



**CERTIFICATE**

**No. A/10-959471**

**Rev 00**

**Date 2010-04-27**

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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>	
708606	Customer order 2010-04-27	Order No. 194836	Subs No. 171464
003-00991	ITEMS	ABSMT No. 300-21245	ABSMT Dispatch note 04127/54 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 1.4436/1.4435
<b>Steel making process</b> Electric furnace	

**Technical requirements**  
 ASTM A-213-08 AW, ASME SA-213-ED-07 AD-09B AW, ASTM A-269-08  
 NACE MR0175/ISO 15156-3:2003  
 PED 97/23/EC EN 10216-5 TC1  
 HRB MAX 80

<b>EXTENT OF DELIVERY</b>								
<b>It</b>	<b>Product designation</b>	<b>Heat</b>	<b>Lot</b>	<b>Pieces</b>	<b>Kg</b>	<b>M</b>		
01	THT-3R60-12.7-1.24 12.70 X 1.24	047351	92906	20	43.0	120.00		
				<b>Total</b>	20	43.0	120.00	
<b>KEY TO HEAT</b>				<b>KEY TO LOT</b>				
<b>Heat Code</b>	<b>Heat No.</b>		<b>Lot Code</b>		<b>Lot No.</b>			
047351	523635		92906		4844268/1-2			
<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
<b>Heat</b>	<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Cr</b>	<b>Ni</b>	<b>Mo</b>
047351	0.018	0.36	1.61	0.031	0.008	17.22	13.09	2.66
	<b>N</b>							
047351	0.037							
<b>Chemical composition, product (weight%)</b>								
<b>Lot</b>	<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Cr</b>	<b>Ni</b>	<b>Mo</b>
92906	0.019	0.34	1.64	0.031	0.009	17.25	13.14	2.66
	<b>N</b>							
92906	0.039							

**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	2"
92906	278	324	572	55	54
	290	331	565	55	53

**Hardness test**

Lot	Min	Max
	HRB	HRB
92906	75	77

**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 ASTM A-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 12.70 X 1.24 MM 1/2" X 18 BWG/SWG HT 523635 SZ LOT 4844268 /1-2 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 A100050