



CERTIFICATE

A03/Z02

No. V/20-012329

Rev 00

Date

2020-04-02

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

Customer References A07 759334	Sandvik References A08 Order No. Subs No. Dispatch note 551512 169793 190879 Suppl. No C.Code 169793 15
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

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	Kg	M			
01	THT-3R60-16-2 16.00 X 2.00	558649	24270	336.5	480.00			
Total				336.5	480.00			
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
558649	0.019	0.38	1.55	0.029	0.006	17.50	13.13	2.62
	Co	N						
558649	0.15	0.040						
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
558649	0.017	0.38	1.55	0.030	0.007	17.50	13.14	2.64
	N							
558649	0.039							

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



**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPA	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
24270	274	311	590	51	51
	279	316	593	48	49
	278	317	593	49	50
	273	315	590	49	50

Hardness test

Lot	Min	Max
	HRB	HRB
24270	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 558649 SS LOT 24270 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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