

INSPECTION CERTIFICATE

(A02) EN 10204: 2004 TYPE 3.1

(A03) No. **4-23-01053-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 0000290227-000008 SS-T8-S-049-20</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 - 1/2 " x 0,049 " - 12,70 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
278153	QL40078317	000008	4509	9669.09 kg	27486.864 m	12.70 mm	1.24 mm	6096 mm	6099 mm
				21316.71 lbs	90180.00 ft	0.500 "	0.049 "	20.00 ft	20.01 ft
	QL40078462	000008	798	1711.61 kg	4864.608 m	12.70 mm	1.24 mm	6096 mm	6099 mm
				3773.46 lbs	15960.00 ft	0.500 "	0.049 "	20.00 ft	20.01 ft
403660	QL40078827	000008	63	135.13 kg	384.048 m	12.70 mm	1.24 mm	6096 mm	6099 mm
				297.91 lbs	1260.00 ft	0.500 "	0.049 "	20.00 ft	20.01 ft
5370				11515.83 kg	32735.520 m				
5370				25388.08 lbs	107400.00 ft				

Heat Analysis

(B07) Heat	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	%	%	%	%	%	%	%	
278153	Italy	EAF + AOD	0.022	0.33	1.28	0.023	0.0062	16.7	11.2	2.1
403660	Germany	EAF + VOD	0.027	0.40	1.46	0.025	0.0090	16.7	11.3	2.1

INSPECTION CERTIFICATE

(A02) EN 10204: 2004 TYPE 3.1

(A03) No. **4-23-01053-rev.01** Pag. 2 / 6

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	%	%	%	%	%	%	%	%
QL40078317	49210814	0.021	0.35	1.33	0.028	0.0080	16.6	11.2	2.0
QL40078462	49212523	0.021	0.34	1.30	0.028	0.0080	16.6	11.2	2.0
QL40078827	49216021	0.028	0.44	1.50	0.026	0.0120	16.6	11.1	2.1

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	%
QL40078317	49210814	55	91	48.4
	49210815	56	92	46.9
QL40078462	49212523	55	92	45.7
	49212524	55	92	45.9
QL40078827	49216134	42	88	49.6

Sampling done on tubes in manufacturing length

INSPECTION CERTIFICATE

(A02) EN 10204: 2004 TYPE 3.1

(A03) No. **4-23-01053-rev.01** Pag. 3 / 6

(C30) Hardness HRB

ASTM E 18

Quality Lot	(C00) Sample	Request	(C30) HRB		90.0 max
			(C31) Min	(C31) Max	
QL40078317	49210814	Result	87	88	87.5
	49210815		88	89	88.5
QL40078462	49212523		86	87	86.5
	49212524		86	87	86.5
QL40078827	49216134		80	81	80.5
	49216135		80	81	80.5

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
QL40078317	49210810	49210811	49210817	49210826	49210827	49210830	OK
	49210904	49210905	49211131	49211132	49211135	49211136	OK
	49211315	49211316	49211319	49211320	49211329	49211331	OK
	49211332	49211389	49214135				OK
QL40078462	49212519	49212520	49212527	49212528			OK
QL40078827	49216132						OK

Sampling done on tubes in manufacturing length

Test done at both ends of tubes

INSPECTION CERTIFICATE

(A02) EN 10204: 2004 TYPE 3.1

(A03) No.

4-23-01053-rev.01

Pag.

4 / 6

(C50) Flattening Test

ASTM A 1016

Quality Lot	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	(C00) Sample	Result
QL40078317	49210812	49210813	49210818	49210828	49210829	49210831	OK
	49210906	49210907	49211133	49211134	49211137	49211138	OK
	49211317	49211318	49211321	49211322	49211330	49211333	OK
	49211334	49211390	49214136				OK
QL40078462	49212521	49212522	49212529	49212530			OK
QL40078827	49216133						OK

Sampling done on tubes in manufacturing length

Test done at both ends of tubes

INSPECTION CERTIFICATE

(A02) EN 10204: 2004 TYPE 3.1

(A03) No. **4-23-01053-rev.01** Pag. 5 / 6

Other Tests and Declarations

QL40078317; QL40078462; QL40078827

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

INSPECTION CERTIFICATE

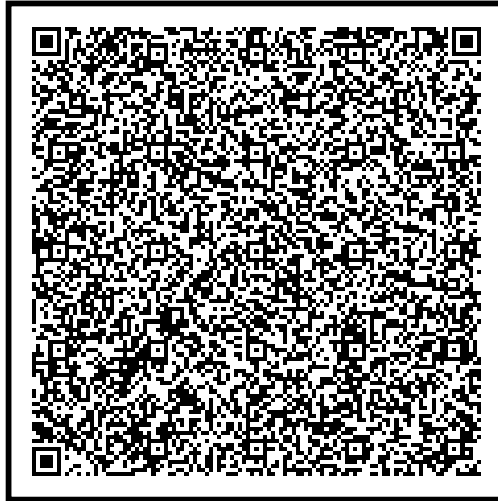
(A02) EN 10204: 2004 TYPE 3.1

(A03) No.

4-23-01053-rev.01

Pag. 6 / 6

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.**