



CERTIFICATE

No. V/11-079333

Rev 00

Date 2011-10-11

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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 710612	Sandvik References Order No. Subs No. Dispatch note 263265 112040 111796 Suppl. No C.Code 112040 15
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Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING Steel making process Electric furnace	Steel/material Designations Sandvik SS 3R60 2353 AISI AFNOR TP316/TP316L Z2CND17-13 W.nr DIN 1.4435 X 2 CRNIMO 18 14 3 EN no 1.4435
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Technical requirements
 PED/23/EC, EN 10216-5 TC1
 SS 219711, DIN 17458 TC1, NFA 49-117-09/85
 ASTM A-213-09A AW, ASME SA-213-ED-10 AW, ASTM A-269-08
 NACE MR0175/ISO 15156-3:2009, HRB Max 80

EXTENT OF DELIVERY									
	It	Product designation	Heat	Lot	Kg	M			
	01	THT-3R60-6-1 6.00 X 1.00	047728	96084	37.5	300.00			
				Total	37.5	300.00			
KEY TO HEAT					KEY TO LOT				
	Heat Code	Heat No.			Lot Code	Lot No.			
	047728	527905			96084	357555			
TEST RESULTS									
Chemical composition (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
047728	0.017	0.41	1.65	0.033	0.008	17.26	13.07	2.54	
	N								
047728	0.044								
Chemical composition, product (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
047728	0.017	0.42	1.65	0.031	0.008	17.18	13.07	2.51	
	N								
047728	0.041								

Quality assurance - Ulrik Rodling / QA-manager Tube & Pipe
MTC Service / Certificates

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation
	MPa	MPa	MPa	%
96084	Rp0.2	Rp1.0	Rm	A
	285	317	594	59
	291	327	607	60

Hardness test

Lot	Min	Max
	HRB	HRB
96084	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
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- 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 NFA 49-117 EN 10216-5 TC1 SS 2353-22 W NR 1.4435 TP 316/TP 316L Z2CND17-13 EN 1.4435 M S PK1 NDE 6.00 X 1.00 MM HT 52 7905 SC LOT 357555 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 00042834