

**CERTIFICATE**

A03/Z02

No. A/22-108150**Date**

2022-05-04

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 762278 Customer order 2022-02-23 003-00991 ITEMS -W		Sandvik References A08 Order No. Subs No. SMT Dispatch note 582767 708093 13303/54 SMT No. C.Code 300-41179 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>01</td><td>THT-3R60-16-2</td><td>042805</td><td>95330</td><td>29</td><td>123.0</td><td>174.00</td></tr><tr><td></td><td>16.00 X 2.00</td><td>042806</td><td>95331</td><td>43</td><td>182.0</td><td>258.00</td></tr><tr><td colspan="4"></td><td>Total</td><td>72</td><td>305.0 432.00</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>042805</td><td>564033</td><td>95330</td><td>2054697-11</td></tr><tr><td>042806</td><td>564033</td><td>95331</td><td>2054698-11</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>042805</td><td>0.019</td><td>0.38</td><td>1.62</td><td>0.030</td><td>0.008</td><td>17.24</td><td>13.09</td><td>2.62</td></tr><tr><td>042806</td><td>0.019</td><td>0.38</td><td>1.62</td><td>0.030</td><td>0.008</td><td>17.24</td><td>13.09</td><td>2.62</td></tr></tbody></table> <table><thead><tr><th></th><th>N</th></tr></thead><tbody><tr><td>042805</td><td>0.034</td></tr><tr><td>042806</td><td>0.034</td></tr></tbody></table>				It	Product designation	Heat	Lot	Pieces	Kg	M	01	THT-3R60-16-2	042805	95330	29	123.0	174.00		16.00 X 2.00	042806	95331	43	182.0	258.00					Total	72	305.0 432.00	KEY TO HEAT		KEY TO LOT		Heat Code	Heat No.	Lot Code	Lot No.	042805	564033	95330	2054697-11	042806	564033	95331	2054698-11	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	042805	0.019	0.38	1.62	0.030	0.008	17.24	13.09	2.62	042806	0.019	0.38	1.62	0.030	0.008	17.24	13.09	2.62		N	042805	0.034	042806	0.034
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Quality assurance - Sofia Åkesson / Q-Manager A05/Z02 MTC Service / Certificates																																																																																

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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
042805	0.018	0.38	1.60	0.029	0.005	17.17	13.02	2.60
042806	0.018	0.38	1.60	0.029	0.005	17.17	13.02	2.60
N								
042805	0.032							
042806	0.032							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
95330	268	300	578	53	54
	278	310	595	52	53
95331	309	335	575	54	55
	276	307	578	54	57

Hardness test

Lot	Min	Max
	HRB	HRB
95330	76	77
95331	76	77

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 2.00 MM . HT 564033 SZ LOT 2054697-11 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 2.00 MM . HT 564033 SZ LOT 2054698-11 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-3422/20
C-3422/20

