



**CERTIFICATE**

**No. A/14-414773**

**Rev 00**

**Date 2014-04-23**

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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>	
750374	Customer order 2014-04-16	Order No. 367093	Subs No. 570177
003-00991	ITEMS	ABSMT No. 300-12482	C.Code 11
		ABSMT Dispatch note 22126/54	

<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC 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-3R60-3-0.7 3.00 X .70	047992	98956	4	1.0	24.00			
				<b>Total</b>	<b>4</b>	<b>1.0</b>	<b>24.00</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>		
047992		536843			98956		176791		
<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>	
047992	0.019	0.38	1.63	0.026	0.008	17.31	13.13	2.52	
	<b>N</b>								
047992	0.041								
<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>	
047992	0.018	0.37	1.62	0.027	0.007	17.30	13.12	2.51	
	<b>N</b>								
047992	0.038								

**Quality assurance - Lars-Åke Bergqvist / QA-manager**  
**MTC Service / Certificates**

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
98956	247	290	542	60	53
	241	287	543	60	52

**Hardness test**

Lot	Min	Max
	HRB	HRB
98956	71	73

**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 3.00 X 0.70 MM \*\*SAKNAS\*\* HT 536843 SG LOT 176791 \*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.

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of AB Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 43852