



**CERTIFICATE**

**No. A/17-682905**

**Rev 00**

**Date 2017-09-07**

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INSPECTION CERTIFICATE acc to  
EN 10204 3.1

Processkontroll Items AB  
Box 2088  
444 02 STORA H@GA  
SWEDEN

INSPECTION STAMP  
QA-TUBE

<b>Customer References</b>		<b>Sandvik References</b>	
755110	Customer order 2017-06-22	Order No. 482635	Subs No. 632248
003-00991	ITEMS	ABSMT No. 300-65266	ABSMT Dispatch note 03420/54 C.Code 15

<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-213-17 AW, ASME SA-213-ED-15 AW, ASTM A-269-15A  
 NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17945:2015  
 PED 2014/68/EU 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>		
02	THT-3R60-8-1 8.00 X 1.00	048480	95648	15	16.0	90.00		
				<b>Total</b>	15	16.0	90.00	
<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>				
048480	548884		95648	393956				
<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>
048480	0.021	0.39	1.61	0.030	0.010	17.23	13.09	2.63
	<b>N</b>							
048480	0.036							

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

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

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
95648	0.021	0.39	1.61	0.031	0.010	17.41	13.15	2.65
	N							
95648	0.041							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	4D
95648	308	340	617	53	48
	315	348	625	53	48

**Hardness test**

Lot	Min	Max
	HRB	HRB
95648	80	80

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

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- Leak test: Eddy current test acc to EN ISO 10893-1, ASME SA-1016.
- Visual inspection and dimensional control.

**Heat Treatment:**

Solution annealed at a temperature of Min 1040° C and quenched.

**Marking:**

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 TP 316/TP 316L EN 1.4435 COLD SML NDE 8.00 X 1.00 MM \*\*SAKNAS\*\* HT 548884 SC LOT 393956 MADE BY SANDVIK \*QA-TUBE\*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU, Annex 1 para 4.3) 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 00057494