



CERTIFICATE

A03/Z02  
 No. A/19-851738 Rev 00  
 Date 2019-10-21 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> <span style="float: right;">A07</span> Customer order 758616/Holmgren 2019-10-21 003-00991 ITEMS	<b>Sandvik References</b> <span style="float: right;">A08</span> Order No. Subs No. ABSMT Dispatch note 544177 676395 06183/54 ABSMT No. C.Code 300-12741 15
---	--

<b>Material description</b> <span style="float: right;">B01/B04</span> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING  Steel making process <span style="float: right;">C70</span> Electric furnace	<b>Steel/material Designations</b> <span style="float: right;">B02</span> Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
---	---

<b>Technical requirements</b> <span style="float: right;">B03</span> 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> <span style="float: right;">B07-B13</span>								
It	Product designation	Heat	Lot	Pieces	Kg	M		
01	THT-3R60-10-1	556635	16846	62	89.0	372.00		
	10.00 X 1.00	556768	16847	8	12.0	48.00		
			Total	70	101.0	420.00		
<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556635	0.018	0.38	1.62	0.031	0.010	17.22	13.15	2.62
556768	0.020	0.37	1.64	0.031	0.013	17.19	13.11	2.63
	Co	N						
556635	0.13	0.037						
556768	0.11	0.034						
<b>Chemical composition, product (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556768	0.020	0.38	1.64	0.031	0.013	17.27	13.16	2.65
	N							
556768	0.033							

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





Lot	C	Si	Mn	P	S	Cr	Ni	Mo
16846	0.020	0.38	1.63	0.032	0.011	17.25	13.20	2.62
	<b>N</b>							
16846	0.040							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	4D
16846	317	349	579	51	47
16847	323	356	578	51	48

**Hardness test**

Lot	Min	Max
	HRB	HRB
16846	76	78
16847	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 10.00 X 1.00 MM HT 556635 SS LOT 16846 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 10.00 X 1.00 MM HT 556768 SS LOT 16847 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.





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.

