



CERTIFICATE

No. A/11-163760 Rev 00
Date 2011-05-17 Page 1/2INSPECTION CERTIFICATE acc to
EN 10 204 3.1PROCESSKONTROLL ITEMS AB
VALLENVÄGEN
STORA HÖGA INDUSTRIOMRÅDE
444 02 STORA HÖGAINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References						
	Customer order 2011-05-17	Order No.	Subs No. ABSMT Dispatch note					
003-00991	PROCESSKONTROLL ITEM	ABSMT No.	C.Code					
		300-00000	29					
Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING		Steel/material Designations						
		Sandvik	AISI					
		3R60	TP316/TP316L					
		EN no						
		1.4435						
Steel making process Electric furnace								
Technical requirements ASTM A-213-08 AW, ASME SA-213-ED-07 AD-09B AW, ASTM A-269-08 NACE MR0175/ISO 15156-3:2009 PED 97/23/EC EN 10216-5 TC1 HRB MAX 80								
EXTENT OF DELIVERY								
It	Product designation	Heat	Lot Pieces Kg					
01	THT-3R60-9.53-1.24 9.53 X 1.24	047352	92992 1					
		Total	1					
KEY TO HEAT		KEY TO LOT						
Heat Code	Heat No.	Lot Code	Lot No.					
047352	523173	92992	349111					
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047352	0.017	0.40	1.72	0.028	0.010	17.25	13.23	2.54
	N							
047352	0.032							
Chemical composition, product (weight%)								
Lot	C	Si	Mn	P	S	Cr	Ni	Mo
92992	0.018	0.40	1.72	0.030	0.007	17.39	13.29	2.55
	N							
92992	0.030							
Quality assurance - Ulrik Rodling / QA-manager Tube & Pipe MTC Service / Certificates								



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Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rpl.0	Rm	A	4D
92992	257	291	551	54	52

Hardness test

Lot	Min	Max
	HRB	HRB
92992	75	76

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Leak test: Eddy current test acc to EN 10246-2, ASME SA-1016.
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

Marking:

SANDVIK 3R60 ASTM/ASME A/SA-213AW A-269 EN 10216-5 TC1 TP 316/TP 316L EN 1.4435 COLD SMLS NDE 9.53 X 1.24 MM 3/8" X 18 BWG/SWG HT 523173 SC LOT 349111 D IN 2391 *QA-TUBE*

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (97/23/EC) by TUEV NORD; notified body, reg.no. 0045.

The number of tests are based on the size of the manufacturing lot before cutting to finished lengths.

The delivered products comply with the specifications and requirements of the order.

The material is manufactured according to a Quality system, approved and registered to ISO 9001.

The certificate is produced with EDP and valid without signature.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 00038880