

**CERTIFICATE****No. A/12-215958****Rev 00****Date 2012-01-02****Page 1/2**INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
710593	Customer order 2011-10-05	Order No. 262694	Subs No. 511729
		ABSMT No. 300-52291	ABSMT Dispatch note 10624/54
003-00991	ITEMS	C.Code 15	

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	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
Steel making process	
Electric furnace	

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 AD-11A AW, ASTM A-269-08 NACE MR0175/ISO 15156-3:2009, HRB Max 80

EXTENT OF DELIVERY								
It	Product designation	Heat	Lot	Pieces	Kg	M		
01	THT-3R60-14-2 14.00 X 2.00	047801	97106	15	53.0	90.00		
				Total	15	53.0 90.00		
KEY TO HEAT		KEY TO LOT						
Heat Code	Heat No.	Lot Code	Lot No.					
047801	529618	97106	361068					
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047801	0.020	0.50	1.67	0.027	0.010	17.28	13.11	2.52
	N							
047801	0.045							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047801	0.020	0.50	1.66	0.027	0.009	17.18	13.13	2.50
	N							
047801	0.038							
Quality assurance - Ulrik Rodling / QA-manager Tube & Pipe								
MTC Service / Certificates								

**CERTIFICATE****No. A/12-215958****Rev 00****Date 2012-01-02****Page 2/2****Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
97106	260	298	592	60	60
	257	293	591	60	60

Hardness test

Lot	Min	Max
	HRB	HRB
97106	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
- 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 14.00 X 2.00 MM HT 5
29618 SC LOT 361068 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 00044434