



CERTIFICATE

No. A/10-117193 Rev 00
Date 2010-11-30 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						
709454	Customer order 2010-11-29	Order No. 222694	Subs No. 192993					
003-00991	ITEMS	ABSMT No. 300-33457	ABSMT Dispatch note 23603/54					
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	047466	18047	10	19.0	60.00		
				Total	10	19.0	60.00	
KEY TO HEAT								
Heat Code	Heat No.							
047466	524359							
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047466	0.018	0.40	1.72	0.029	0.007	17.26	13.10	2.53
	N							
047466	0.038							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047466	0.017	0.36	1.70	0.021	0.006	17.30	13.20	2.60
	N							
047466	0.048							
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	%	%
18047	Rp0.2	Rp1.0	Rm	A	4D
	329	365	568	53	50
	321	358	568	51	49

Hardness test

Lot	Min	Max
	HRB	HRB
18047	75	77

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 EN 10216-5 TC1 EN 1.4435 TP316/316L CO
LD SMLS NDE 9.53 X 1.65 MM 3/8" X 16 BWG/SWG HT 524359 SS LOT 18047 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.