



**CERTIFICATE**

A03/Z02

**No. A/20-881872**

**Rev**

**00**

**Date**

2020-03-19

**Page**

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

<p><b>Customer References</b> <span style="float: right;">A07</span></p> <p>759078</p> <p style="text-align: right;"><b>Customer order</b></p> <p style="text-align: right;">2020-01-30</p> <p>003-00991 ITEMS</p>	<p><b>Sandvik References</b> <span style="float: right;">A08</span></p> <table style="width: 100%;"> <tr> <th>Order No.</th> <th>Subs No.</th> <th>ABSMT</th> <th>Dispatch note</th> </tr> <tr> <td>548804</td> <td>680323</td> <td>15459/54</td> <td></td> </tr> <tr> <th>ABSMT No.</th> <th>C.Code</th> <td colspan="2"></td> </tr> <tr> <td>300-16343</td> <td>15</td> <td colspan="2"></td> </tr> </table>	Order No.	Subs No.	ABSMT	Dispatch note	548804	680323	15459/54		ABSMT No.	C.Code			300-16343	15		
Order No.	Subs No.	ABSMT	Dispatch note														
548804	680323	15459/54															
ABSMT No.	C.Code																
300-16343	15																
<p><b>Material description</b> <span style="float: right;">B01/B04</span></p> <p>SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING</p>  <p><b>Metallurgical process</b> <span style="float: right;">C70</span></p> <p>Electric furnace</p>	<p><b>Steel/material Designations</b> <span style="float: right;">B02</span></p> <table style="width: 100%;"> <tr> <th>Sandvik</th> <th>AISI</th> </tr> <tr> <td>3R60</td> <td>TP316/TP316L</td> </tr> <tr> <th>EN no</th> <td></td> </tr> <tr> <td>1.4435</td> <td></td> </tr> </table>	Sandvik	AISI	3R60	TP316/TP316L	EN no		1.4435									
Sandvik	AISI																
3R60	TP316/TP316L																
EN no																	
1.4435																	

<p><b>Technical requirements</b></p> <p>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</p>	B03
---	-----

<b>EXTENT OF DELIVERY</b>							B07-B13	
It	Product designation	Heat	Lot	Pieces	Kg	M		
01	THT-3R60-16-2 16.00 X 2.00	557937	22032	80	331.0	480.00		
				Total	80	331.0 480.00		
<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
557937	0.020	0.38	1.59	0.029	0.0046	17.64	13.43	2.64
	Co	N						
557937	0.14	0.052						
<b>Chemical composition, product (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
557937	0.019	0.38	1.59	0.030	0.005	17.66	13.41	2.66
	N							
557937	0.050							

<p><b>Quality assurance</b> - Sofia Åkesson / Q-Manager MTC Service / Certificates</p>	A05/Z02
--	---------

A01



**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPA	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
22032	289	324	614	50	51
	286	323	617	50	51
	286	321	610	50	51
	286	320	612	51	52

**Hardness test**

Lot	Min	Max
	HRB	HRB
22032	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 16.00 X 2.00 MM HT 557937 SS LOT 22032 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.

