



**CERTIFICATE**

**No. A/12-297534**

**Rev 00**

**Date 2012-12-03**

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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>	
712178	Customer order 2012-12-03	Order No. 313898	Subs No. 540033
003-00991	ITEMS	ABSMT No. 300-77098	C.Code 15
		ABSMT Dispatch note 37082/54	

<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC 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-213-10A AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-10  
 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-3R60-10-1 10.00 X 1.00	534137	51139	55	78.0	330.00
				Total	55	78.0 330.00

**TEST RESULTS**  
**Chemical composition (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534137	0.019	0.41	1.70	0.031	0.009	17.28	13.10	2.53
	N							
534137	0.035							

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534137	0.020	0.41	1.70	0.031	0.008	17.32	13.12	2.53
	N							
534137	0.035							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength		Elongation	
	MPa	MPa	MPa		%	%
	Rp0.2	Rp1.0	Rm		A	2"
51139	280	315	562		54	49

**Quality assurance - Per Eriksson / QA-manager**  
**MTC Service / Certificates**

**Hardness test**

	<b>Min</b>	<b>Max</b>
<b>Lot</b>	<b>HRB</b>	<b>HRB</b>
51139	73	75

**Following controls/tests have been satisfactorily performed:**

- Flattening 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 10305-1 EN 1.4435 TP 316/316L COLD SMLS NDE 10.00 X 1.00 MM HT 534137 SS LOT 51139 MADE BY SANDVIK IN SWEDEN \*QA-TUBE\*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

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 9001:2008.

The certificate is produced with EDP and valid without signature.