

**CERTIFICATE****No. A/13-313379 Rev 00**
Date 2013-02-12 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
712406	Customer order 2013-02-04	Order No. Subs No. ABSMT Dispatch note 320155 543684 41786/54 ABSMT No. C.Code 300-80341 15
003-00991 ITEMS		

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

Technical requirements
ASTM A-213-11A AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-10 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-3R60-16-2			534366	53650	20	86.0	120.00
	16.00 X 2.00							
Total						20	86.0	120.00
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534366	0.021	0.48	1.65	0.031	0.009	17.30	13.15	2.55
	N							
534366	0.042							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534366	0.020	0.48	1.66	0.031	0.008	17.23	13.19	2.56
	N							
534366	0.042							
Tensile test at room temperature								
Yield strength			Tensile strength		Elongation			
	MPa	MPa		MPa	%	%		
Lot	Rp0.2	Rp1.0		Rm	A	2"		
53650	298	339		570	56	56		

Quality assurance - Per Eriksson / QA-manager
MTC Service / Certificates

**Hardness test**

	Min	Max
Lot	HRB	HRB
53650	77	78

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 at min 1040° C.

Marking:

SANDVIK 3R60 ASTM/ASME A/SA-213AW A-269 EN 10216-5 TC1 EN 10305-1 EN 1.4435 TP 316/316L COLD SMLS NDE 16.00 X 2.00 MM HT 534366 SS LOT 53650 MADE BY SANDVIK IN SWEDEN *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

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 9001:2008.

The certificate is produced with EDP and valid without signature.