



CERTIFICATE

No. A/12-234992

Rev 00

Date 2012-03-12

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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	
711209	Customer order 2012-03-12	Order No. 283329	Subs No. 522456
003-00991	ITEMS	ABSMT No. 300-62010	C.Code 15
		ABSMT Dispatch note 17177/54	

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

Technical requirements
 ASTM A-213-10A 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-3R60-6-1 6.00 X 1.00	047826	97428	65	50.0	390.00		
				Total	65	50.0	390.00	
KEY TO HEAT				KEY TO LOT				
Heat Code	Heat No.		Lot Code	Lot No.				
047826	530450		97428	362434				
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047826	0.020	0.40	1.60	0.031	0.009	17.25	13.15	2.53
	N							
047826	0.040							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047826	0.022	0.41	1.59	0.032	0.009	17.39	13.17	2.54
	N							
047826	0.036							

Quality assurance - Per Eriksson / 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	4D
97428	310	346	619	70	48
	323	340	631	65	50

Hardness test

Lot	Min	Max
	HRB	HRB
97428	78	80

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 10305-1 TP 316/TP 316L EN 1.4435 M S PK1 NDE 6.00 X 1.00 MM HT 530450 SC LOT 362434 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.

The certificate is produced with EDP and valid without signature.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 00044963