



**CERTIFICATE**

A03/Z02

**No. A/21-964279**

**Rev 00**

**Date**

2021-07-11

**Page**

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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

<p><b>Customer References</b> <span style="float: right;">A07</span></p> <p>761328 <span style="float: right;"><b>Customer order</b></span></p> <p style="text-align: right;">2021-06-24</p> <p>003-00991 ITEMS -W</p>	<p><b>Sandvik References</b> <span style="float: right;">A08</span></p> <table border="0" style="width: 100%;"> <tr> <td><b>Order No.</b></td> <td><b>Subs No.</b></td> <td><b>SMT Dispatch note</b></td> </tr> <tr> <td>572454</td> <td>699705</td> <td>41794/54</td> </tr> <tr> <td><b>SMT No.</b></td> <td><b>C.Code</b></td> <td></td> </tr> <tr> <td>300-33421</td> <td>15</td> <td></td> </tr> </table>	<b>Order No.</b>	<b>Subs No.</b>	<b>SMT Dispatch note</b>	572454	699705	41794/54	<b>SMT No.</b>	<b>C.Code</b>		300-33421	15	
<b>Order No.</b>	<b>Subs No.</b>	<b>SMT Dispatch note</b>											
572454	699705	41794/54											
<b>SMT No.</b>	<b>C.Code</b>												
300-33421	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 border="0" style="width: 100%;"> <tr> <td><b>Sandvik</b></td> <td><b>AISI</b></td> </tr> <tr> <td>3R60</td> <td>TP316/TP316L</td> </tr> <tr> <td><b>EN no</b></td> <td></td> </tr> <tr> <td>1.4435</td> <td></td> </tr> </table>	<b>Sandvik</b>	<b>AISI</b>	3R60	TP316/TP316L	<b>EN no</b>		1.4435					
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3R60	TP316/TP316L												
<b>EN no</b>													
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<p><b>Technical requirements</b> <span style="float: right;">B03</span></p> <p>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</p>
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<b>EXTENT OF DELIVERY</b> <span style="float: right;">B07-B13</span>								
<b>It</b>	<b>Product designation</b>	<b>Heat</b>	<b>Lot</b>	<b>Pieces</b>	<b>Kg</b>	<b>M</b>		
03	THT-3R60-18-1.5 18.00 X 1.50	040960	92589	6	22.0	36.00		
				Total	6	22.0 36.00		
<b>KEY TO HEAT</b>			<b>KEY TO LOT</b>					
<b>Heat Code</b>	<b>Heat No.</b>			<b>Lot Code</b>	<b>Lot No.</b>			
040960	561432			92589	2020408-11			
<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
<b>Heat</b>	<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Cr</b>	<b>Ni</b>	<b>Mo</b>
040960	0.021	0.43	1.65	0.033	0.008	17.42	13.16	2.65
		<b>N</b>						
040960	0.039							

<p><b>Quality assurance - Sofia Åkesson / Q-Manager</b> <span style="float: right;">A05/Z02</span></p> <p>MTC Service / Certificates</p>
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A01



**Chemical composition, product (weight%)**

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
92589	0.020	0.43	1.65	0.038	0.009	17.40	13.43	2.59
	N							
92589	0.045							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
92589	252	289	575	52	52
	250	287	567	51	51

**Hardness test**

Lot	Min	Max
	HRB	HRB
92589	74	75

**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 18.00 X 1.50 MM . HT 561432 SZ LOT 2020408-11 MADE BY SANDVIK IN CZECH REPUBLIC \*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-1301/10

