



CERTIFICATE

A03/Z02

No. A/21-952312

Rev 00

Date

2021-04-19

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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 760989 Customer order 2021-04-15 003-00991 ITEMS -W	Sandvik References A08 Order No. Subs No. SMT Dispatch note 569249 697077 37028/54 SMT No. C.Code 300-30973 15
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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
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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								
It	Product designation	Heat	Lot	Pieces	Kg	M		
01	THT-3R60-16-1.5	049013	96630	7	23.0	42.00		
	16.00 X 1.50	049013	96631	3	10.0	18.00		
			Total	10	33.0	60.00		
KEY TO HEAT			KEY TO LOT					
Heat Code	Heat No.			Lot Code	Lot No.			
049013	559908			96630	2016622-11			
				96631	2016623-11			
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
049013	0.018	0.40	1.56	0.034	0.010	17.19	13.06	2.64
	N							
049013	0.035							

Quality assurance - Sofia Åkesson / Q-Manager MTC Service / Certificates	A05/Z02
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**Chemical composition, product (weight%)**

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
96630	0.019	0.40	1.53	0.036	0.010	17.05	12.67	2.59
96631	0.019	0.40	1.53	0.036	0.010	17.05	12.67	2.59
	N							
96630	0.043							
96631	0.043							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
96630	271	310	564	54	59
	276	318	568	54	58
96631	263	301	569	52	59
	282	320	588	55	60

Hardness test

Lot	Min	Max
	HRB	HRB
96630	75	75
96631	75	77

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 EN10305-1 TP 316/TP 316L EN 1.4435 COLD SML NDE 16.00 X 1.50 MM **SAKNAS** HT 559908 SZ LOT 201662 2-11 MADE BY SANDVIK *QA-TUBE*

SANDVIK 3R60 ASTM/ASME A/SA213 A269 COLD EN 10216-5 TC1 TP 316/TP 316L EN 1.44 35 CFA SML NDE 16.00 X 1.50 MM **SAKNAS** HT 559908 SZ LOT 2016623-11 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-1019/20 REV0
C-1019/20

