0.0087	16.7	11.2	2.1
409830	Germany	EAF + VOD	0.015	0.41	1.44	0.023	0.0100	17.0	11.3	2.1
RM343	France	E + VOD	0.016	0.39	1.88	0.017	0.0080	16.8	11.0	2.1

Product Analysis

ASTM A 213;ASME SA 213;ASTM A 480;ASTM A 269

	Request	C	Si	Mn	P	S	Cr	Ni	Mo
	Min	0.00	0.00	0.00	0.00	0.0050	16.0	10.0	2.0
	Max	0.035	1.0	2.0	0.045	0.0150	18.0	14.0	3.0
Quality Lot	(C00) Sample	%	%	%	%	%	%	%	%
QL40078460	49212499	0.023	0.38	1.32	0.030	0.0110	16.9	11.2	2.0
QL40078557	49213654	0.018	0.41	1.91	0.020	0.0090	16.9	11.0	2.0
QL40078683	49214433	0.018	0.40	1.90	0.020	0.0090	16.9	11.0	2.0
QL40078684	49214440	0.026	0.39	1.30	0.028	0.0100	16.8	11.2	2.0
QL40078692	49214544	0.023	0.39	1.31	0.030	0.0110	16.9	11.2	2.0
QL40078934	49217125	0.016	0.40	1.45	0.027	0.0100	16.8	11.3	2.1
QL40078940	49217300	0.016	0.40	1.45	0.027	0.0100	16.8	11.3	2.1

Sampling done on tubes in manufacturing length

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Tensile Test at Room Temperature

ASTM A 370

(C02) Direction: LONGITUDINAL

(C10) Description: FULL SIZE TEST SPECIMEN

		(C11)	(C12)	(C13)
		YS 0.2%	U.T.S.	EL
		Rp 0,2%	Rm	2"
Request	Min	30	75	35.0
	Max			
Quality Lot	(C00) Sample	ksi	ksi	%
QL40078460	49212499	42	87	51.6
	49212500	49	86	47.8
QL40078557	49213654	47	89	47.2
	49213655	48	91	48.6
QL40078683	49214433	46	91	48.4
	49214434	46	91	48.2
QL40078684	49214440	48	88	54.1
	49214441	45	88	53.5
QL40078692	49214544	57	92	42.1
	49214545	55	92	42.3
QL40078934	49217125	50	88	49.2
	49217126	51	89	48.8
QL40078940	49217300	50	89	48.6
	49217301	49	87	49.6

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(C30) Hardness HRB

ASTM E 18

Quality Lot	(C00) Sample	Request	(C30) HRB		
		Result	(C31) Min	(C31) Max	90.0 max (C32) Avg
QL40078460	49212499		80	81	80.5
	49212500		83	84	83.5
QL40078557	49213654		83	84	83.5
	49213655		83	84	83.5
QL40078683	49214433		82	83	82.5
	49214434		82	83	82.5
QL40078684	49214440		81	82	81.5
	49214441		81	82	81.5
QL40078692	49214544		87	88	87.5
	49214545		87	88	87.5
QL40078934	49217125		84	85	84.5
	49217126		84	85	84.5
QL40078940	49217300		84	85	84.5
	49217301		83	84	83.5

Sampling done on tubes in manufacturing length

(C51) Flaring Test

ASTM A 1016

Quality Lot	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	Result
QL40078460	49212495	49212496	49212502	49212503	49212531	49212532	OK
	49212914	49213670	49213671				OK
QL40078557	49213648	49213649	49213650	49213659	49213674		OK
QL40078683	49214429	49214430					OK
QL40078684	49214436	49214437					OK
QL40078692	49214540	49214541					OK
QL40078934	49217117	49217118	49217119	49217120			OK
QL40078940	49217294	49217295	49217296				OK

Sampling done on tubes in manufacturing length

Test done at both ends of tubes

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(C50) Flattening Test

ASTM A 1016

Quality Lot	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	Result
QL40078460	49212497	49212498	49212504	49212505	49212533	49212534	OK
	49212915	49213672	49213673				OK
QL40078557	49213651	49213652	49213653	49213660	49213675		OK
QL40078683	49214431	49214432					OK
QL40078684	49214438	49214439					OK
QL40078692	49214542	49214543					OK
QL40078934	49217121	49217122	49217123	49217124			OK
QL40078940	49217297	49217298	49217299				OK

Sampling done on tubes in manufacturing length

Test done at both ends of tubes

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Other Tests and Declarations

QL40078460; QL40078557; QL40078683; QL40078684; QL40078692; QL40078934; QL40078940

Heat Treatment Solution Annealed 1100 °C/2012 °F Holding Time 1 Min / mm WT rapid gas cooling

(D01)	Visual and dimensional inspection (VT) on 100% of tubes according to the order	Satisfactory
(D51)	Antimixing Check (PMI) on 100% of tubes	Satisfactory
(D02)	Eddy Current Testing (ET) on 100% of tubes ASTM A 1016	Satisfactory

"Tubing are capable of passing corrosion test in accordance with EN ISO 3651-2 method A and ASTM A 262 Practice E"

Tubes are compliant with NACE MR 0103 and MR 0175

No Weld Repair

(Z01) SMST declares that the product was manufactured, sampled, tested, inspected and packed in accordance with the specifications and any other requirements designated in the purchase order within the extent listed in SMST order acknowledgment, and has been found to meet such requirements

Tubes are free from mercury contamination and from radioactive contamination

The material is conforming to directive 2000/53/EC and 2011/65/EU

Confirmation with reference to Pressure Equipment Directive 2014/68/EU:

The works operates a quality management system that has undergone a specific assessment for materials for pressure equipment and is certified by a competent body (TUV-Cert. No: 70/2002/MUC)

(Z02) Mill's Inspector **Ruggero Clementi (QC)** Date of Edition **02/05/2023**

This certificate is issued by SALZGITTER MANNESMANN STAINLESS TUBES via a computerized system bearing a traceable unique number. It is valid without signature. An intermediary may only pass on the original certificate without any alterations. Providing a copy of the original is only permitted subject to strict compliance with the prerequisites set out in § 6 of EN 10204:2004 i.e. traceability and availability of the original upon request. Any modification or alteration of the certificate or any copies are strictly prohibited. Any contravention of this notice or § 6 of EN 10204:2004 is illegal and will be prosecuted. Any falsification of a certificate e.g. by introducing false or fraudulent data for the purpose of promoting the sales of goods is a criminal offence under German law (and many other jurisdictions) punishable with fines and imprisonment. If an authentication is needed, please contact info@mst.mannesmann.com

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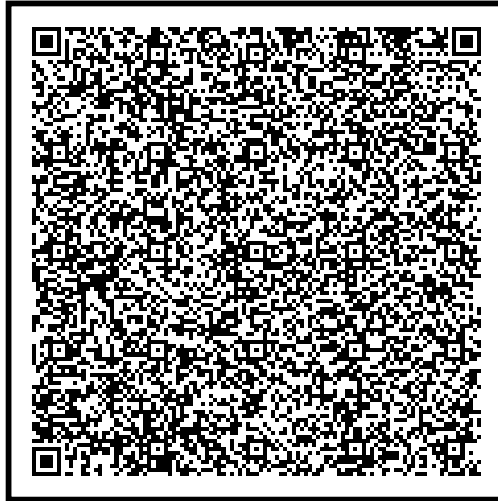
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Certificate anti counterfeiting check



**A set of information from the Inspection Certificate cover page are included in encrypted form in the above QR code.
By scanning it with your mobile device you can check if the Inspection Certificate is genuine.**