



**CERTIFICATE**

**No. A/12-294632 Rev 00**  
**Date 2012-11-20 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>	
712126	Customer order 2012-11-20	Order No. 312554	Subs No. 539287
003-00991	ITEMS	ABSMT No. 300-76472	C.Code 11
		ABSMT Dispatch note 36180/54	

<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	<b>Steel/material Designations</b> Sandvik AISI 3R60 TP316/TP316L
<b>Steel making process</b> Electric furnace	

<b>Technical requirements</b> ASTM A-632-04 NACE MR0175/ISO 15156-3:2009 PED 97/23/EC EN 10216-5 TC1 HRB MAX 80
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<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-3R60-1.59-0.36 1.59 X .36	047805	97970	1	1.0	6.00		
				<b>Total</b>	<b>1</b>	<b>1.0 6.00</b>		
<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>				
047805	529612		97970	173429				
<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>
047805	0.019	0.38	1.64	0.027	0.009	17.38	13.10	2.53
	<b>N</b>							
047805	0.033							
<b>Chemical composition, product (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>
047805	0.020	0.38	1.64	0.028	0.007	17.24	13.06	2.52
	<b>N</b>							
047805	0.031							

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

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation
	MPa	MPa	MPa	%
97970	Rp0.2	Rp1.0	Rm	A
	242	274	523	52

**Hardness test**

Lot	Min	Max
	HRB	HRB
97970	73	76

**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
- Visual inspection and dimensional control.

**Heat Treatment:**

Solution annealed and quenched.

**Marking:**

SANDVIK 3R60 ASTM A-632 TP 316/316L EN 10216-5 TC1 MS PK1 WNR 1.4435 EN 1.4435 COLD SMLS 1.59 X 0.36 MM 1/16'' X 28 BWG HT 529612 SG LOT 173429 \*QA-TU BE\*

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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 39589