



CERTIFICATE

A03/Z02  
No. A/19-853634 Rev 00  
Date 2019-10-29 Page 1/3

A02/Z03  
INSPECTION CERTIFICATE acc to  
EN 10204 3.1

A06  
PROCESSKONTROLL ITEMS AB  
BOX 2088  
444 02 STORA HÖGA  
SWEDEN

INSPECTION STAMP  
QA-TUBE

<b>Customer References</b>	<b>A07</b>	<b>Sandvik References</b>	<b>A08</b>
758659/Holmgren	Customer order 2019-10-29	Order No. Subs No. ABSMT Dispatch note 544570 676706 06765/54	
003-00991 ITEMS		ABSMT No. C.Code 300-13017 15	

<b>Material description</b>	<b>B01/B04</b>	<b>Steel/material Designations</b>	<b>B02</b>
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING		Sandvik AISI 3R60 TP316/TP316L EN no 1.4435	
Steel making process Electric furnace	<b>C70</b>		

<b>Technical requirements</b>	<b>B03</b>
ASTM A-213-18B AW, ASME SA-213-ED-17 AW, ASTM A-269-15A NACE MR0175/ISO 15156-3:-2015, NACE MR0103/ISO 17945-1:-2015 PED 2014/68/EU EN 10216-5 TC1 HRB MAX 80	

<b>EXTENT OF DELIVERY</b>							<b>B07-B13</b>	
It	Product designation	Heat	Lot	Pieces	Kg	M		
02	THT-3R60-12-1	556540	17817	58	98.0	348.00		
	12.00 X 1.00	556540	17819	12	20.0	72.00		
			Total	70	118.0	420.00		
<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556540	0.017	0.41	1.63	0.032	0.010	17.46	13.17	2.64
	Co	N						
556540	0.098	0.038						
<b>Chemical composition, product (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556540	0.022	0.43	1.62	0.033	0.011	17.46	13.14	2.65
	N							
556540	0.040							

<b>Quality assurance - Sofia Åkesson / Q-Manager</b>	<b>A05/Z02</b>
<b>MTC Service / Certificates</b>	



**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPA	MPa	MPa	%	%
	<b>Rp0.2</b>	<b>Rp1.0</b>	<b>Rm</b>	<b>A</b>	<b>2"</b>
17817	292	328	574	47	43
17819	295	333	581	47	44

**Hardness test**

Lot	Min	Max
	HRB	HRB
17817	75	77
17819	74	76

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

- Flattening test.
- Flaring test
- 100% 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 AW EN 1.4435 TP316/3 16L CFA SML NDE 12.00 X 1.00 MM HT 556540 SS LOT 17817 MADE IN SWEDEN \*QA-TUBE \*

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4435 TP316/3 16L CFA SML NDE 12.00 X 1.00 MM HT 556540 SS LOT 17819 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 9001:2015.





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The certificate is produced with EDP and valid without signature.

