

**CERTIFICATE****No. A/18-726263****Rev 00****Date 2018-03-07****Page 1/3**INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
756136/Holmgren	Customer order 2018-03-02	Order No.	Subs No.	ABSMT Dispatch note
		507535	647154	16437/54
003-00991 ITEMS		ABSMT No.	C.Code	
		300-77446	15	

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-213-17 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
01	THT-3R60-20-2.5 20.00 X 2.50	551583	37774	25	161.0	150.00
				Total	25	161.0 150.00

TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
551583	0.027	0.40	1.61	0.031	0.008	17.54	13.19	2.63
	N							
551583	0.045							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
551583	0.026	0.41	1.62	0.030	0.008	17.33	13.10	2.63
	N							
551583	0.038							

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

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
37774	280	317	599	53	55
	284	323	604	51	52
	284	320	601	51	55

Hardness test

Lot	Min	Max
	HRB	HRB
37774	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 EN10305-1 AW EN 1.44 35 TP316/316L CFA SML NDE 20.00 X 2.50 MM HT 551583 SS LOT 37774 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 9001:2008.



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The certificate is produced with EDP and valid without signature.