



CERTIFICATE

A03/Z02  
 No. V/19-009300 Rev 00  
 Date 2019-10-17 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> A07	<b>Sandvik References</b> A08
Rolf Söderström	Order No. Subs No. Dispatch note 543850 169033 189855 Suppl. No C.Code 169033 15

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

<b>Technical requirements</b> B03
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>							B07-B13	
<b>It</b>	<b>Product designation</b>	<b>Heat</b>	<b>Lot</b>	<b>Kg</b>	<b>M</b>			
01	THT-3R60-20-2.5 20.00 X 2.50	555938	59433	433.8	396.00			
Total				433.8	396.00			
<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>
555938	0.019	0.47	1.54	0.032	0.009	17.22	13.13	2.66
	<b>Co</b>	<b>N</b>						
555938	0.10	0.032						
<b>Chemical composition, product (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>
555938	0.018	0.46	1.55	0.032	0.008	17.25	13.14	2.66
	<b>Co</b>	<b>N</b>						
555938	0.10	0.039						

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



**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPA	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
59433	264	299	587	55	58
	268	304	589	54	58
	266	301	589	53	58
	267	303	587	58	61

**Hardness test**

Lot	Min	Max
	HRB	HRB
59433	77	78

**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 20.00 X 2.50 MM HT 555938 SS LOT 59433 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.

