

SANDVIK

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Sandvik Materials Technology

Product Area Tube

982 Griffin Pond Rd, Clarks Summit, PA US 18411, Ph: 570-585-7500

MATERIAL CERTIFICATE

Cert#: 2100005960

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Plant Location: 982 Griffin Pond Road, Clarks Summit, PA 18411
 Sold To: 554999 Ship To:
 PAC STAINLESS LTD. PAC STAINLESS LTD.
 HOUSTON TX HOUSTON TX
 Customer Order No: 60794H Certification Date: 20210831
 Sandvik Order No: 380292/11

Work Order/Lot: 304168

ASTM A511-20, Mechanical Tubing, ASTM A269-15a (2019), ASTM A213-19a
 ASME SA-213, ASME Section II, 2019 Edition, NACE MR0175/ISO 15156
 NACE MR0103/ISO 17945:2016

Cold Finished BRIGHT ANNEALED Seamless Tube Size: .500" X .065" AW
 Type MT 316/MT 316L/TP316/TP316L Heat: 561379

Material Manufacturer: Sandvik Materials Technology, USA

ANALYSIS %		Si	Mn	P	S	Cr	Ni
Heat	C	.38	1.56	.031	.009	16.64	12.39
Prod	C	.39	1.55	.033	.007	16.71	12.39
Heat	Fe	Mo	Co	Ti	Cu	Al	Pb
Heat		2.03	.089	.003	.30	.003	.00006
Prod		2.03	.088	.003	.29	.003	.00006
Heat	N	O					
Heat	.024						
Prod	.029						

Mechanical Tests:				Tensile Tests:			Elongation			Reduction	
Yield Strength		1.0%		Strength		in %			Of Area		
0.2%	psi	MPa	psi	MPa	psi	MPa	E2"	E10"	E4d	E5d	%
40300	277.9		N/A	82000	565.5	53	N/A	N/A	N/A	N/A	N/A

Hardness Test Results: 77HRBW, 78HRBW

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,

No. samples: 2 Result: Acceptable

Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:

Acceptable

Tensile Test sample width (1=Full-Size 2=1/2" Strip): 1

This material complies with DFARS 252.225-7001 (2017)

This material does not comply with DFARS 252.225-7008 (2013)

This material complies with DFARS 252.225-7009 (2019)

This material does not comply with FAR 52.225-1 (2021)

This material complies with FAR 52.225-5 (2019)

Country Of Origin: United States

100% Positive Material Identification performed

All material subjected to a final solution annealing heat treatment with material at a temperature of 1900 deg. F

minimum followed by rapid quenching to below 800 deg. F in less than three (3) minutes.

The material has not come in contact with Mercury or Mercury

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containing compounds.

No welding has been performed on this material.

Material was 100% eddy current tested in accordance with ASTM A450, ASTM A1016 and is acceptable.

Inspection certificate produced in accordance with EN 10204 3.1 (formerly EN 10204 3.1.B).

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in EN 10204:2004, Section 6. Contravention of this notice will be prosecuted to the fullest extent of the applicable law(s).

Material has been manufactured/supplied in accordance with Sandvik Materials Technology Quality Manual-Commercial Products Revision 4 dated May 25, 2021. Quality system has been approved to ISO 9001:2015 (Cert# 10213298, 31AUG19)

No unauthorized alterations. The content of this inspection certificate may not be modified or revised in any way without the prior written approval of Sandvik Materials Technology. Unauthorized alterations to the inspection certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both.

Contravention of this notice will be prosecuted to the fullest extent of the applicable laws.

Melt Source: SMT SANDVIKEN, SWEDEN

Melt Method: Electric Arc Furnace-AOD Refining

This is to certify that the contents of this certificate are correct and accurate as contained in Sandvik's records, and that all above test results and operations performed are in compliance with the requirements of the purchase order and the specification(s) listed above.

Electronically Generated Certificate-Valid without signature

John Scherer, Quality Manager

10 (PACINST R45) (15) CF (JDS)