

**CERTIFICATE**

A03/Z02

No. A/20-927769**Date**

2020-12-07

Rev**Page****00**

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

Customer References A07 760386 Customer order 2020-12-02 003-00991 ITEMS -W		Sandvik References A08 Order No. Subs No. ABSMT Dispatch note 563079 691829 29597/54 ABSMT No. C.Code 300-26524 15																																																																																			
Material description B01/B04 SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING Metallurgical process C70 Electric furnace		Steel/material Designations B02 Sandvik AISI 3R60 TP316/TP316L EN no 1.4435																																																																																			
Technical requirements B03 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																																																																																					
EXTENT OF DELIVERY B07-B13 <table><thead><tr><th>It</th><th>Product designation</th><th>Heat</th><th>Lot</th><th>Pieces</th><th>Kg</th><th>M</th></tr></thead><tbody><tr><td>02</td><td>THT-3R60-12-1.5</td><td>560173</td><td>32312</td><td>10</td><td>25.0</td><td>60.00</td></tr><tr><td></td><td>12.00 X 1.50</td><td>559272</td><td>32318</td><td>15</td><td>36.0</td><td>90.00</td></tr><tr><td colspan="4">Total</td><td>25</td><td>61.0</td><td>150.00</td></tr></tbody></table> TEST RESULTS Chemical composition (weight%) <table><thead><tr><th>Heat</th><th>C</th><th>Si</th><th>Mn</th><th>P</th><th>S</th><th>Cr</th><th>Ni</th><th>Mo</th></tr></thead><tbody><tr><td>559272</td><td>0.021</td><td>0.36</td><td>1.62</td><td>0.036</td><td>0.008</td><td>17.27</td><td>13.02</td><td>2.61</td></tr><tr><td>560173</td><td>0.019</td><td>0.42</td><td>1.70</td><td>0.030</td><td>0.009</td><td>17.18</td><td>13.09</td><td>2.62</td></tr><tr><td colspan="9">N</td></tr><tr><td>559272</td><td>0.043</td><td colspan="7"></td></tr><tr><td>560173</td><td>0.044</td><td colspan="7"></td></tr></tbody></table>				It	Product designation	Heat	Lot	Pieces	Kg	M	02	THT-3R60-12-1.5	560173	32312	10	25.0	60.00		12.00 X 1.50	559272	32318	15	36.0	90.00	Total				25	61.0	150.00	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	559272	0.021	0.36	1.62	0.036	0.008	17.27	13.02	2.61	560173	0.019	0.42	1.70	0.030	0.009	17.18	13.09	2.62	N									559272	0.043								560173	0.044							
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Quality assurance - Sofia Åkesson / Q-Manager A05/Z02 MTC Service / Certificates																																																																																					

A01

AB SANDVIK MATERIALS TECHNOLOGY Reg No. 556234-6832 VAT No. SE556234683201
SE-81181 SANDVIKEN SWEDEN www.materials.sandvik mtc_service.smt@sandvik.com

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
559272	0.019	0.37	1.62	0.036	0.007	17.26	13.03	2.61
560173	0.026	0.42	1.69	0.028	0.006	17.20	13.12	2.60
N								
559272	0.044							
560173	0.041							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa		%	%
	Rp0.2	Rp1.0	Rm	A	2"
32312	278	312	591	53	52
32318	296	333	580	54	51

Hardness test

Lot	Min	Max
	HRB	HRB
32312	70	74
32318	77	80

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 1.50 MM HT 560173 SS LOT 32312 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 1.50 MM HT 559272 SS LOT 32318 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.

