



**CERTIFICATE**

**No. A/11-185079 Rev 00**  
**Date 2011-08-24 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

<b>Customer References</b>		<b>Sandvik References</b>	
710421	Customer order 2011-08-24	Order No. 257246	Subs No. 509310
003-00991	ITEMS	ABSMT No. 300-49594	ABSMT Dispatch note 47529/54
		C.Code 29	

<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	<b>Steel/material Designations</b> Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
<b>Steel making process</b> Electric furnace	

**Technical requirements**  
 ASTM A-213-09A AW, ASME SA-213-ED-10 AW, ASTM A-269-08  
 NACE MR0175/ISO 15156-3:2009  
 PED 97/23/EC EN 10216-5 TC1  
 HRB MAX 80

**EXTENT OF DELIVERY**

It	Product designation	Heat	Lot	Pieces	Kg	M
02	THT-3R60-25.4-3.20 25.40 X 3.20	528357	27432	4	42.0	24.00
				Total	4	42.0 24.00

**TEST RESULTS**

**Chemical composition (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
528357	0.017	0.38	1.63	0.031	0.008	17.33	13.13	2.53
	N							
528357	0.037							

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
528357	0.017	0.38	1.60	0.030	0.006	17.24	13.04	2.51
	N							
528357	0.033							

**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	%	%
	Rp0.2	Rp1.0	Rm	A	2"
27432	260	298	575	57	64
	261	299	578	56	61

**Hardness test**

Lot	Min	Max
	HRB	HRB
27432	76	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
- 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 EN 1.4435 TP316/316L CO LD SMLS NDE 25.40 X 3.20 MM . HT 528357 SS LOT 27432 DIN 2391/EN 10305-1 \*QA-T UBE\*

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.