

**CERTIFICATE**

A03/Z02

No. A/21-971806**Date**

2021-09-14

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 761598 Customer order 2021-09-13 003-00991 ITEMS -W		Sandvik References A08 Order No. Subs No. SMT Dispatch note 575514 702115 44852/54 SMT No. C.Code 300-35659 29																																																																														
Material description B01/B04 SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION 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>01</td><td>THT-3R60-12.7-1.24</td><td>041300</td><td>93268</td><td>16</td><td>34.0</td><td>96.00</td></tr><tr><td></td><td>12.70 X 1.24</td><td>041316</td><td>93283</td><td>2</td><td>5.0</td><td>12.00</td></tr><tr><td colspan="4"></td><td>Total</td><td>39.0</td><td>108.00</td></tr></tbody></table> <table><thead><tr><th colspan="2">KEY TO HEAT</th><th colspan="2">KEY TO LOT</th></tr><tr><th>Heat Code</th><th>Heat No.</th><th>Lot Code</th><th>Lot No.</th></tr></thead><tbody><tr><td>041300</td><td>561993</td><td>93268</td><td>2029932-11</td></tr><tr><td>041316</td><td>561993</td><td>93283</td><td>2029572-11</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>041300</td><td>0.018</td><td>0.46</td><td>1.62</td><td>0.030</td><td>0.009</td><td>17.41</td><td>13.09</td><td>2.65</td></tr><tr><td>041316</td><td>0.018</td><td>0.46</td><td>1.62</td><td>0.030</td><td>0.009</td><td>17.41</td><td>13.09</td><td>2.65</td></tr></tbody></table> <table><thead><tr><th></th><th>N</th></tr></thead><tbody><tr><td>041300</td><td>0.039</td></tr><tr><td>041316</td><td>0.039</td></tr></tbody></table>				It	Product designation	Heat	Lot	Pieces	Kg	M	01	THT-3R60-12.7-1.24	041300	93268	16	34.0	96.00		12.70 X 1.24	041316	93283	2	5.0	12.00					Total	39.0	108.00	KEY TO HEAT		KEY TO LOT		Heat Code	Heat No.	Lot Code	Lot No.	041300	561993	93268	2029932-11	041316	561993	93283	2029572-11	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	041300	0.018	0.46	1.62	0.030	0.009	17.41	13.09	2.65	041316	0.018	0.46	1.62	0.030	0.009	17.41	13.09	2.65		N	041300	0.039	041316	0.039
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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%)**

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
93268	0.018	0.45	1.67	0.029	0.009	17.43	12.94	2.62
93283	0.020	0.45	1.70	0.032	0.011	17.25	12.83	2.63
	N							
93268	0.046							
93283	0.047							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
93268	284	322	596	62	55
	289	329	608	57	53
93283	285	321	590	61	58
	284	318	589	61	58

Hardness test

Lot	Min	Max
	HRB	HRB
93268	76	78
93283	76	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/ASME A/SA213 A269 COLD EN 10216-5 TC1 AW TP 316/TP 316L EN 1.4435 CFA SML 12.70 X 1.24 MM 1/2" X 18 BWG/SWG HT 561993 SZ LOT 2029932-11 M ADE 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 12.70 X 1.24 MM 1/2" X 18 BWG/SWG HT 561993 SZ LOT 2029572-11 M ADE 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-2565/40
C-2553/50

