



CERTIFICATE

No. A/10-991560 Rev 00
Date 2010-09-02 Page 1/2INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGAINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References						
709067	Customer order 2010-09-02	Order No. 210924	Subs No. 183900					
003-00991	ITEMS	ABSMT No. 300-28142	ABSMT Dispatch note 15130/54					
Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING		Steel/material Designations Sandvik 3R60 EN no 1.4436/1.4435						
Steel making process Electric furnace		AISI TP316/TP316L						
Technical requirements ASTM A-213-09A AW, ASME SA-213-ED-07 AD-09B AW, ASTM A-269-08 NACE MR0175/ISO 15156-3:2003 PED 97/23/EC EN 10216-5 TC1 HRB MAX 80								
EXTENT OF DELIVERY								
It	Product designation	Heat	Lot	Pieces	Kg	M		
01	THT-3R60-9.53-1.65 9.53 X 1.65	047473	94813	10	19.0	60.00		
				Total	10	19.0	60.00	
KEY TO HEAT				KEY TO LOT				
Heat Code	Heat No.	Lot Code		Lot No.				
047473	047420	94813		167365				
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047473	0.018	0.39	1.77	0.029	0.009	17.35	13.08	2.56
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047473	0.020	0.41	1.63	0.028	0.009	17.30	13.05	2.55
Quality assurance - Per Eriksson/ 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	Rp1.0	Rm	A	4D
94813	253	298	605	46	43
	270	315	595	47	46

Hardness test

Lot	Min	Max
	HRB	HRB
94813	66	74

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 ASTM A-1016.
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

Marking:

SANDVIK 3R60 ASTM/ASME A/SA-213AW/A-269 NEA 49-117 EN 10216-5 TC1 SS 2353-22 W
NR 1.4435 TP 316/TP 316L Z2CND17-13 EN 1.4435 M S PK1 NDE 9.53 X 1.65 MM HT 04
7420 SG LOT 167365 DIN 2391/EN 10305-1 *QA-TUBE*

Approved acc. AD 2000-Merkblatt W0 and certified acc. to
Pressure Equipment Directive (97/23/EC) by
TUEV NORD GmbH; 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 34036