

**CERTIFICATE**

A03/Z02

No. A/20-877791**Date**

2020-02-28

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 759227 Customer order 2020-02-28 003-00991 ITEMS		Sandvik References A08 Order No. Subs No. ABSMT Dispatch note 550577 681677 14279/54 ABSMT No. C.Code 300-17588 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-213-18B AW, ASME SA-213-ED-17 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-3R60-20-2.5</td><td>557862</td><td>21137</td><td>24</td><td>156.0</td><td>144.00</td></tr><tr><td></td><td>20.00 X 2.50</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="4" style="text-align: right;">Total</td><td>24</td><td>156.0</td><td>144.00</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>557862</td><td>0.021</td><td>0.42</td><td>1.59</td><td>0.028</td><td>0.009</td><td>17.28</td><td>13.16</td><td>2.66</td></tr><tr><td></td><td>Co</td><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>557862</td><td>0.12</td><td>0.035</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> Chemical composition, product (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>557862</td><td>0.018</td><td>0.43</td><td>1.58</td><td>0.029</td><td>0.009</td><td>17.30</td><td>13.18</td><td>2.64</td></tr><tr><td></td><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>557862</td><td>0.038</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>				It	Product designation	Heat	Lot	Pieces	Kg	M	02	THT-3R60-20-2.5	557862	21137	24	156.0	144.00		20.00 X 2.50						Total				24	156.0	144.00	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	557862	0.021	0.42	1.59	0.028	0.009	17.28	13.16	2.66		Co	N							557862	0.12	0.035							Heat	C	Si	Mn	P	S	Cr	Ni	Mo	557862	0.018	0.43	1.58	0.029	0.009	17.30	13.18	2.64		N								557862	0.038							
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Quality assurance - Sofia Åkesson / Q-Manager MTC Service / Certificates A05/Z02																																																																																																							

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**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
21137	275	313	594	57	60
	266	304	591	56	59
	271	313	589	51	54

Hardness test

	Min	Max
Lot	HRB	HRB
21137	76	78

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 20.00 X 2.50 MM HT 557862 SS LOT 21137 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.

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