



CERTIFICATE

No. A/13-355798

Rev 00

Date 2013-08-22

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INSPECTION CERTIFICATE acc to
EN 10 204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
713110/Holmgren	Customer order 2013-08-21	Order No. 341898	Subs No. 555855	ABSMT Dispatch note 05453/54
003-00991	ITEMS	ABSMT No. 300-90665	C.Code 15	

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

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
02	THT-3R60-18-1.5 18.00 X 1.50	536225	16653	8	30.0	48.00
				Total	8	30.0 48.00

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
536225	0.021	0.38	1.65	0.027	0.008	17.20	13.07	2.52
	N							
536225	0.039							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
536225	0.022	0.37	1.65	0.027	0.008	17.26	13.08	2.52
	N							
536225	0.045							

Quality assurance - Ulrik Rodling / QA-manager
MTC Service / Certificates

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
16653	271	311	583	52	52
	273	313	586	52	52

Hardness test

Lot	Min	Max
	HRB	HRB
16653	74	76

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:

In process annealed acc to ASTM A484

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 18.00 X 1.50 MM HT 536225 SS LOT 16653 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.