



CERTIFICATE

A03/Z02
No. A/19-852654 Rev 00
Date 2019-10-24 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	Sandvik References A08
Customer order 2019-10-11	Order No. Subs No. ABSMT Dispatch note 543719 676026 06476/54
758574	ABSMT No. C.Code 300-12351 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:-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-3R60-6-1	556769	17012	19	14.0	114.00		
	6.00 X 1.00	556769	17013	28	23.0	168.00		
		556769	17289	32	23.0	192.00		
			Total	79	60.0	474.00		
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556769	0.018	0.44	1.59	0.031	0.011	17.21	13.06	2.62
	Co	N						
556769	0.11	0.036						
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556769	0.023	0.44	1.59	0.032	0.008	17.14	13.02	2.60
	N							
556769	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	%	%
Lot	Rp0.2	Rp1.0	Rm	A	4D
17012	304	339	577	58	55
17013	318	354	586	59	55
17289	296	330	579	56	53

Hardness test

Lot	Min	Max
	HRB	HRB
17012	69	71
17013	71	73
17289	73	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 A213/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4435 TP316/3
16L CFA SML NDE 6.00 X 1.00 MM HT 556769 SS LOT 17012 MADE IN SWEDEN *QA-TUBE*
SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4435 TP316/3
16L CFA SML NDE 6.00 X 1.00 MM HT 556769 SS LOT 17013 MADE IN SWEDEN *QA-TUBE*
SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4435 TP316/3
16L CFA SML NDE 6.00 X 1.00 MM HT 556769 SS LOT 17289 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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The certificate is produced with EDP and valid without signature.

