

**CERTIFICATE**
No. A/10-112154 Rev 00
Date 2010-11-11 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		Sandvik References	
709378	Customer order 2010-11-10	Order No. 220103	Subs No. 191107
003-00991	ITEMS	ABSMT No. 300-32368	C.Code 15
		ABSMT Dispatch note 22036/54	

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 1.4436/1.4435
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-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		
01	THT-3R60-10-2 10.00 X 2.00	047501	95029	6	14.0	36.00		
				Total	6	14.0 36.00		
KEY TO HEAT			KEY TO LOT					
Heat Code	Heat No.		Lot Code	Lot No.				
047501	525195		95029	351456				
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047501	0.018	0.39	1.65	0.029	0.007	17.24	13.14	2.52
	N							
047501	0.040							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047501	0.020	0.39	1.64	0.028	0.005	17.26	13.08	2.53
	N							
047501	0.040							

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
95029	286	321	594	59	60
	283	314	595	59	58

Hardness test

Lot	Min	Max
	HRB	HRB
95029	79	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 10.00 X 2.00 MM HT 5
25195 SC LOT 351456 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 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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 00040037