

**CERTIFICATE****No. A/11-141229 Rev 00**
Date 2011-02-23 Page 1/2INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
709747	Customer order 2011-02-14	Order No. 232708	Subs No. 100954
003-00991 ITEMS		ABSMT No. 300-38226	ABSMT Dispatch note 31513/54
		C.Code 29	

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
Steel making process Electric furnace	

Technical requirements
ASTM A-213-09A AW, ASME SA-213-ED-10 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	M		
03	THT-3R60-12.7-1.24 12.70 X 1.24	047689	95600	15	33.0	90.00		
				Total	15	33.0 90.00		
KEY TO HEAT		KEY TO LOT						
Heat Code	Heat No.	Lot Code	Lot No.					
047689	527148	95600	4848496/1-3					
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047689	0.020	0.37	1.73	0.029	0.009	17.21	13.16	2.52
	N							
047689	0.043							
Chemical composition, product (weight%)								
Lot	C	Si	Mn	P	S	Cr	Ni	Mo
95600	0.021	0.38	1.75	0.026	0.010	17.15	13.29	2.53
	N							
95600	0.043							
Quality assurance - Ulrik Rodling / QA-manager Tube & Pipe MTC Service / Certificates								

**CERTIFICATE****No. A/11-141229****Rev 00****Date 2011-02-23****Page 2/2****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
95600	255	296	570	51	54

Hardness test

Lot	Min	Max
	HRB	HRB
95600	75	75

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 1.4
435 COLD SMLS NDE 12.70 X 1.24 MM 1/2" X 18 BWG/SWG HT 527148 SZ LOT 4848496/
1-3 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; 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 A110139