



CERTIFICATE

A03/Z02

No. A/21-987724

Rev 00

Date

2021-12-22

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> 761910  Customer order 2021-11-24  003-00991 ITEMS -W	<b>Sandvik References</b> <span style="float: right;">A08</span> Order No. Subs No. SMT Dispatch note 578848 704780 04019/54 SMT No. C.Code 300-38077 15
---	--

<b>Material description</b> <span style="float: right;">B01/B04</span> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING  <b>Metallurgical process</b> <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-213-19 AW, ASME SA-213-ED-19 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-3R60-16-1.5	041202	93041	1	3.0	6.00
	16.00 X 1.50	041675	93985	9	29.0	54.00
	10777					
				Total	10	32.0 60.00
<b>KEY TO HEAT</b>			<b>KEY TO LOT</b>			
Heat Code	Heat No.	Lot Code		Lot No.		
041202	561936	93041		2026419-11		
041675	562952	93985		2038282-11		
<b>TEST RESULTS</b>						
<b>Chemical composition (weight%)</b>						
Heat	C	Si	Mn	P	S	Cr Ni Mo
041202	0.021	0.39	1.72	0.030	0.009	17.23 13.11 2.64
041675	0.018	0.48	1.70	0.030	0.008	17.41 13.12 2.62
	N					
041202	0.033					
041675	0.035					

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

A01



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

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
93041	0.020	0.38	1.72	0.029	0.009	17.35	12.80	2.55
93985	0.019	0.48	1.71	0.032	0.006	17.31	12.97	2.53
	<b>N</b>							
93041	0.046							
93985	0.039							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
93041	263	300	565	59	61
93985	244	280	558	63	64
	237	273	553	63	63

**Hardness test**

Lot	Min	Max
	HRB	HRB
93041	72	72
93985	68	70

**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/ASME A/SA213 A269 COLD EN 10216-5 TC1 AW TP 316/TP 316L EN 1.4435 CFA SML 16.00 X 1.50 MM \*\*SAKNAS\*\* HT 561936 SZ LOT 2026419-11 MADE BY SANDVIK IN CZECHIA \*QA-TUBE\*

SANDVIK 3R60 ASTM/ASME A/SA213 A269 COLD EN 10216-5 TC1 AW TP 316/TP 316L EN 1.4435 CFA SML 16.00 X 1.50 MM \*\*SAKNAS\*\* HT 562952 SZ LOT 2038282-11 MADE BY SANDVIK IN CZECHIA \*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 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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO C-1454/50  
C-2800/20

