

**CERTIFICATE****No. A/11-133004****Rev 00****Date 2011-01-27****Page 1/2**INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
709671	Customer order 2011-01-27	Order No. 230128	Subs No. 198903	ABSMT Dispatch note 28712/54
003-00991	ITEMS	ABSMT No. 300-37061	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
01	THT-3R60-19.05-1.24 19.05 X 1.24	527380	24131	5	16.0	30.00
				Total	5	16.0 30.00

TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
527380	0.016	0.39	1.70	0.029	0.008	17.31	13.14	2.54
N								
527380	0.038							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
527380	0.020	0.40	1.71	0.029	0.007	17.40	13.09	2.54
N								
527380	0.030							

Quality assurance - Per Eriksson/ QA-manager Tube & Pipe
MTC Service / Certificates

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
24131	298	339	585	50	48
	294	336	587	50	48

Hardness test

Lot	Min	Max
	HRB	HRB
24131	74	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 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 EN 1.4435 TP316/316L CO LD SMLS NDE 19.05 X 1.24 MM 3/4'' X 18 BWG/SWG HT 527380 SS LOT 24131 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.