

**CERTIFICATE****No. A/10-962447 Rev 00**
Date 2010-05-07 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 708658/Holmgren 003-00991 ITEMS		Customer order 2010-05-07		Sandvik References Order No. Subs No. ABSMT Dispatch note 196418 172738 05299/54 ABSMT No. C.Code 300-21939 15				
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 1.4436/1.4435						
Technical requirements PED/23/EC, EN 10216-5 TC1 SS 219711, DIN 17458 TC1, NFA 49-117-09/85 ASTM A-213-08 AW, ASME SA-213-ED-07 AD-09B AW, ASTM A-269-08 NACE MR0175/ISO 15156-3:2003, HRB Max 80								
EXTENT OF DELIVERY								
It		Product designation	Heat	Lot	Pieces	Kg	M	
02		THT-3R60-35-2	524290	56771	6	59.0	36.00	
		35.00 X 2.00						
Total					6	59.0	36.00	
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
524290	0.016	0.39	1.66	0.031	0.007	17.23	13.16	2.53
	N							
524290	0.048							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
524290	0.015	0.39	1.67	0.029	0.005	17.19	13.11	2.50
	N							
524290	0.044							
Quality assurance - Per Eriksson/ QA-manager Tube & Pipe MTC Service / Certificates								

**CERTIFICATE****No. A/10-962447****Rev 00****Date 2010-05-07****Page 2/2****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
56771	331	374	619	47	43
	368	419	624	46	42

Hardness test

	Min	Max
Lot	HRB	HRB
56771	75	78

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Ring expansion 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 H S PK1 NDE 35.00 X 2.00 MM HT 52429
0 SS LOT 56771 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 GmbH; 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.