



CERTIFICATE

A03/Z02

No. A/19-823141 Rev 00

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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	Sandvik References A08
7579 Customer order 2019-05-16	Order No. Subs No. ABSMT Dispatch note 536552 670358 45530/54 ABSMT No. C.Code 300-96710 15
003-00991 ITEMS	

Material description B01/B04	Steel/material Designations B02
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
Steel making process Electric furnace	
C70	

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 17945-1:2016 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-3R60-16-2 16.00 X 2.00	555319	56447	80	326.0	480.00		
			Total	80	326.0	480.00		
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
555319	0.018	0.38	1.81	0.033	0.009	17.37	13.06	2.64
	N							
555319	0.032							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
555319	0.018	0.36	1.80	0.032	0.005	17.34	13.00	2.63
	N							
555319	0.039							

Quality assurance - Sofia Åkesson / Q-Manager MTC Service / Certificates	A05/Z02
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**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
56447	263	299	581	60	60
	261	299	579	57	57
	263	300	580	58	58
	261	299	579	55	55

Hardness test

Lot	Min	Max
	HRB	HRB
56447	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 AW EN 1.4435 TP316/3 16L CFA SML NDE 16.00 X 2.00 MM HT 555319 SS LOT 56447 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.



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