



CERTIFICATE

A03/Z02  
No. A/19-844243 Rev 00  
Date 2019-09-13 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>
758376	Customer order 2019-09-11	Order No. 542179 ABSMT No. 300-11174	Subs No. 674770 C.Code 15
003-00991	ITEMS	ABSMT Dispatch note 03563/54	

<b>Material description</b>	<b>B01/B04</b>	<b>Steel/material Designations</b>	<b>B02</b>
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING		Sandvik 3R60 EN no 1.4435	AISI TP316/TP316L
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-3R60-8-1	555319	57984	18	19.0	108.00		
	8.00 X 1.00	555673	59685	7	7.0	42.00		
				<b>Total</b>	<b>25</b>	<b>26.0</b>	<b>150.00</b>	
<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
555319	0.018	0.38	1.81	0.033	0.009	17.37	13.06	2.64
555673	0.016	0.40	1.54	0.032	0.008	17.20	13.09	2.64
	<b>N</b>							
555319	0.032							
555673	0.040							

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



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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
555319	0.018	0.36	1.80	0.032	0.005	17.34	13.00	2.63
555673	0.023	0.40	1.54	0.033	0.009	17.23	13.04	2.66
<b>N</b>								
555319	0.039							
555673	0.042							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength MPa Rm	Elongation	
	MPa Rp0.2	MPa Rp1.0		% A	% 4D
57984	304	333	570	50	48
59685	322	361	580	49	48

**Hardness test**

Lot	Min	Max
	HRB	HRB
57984	74	76
59685	75	77

**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 8.00 X 1.00 MM HT 555319 SS LOT 57984 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 8.00 X 1.00 MM HT 555673 SS LOT 59685 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.

