

INSPECTION CERTIFICATE

(A02) EN 10204: 2004 TYPE 3.1

(A03) No. **4-23-01049-rev.01** Pag. 1 / 6

<p>(A06) Purchaser GRANDE PRAIRIE FLUID SYSTEM TECHNOLOGIES INC 118 COMMERCE DRIVE R3P 0Z6 WINNIPEG Manitoba Canada</p>	<p>(A07) Customer Order No 8007212 (A08) SMST-Tubes Order No 0000290227 SMST-Item (A09) Part No 0000290227-000004 SS-T6-S-035-20</p>
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(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 0,035 " - 9,53 MM x 0,89 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
277398	QL40078960	000004	850	1000.00 kg	5181.600 m	9.53 mm	0.89 mm	6096 mm	6099 mm
				2204.62 lbs	17000.00 ft	0.375 "	0.035 "	20.00 ft	20.01 ft
278155	QL40078335	000004	3582	4117.94 kg	21835.872 m	9.53 mm	0.89 mm	6096 mm	6099 mm
				9078.51 lbs	71640.00 ft	0.375 "	0.035 "	20.00 ft	20.01 ft
403650	QL40078957	000004	505	586.11 kg	3078.480 m	9.53 mm	0.89 mm	6096 mm	6099 mm
				1292.15 lbs	10100.00 ft	0.375 "	0.035 "	20.00 ft	20.01 ft
			4937	5704.05 kg	30095.952 m				
			4937	12575.28 lbs	98740.00 ft				

Heat Analysis

(B07) Heat	Heat Origin	Request	C	Si	Mn	P	S	Cr	Ni	Mo	
											Min
											Max
			0.00	0.00	0.00	0.00	0.0050	16.0	10.0	2.0	
			0.035	1.0	2.0	0.045	0.0150	18.0	14.0	3.0	
(B07) Heat	Heat Origin	(C70) Melting Process	%	%	%	%	%	%	%	%	
277398	Italy	EAF + AOD	0.019	0.34	1.28	0.023	0.0075	17.0	11.2	2.1	
278155	Italy	EAF + AOD	0.020	0.37	1.30	0.025	0.0080	16.7	11.3	2.1	
403650	Germany	EAF + VOD	0.021	0.50	1.44	0.025	0.0060	17.2	11.3	2.1	

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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	%	%	%	%	%	%	%	%
QL40078335	49211006	0.023	0.38	1.32	0.030	0.0110	16.8	11.3	2.0
QL40078957	49217581	0.024	0.51	1.50	0.028	0.0080	17.1	11.4	2.1
QL40078960	49217698	0.021	0.32	1.30	0.027	0.0090	17.1	11.3	2.0

Sampling done on tubes in manufacturing length

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	%
QL40078335	49211006	60	90	39.8
	49211007	59	90	40.4
QL40078957	49217581	43	83	53.1
	49217582	53	87	48.6
QL40078960	49217698	45	89	48.2
	49217699	44	88	48.6

Sampling done on tubes in manufacturing length

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(C30) Hardness HRB

ASTM E 18

Quality Lot	(C00) Sample	Request	(C30) HRB		
			Result	(C31) Min	(C31) Max
QL40078335	49211006		88	89	88.5
	49211007		88	89	88.5
QL40078957	49217581		80	81	80.5
	49217582		85	86	85.5
QL40078960	49217698		81	82	81.5
	49217699		81	82	81.5

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
QL40078335	49211000	49211001	49211002	49211009	49211010	49211011	OK
	49211015	49211016	49211017	49211018	49211019	49211020	OK
	49211027	49211028	49211029	49211030			OK
QL40078957	49217575	49217576	49217577				OK
QL40078960	49217688	49217689	49217690	49217691	49217692		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
QL40078335	49211003	49211004	49211005	49211012	49211013	49211014	OK
	49211021	49211022	49211023	49211024	49211025	49211026	OK
	49211031	49211032	49211033	49211034			OK
QL40078957	49217578	49217579	49217580				OK
QL40078960	49217693	49217694	49217695	49217696	49217697		OK

Sampling done on tubes in manufacturing length

Test done at both ends of tubes

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Other Tests and Declarations

QL40078335; QL40078957; QL40078960

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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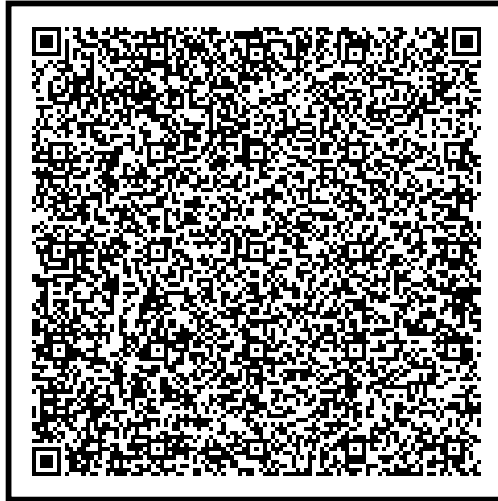
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Certificate anti counterfeiting check



**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.**