



CERTIFICATE

No. V/11-079334 Rev 00
Date 2011-10-11 Page 1/2

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
02	THT-3R60-8-1.5 8.00 X 1.50	047772	96546	7.3	30.00
Total				7.3	30.00

KEY TO HEAT		KEY TO LOT	
Heat Code	Heat No.	Lot Code	Lot No.
047772	528279	96546	170372

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047772	0.019	0.38	1.65	0.027	0.008	17.35	13.21	2.52
	N							
047772	0.039							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047772	0.019	0.38	1.64	0.030	0.006	17.45	13.18	2.54
	N							
047772	0.034							

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	%	%
	Rp0.2	Rp1.0	Rm	A	4D
96546	235	276	583	46	44
	234	275	581	46	44
	234	274	583	46	44
	236	278	584	46	44
	239	282	590	46	44

Hardness test

Lot	Min	Max
	HRB	HRB
96546	54	59

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 8.00 X 1.50 MM HT 52 8279 SG LOT 170372 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 36606