

**CERTIFICATE**

A03/Z02

No. A/21-961671**Rev 00****Date**

2021-06-22

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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 761247 Customer order 2021-06-08 003-00991 ITEMS -W	Sandvik References A08 Order No. Subs No. SMT Dispatch note 571696 699089 40715/54 SMT No. C.Code 300-32844 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 border="1" style="width: 100%; border-collapse: collapse;"> <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-3R60-18-2 18.00 X 2.00</td> <td>559973</td> <td>31036</td> <td>10</td> <td>48.0</td> <td>60.00</td> </tr> <tr> <td colspan="4"></td> <td style="text-align: right;">Total</td> <td>10</td> <td>48.0 60.00</td> </tr> </tbody> </table> TEST RESULTS Chemical composition (weight%) <table border="1" style="width: 100%; border-collapse: collapse;"> <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>559973</td> <td>0.020</td> <td>0.39</td> <td>1.61</td> <td>0.033</td> <td>0.009</td> <td>17.39</td> <td>13.12</td> <td>2.63</td> </tr> <tr> <td></td> <td>N</td> <td colspan="7"></td> </tr> <tr> <td>559973</td> <td>0.044</td> <td colspan="7"></td> </tr> </tbody> </table> Chemical composition, product (weight%) <table border="1" style="width: 100%; border-collapse: collapse;"> <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>559973</td> <td>0.020</td> <td>0.40</td> <td>1.60</td> <td>0.034</td> <td>0.006</td> <td>17.44</td> <td>13.20</td> <td>2.65</td> </tr> <tr> <td></td> <td>N</td> <td colspan="7"></td> </tr> <tr> <td>559973</td> <td>0.045</td> <td colspan="7"></td> </tr> </tbody> </table>		It	Product designation	Heat	Lot	Pieces	Kg	M	01	THT-3R60-18-2 18.00 X 2.00	559973	31036	10	48.0	60.00					Total	10	48.0 60.00	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	559973	0.020	0.39	1.61	0.033	0.009	17.39	13.12	2.63		N								559973	0.044								Heat	C	Si	Mn	P	S	Cr	Ni	Mo	559973	0.020	0.40	1.60	0.034	0.006	17.44	13.20	2.65		N								559973	0.045							
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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


**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
31036	282	317	595	50	51
	280	317	594	53	53

Hardness test

Lot	Min	Max
	HRB	HRB
31036	67	69

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 18.00 X 2.00 MM HT 559973 SS LOT 31036 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 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.

