

**CERTIFICATE****No. V/11-062174 Rev 00**
Date 2011-02-18 Page 1/2INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References	Sandvik References
709763	Order No. Subs No. Dispatch note 233172 101359 104222 Suppl. No C.Code 101359 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	Kg	M
01	THT-3R60-6-1 6.00 X 1.00	527380	25115	37.5	300.00
Total				37.5	300.00

TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
527380	0.016	0.39	1.70	0.029	0.008	17.31	13.14	2.54
	N							
527380	0.038							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
527380	0.020	0.40	1.71	0.029	0.007	17.40	13.09	2.54
	N							
527380	0.030							

Quality assurance - Per Eriksson/ 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
25115	308	346	564	51	51
	299	337	563	52	52
	305	343	564	50	50
	298	335	563	53	53
	306	344	565	51	51
	311	349	566	51	51

Hardness test

Lot	Min	Max
	HRB	HRB
25115	68	71

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 Z2CND17-13 EN 1.4435 TP316/316L M S PK1 NDE 6.00 X 1.00 MM HT 527380
SS LOT 25115 DIN 2391/EN 10305-1 COLD *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.