



**CERTIFICATE**

A03/Z02

**No. A/21-979426**

**Rev 00**

**Date**

2021-11-01

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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

<b>Customer References</b> 761756  003-00991 ITEMS -W	A07	<b>Customer order</b> 2021-10-14	<b>Sandvik References</b> <b>Order No.</b> 576945 <b>Subs No.</b> 703275 <b>SMT Dispatch note</b> 48858/54 <b>SMT No.</b> 300-36718 <b>C.Code</b> 15	A08
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<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	B01/B04	<b>Steel/material Designations</b> <b>Sandvik</b> 3R60 <b>AISI</b> TP316/TP316L <b>EN no</b> 1.4435	B02
<b>Metallurgical process</b> Electric furnace	C70		

<b>Technical requirements</b> 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	B03
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<b>EXTENT OF DELIVERY</b>							B07-B13	
<b>It</b>	<b>Product designation</b>	<b>Heat</b>	<b>Lot</b>	<b>Pieces</b>	<b>Kg</b>	<b>M</b>		
02	THT-3R60-16-2	041634	93913	18	75.0	108.00		
	16.00 X 2.00	041636	93915	66	278.0	396.00		
			<b>Total</b>	<b>84</b>	<b>353.0</b>	<b>504.00</b>		
<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>				
041634	562952		93913	2038120-11				
041636	562952		93915	2038122-11				
<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>
041634	0.018	0.48	1.70	0.030	0.008	17.41	13.12	2.62
041636	0.018	0.48	1.70	0.030	0.008	17.41	13.12	2.62
	<b>N</b>							
041634	0.035							
041636	0.035							

<b>Quality assurance - Sofia Åkesson / Q-Manager</b> MTC Service / Certificates	A05/Z02
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A01

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%)**

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
93913	0.019	0.48	1.72	0.031	0.007	17.40	13.00	2.58
93915	0.019	0.48	1.72	0.031	0.007	17.40	13.00	2.58
	<b>N</b>							
93913	0.040							
93915	0.040							

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength MPa	Elongation	
	MPa	MPa		%	%
	Rp0.2	Rp1.0	Rm	A	2"
93913	253	286	581	52	55
	253	286	581	54	54
93915	249	284	585	55	56
	249	283	584	55	56

**Hardness test**

Lot	Min	Max
	HRB	HRB
93913	72	73
93915	72	72

**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 562952 SZ LOT 2038120-11 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 562952 SZ LOT 2038122-11 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-2766/20  
C-2766/20

