



**CERTIFICATE**

**No. A/10-941077**

**Rev 00**

**Date 2010-02-23**

**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		
707980	Customer order 2009-11-04	Order No. 172667	Subs No. 154245	ABSMT Dispatch note 46630/54
003-00991	ITEMS	ABSMT No. 300-11487	C.Code 15	

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	Sandvik SS 3R60 2353 AISI AFNOR TP316/TP316L Z2CND17-13 W.nr DIN 1.4435 X 2 CRNIMO 18 14 3 EN no <b>1.4436/1.4435</b>
<b>Steel making process</b> Electric furnace	

**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
01	THT-3R60-9.53-1.24 9.53 X 1.24	047352	92992	20	31.0	120.00
				Total	20	31.0 120.00

KEY TO HEAT		KEY TO LOT	
Heat Code	Heat No.	Lot Code	Lot No.
047352	523173	92992	349111

**TEST RESULTS**

**Chemical composition (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047352	0.017	0.40	1.72	0.028	0.010	17.25	13.23	2.54
	<b>N</b>							
047352	0.032							

**Chemical composition, product (weight%)**

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
92992	0.018	0.40	1.72	0.030	0.007	17.39	13.29	2.55
	<b>N</b>							
92992	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	%	%
92992	Rp0.2	Rp1.0	Rm	A	4D
	257	291	551	54	52
	269	299	569	55	58

**Hardness test**

Lot	Min	Max
	HRB	HRB
92992	75	76

**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 EN 10216-5 TC1 TP 316/TP 316L EN 1.4435 COLD SMLS NDE 9.53 X 1.24 MM 3/8" X 18 BWG/SWG HT 523173 SC LOT 349111 DIN 2391 \*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 00038880