

**CERTIFICATE****No. A/19-803780 Rev 00**

Date 2019-02-15 Page 1/3

INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References	Sandvik References
757471	Order No. Subs No. ABSMT Dispatch note
	530861 665764 39234/54
	ABSM T No. C.Code
	300-92213 15
003-00991 ITEMS	

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

Technical requirements
ASTM A-213-18 AW, ASME SA-213-ED-17 AW, ASTM A-269-15A NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17945:2015 PED 2014/68/EU EN 10216-5 TC1 HRB MAX 80

EXTENT OF DELIVERY								
It	Product designation		Heat	Lot	Pieces	Kg	M	
02	THT-3R60-16-2		554279	50406	70	290.0	420.00	
	16.00 X 2.00							
Total					70	290.0	420.00	
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
554279	0.018	0.42	1.63	0.030	0.009	17.25	13.10	2.63
	N							
554279	0.035							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
554279	0.018	0.39	1.63	0.030	0.010	17.29	13.11	2.64
	N							
554279	0.034							

Quality assurance - Sofia Åkesson / Q-Manager MTC Service / Certificates

**Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
50406	262	298	572	57	58
	273	308	578	58	58
	273	309	577	60	61
	270	306	576	62	63

Hardness test

Lot	Min	Max
	HRB	HRB
50406	75	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 554279 SS LOT 50406 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.