



**CERTIFICATE**

**No. A/17-638696**

**Rev 00**

**Date 2017-02-18**

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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>		
754469	Customer order 2017-02-02	Order No. 468124	Subs No. 624061	ABSMT Dispatch note 39409/54
003-00991	ITEMS	ABSMT No. 300-58409	C.Code 15	

<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	<b>Steel/material Designations</b> Sandvik 3R60 EN no 1.4435
<b>Steel making process</b> Electric furnace	AISI TP316/TP316L

<b>Technical requirements</b> ASTM A-213-15C 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
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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-3R60-6-1 6.00 X 1.00	048315	21761	60	45.0	360.00		
				<b>Total</b>	60	45.0	360.00	
<b>KEY TO HEAT</b>								
<b>Heat Code</b>	<b>Heat No.</b>							
048315	546262							
<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>
048315	0.021	0.36	1.59	0.029	0.0060	17.29	13.20	2.67
	<b>N</b>							
048315	0.047							

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

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048315	0.020	0.36	1.56	0.027	0.006	17.31	13.20	2.62
	N							
048315	0.048							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	4D
21761	314	349	590	92	54

**Hardness test**

Lot	Min	Max
	HRB	HRB
21761	61	63

**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 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 AW EN 1.44  
35 TP316/316L CFA SML NDE 6.00 X 1.00 MM HT 546262 SS LOT 21761 MADE IN SWEDEN  
\*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.



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The certificate is produced with EDP and valid without signature.