

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		
709804	Customer order 2011-03-01	Order No.	Subs No.	ABSMT Dispatch note
		234905	102772	32114/54
		ABSMT No.	C.Code	
003-00991	ITEMS	300-39353	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 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-3R60-16-1.5 16.00 X 1.50	047689	95580	10	33.0	60.00		
				Total	10	33.0 60.00		
KEY TO HEAT			KEY TO LOT					
Heat Code	Heat No.	Lot Code	Lot No.					
047689	527148	95580	4848369/1-1					
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047689	0.020	0.37	1.73	0.029	0.009	17.21	13.16	2.52
	N							
047689	0.043							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047689	0.018	0.38	1.75	0.028	0.010	17.10	13.27	2.56
	N							
047689	0.043							
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	%	%
95580	Rp0.2	Rp1.0	Rm	A	2"
	253	286	571	55	50
	266	283	571	57	56

Hardness test

Lot	Min	Max
	HRB	HRB
95580	73	74

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 16.00 X 1.50 MM HT 5 27148 SZ LOT 4848369/1-1 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 A110123