

Jan 26, 2005
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M A T E R I A L C E R T I F I C A T E

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No. 200485380

Sandvik Materials Technology, Tubular Products Area
P.O. Box 1220, Scranton, PA USA 18501, Ph: 570-585-7500
Plant Location: 982 Griffin Pond Road, Clarks Summit, PA 18411

Sold To: 632580

Ship To:

SANDVIK DE MEXICO

GAISA FORWARDING INC

TLALNEPANTLA, EDO MEXICO

LAREDO TX

Customer Order No: 450571

Certification Date: 20041112

Sandvik Order No: 46630/23

Work Order/Lot: 312329

ASTM A213-03b, ASTM A269-02a, ASTM A511-96, ASME SA-213

ASME Section II, 2004 Edition

Cold Finished BRIGHT ANNEALED Seamless Tube

Type MT 316/MT 316L/TP316/TP316L

Size: .500" X .065"

Heat: 502273

ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.018	.46	1.54	.029	.008	16.86	12.38
Prod	.016	.46	1.55	.027	.006	16.84	12.33
	Fe	Mo	Al	Pb			
Heat		2.08	.004	.0001			
Prod		2.07	.003	.0001			

Mechanical Tests:

Yield Strength		Tensile Strength		Elongation in %				Reduction Of Area %
0.2%	1.0%			E2"	E10"	E4d	E5d	
psi	MPa	psi	MPa					
36000	248.3	N/A	79000	544.8	68	N/A	N/A	N/A

Hardness Test Results: 74HRB, 72HRB

Flare Test per ASTM A450,

No. samples: 2 Result: Acceptable

Flattening Test per ASTM A450: Acceptable

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

Country Of Origin: Canada

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 containing compounds.

No welding has been performed on this material.

Material has been eddy current tested in accordance with ASTM A450, ASTM A1016 and is acceptable.

Material has been manufactured/supplied in accordance with Sandvik Materials Technology Quality Manual-Standard Products Revision 7 dated September 9, 2004. Quality system has been approved to ISO 9001:2000.

Certificate produced in accordance with EN 10204 (DIN 50049) 3.1.B.

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.

Kurt Revak, Quality Specialist
10 (NADCSTKBA R14) (10) CF (CFN)


Authorized Representative