



CERTIFICATE

No. A/18-714496

Rev 00

Date 2018-01-18

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INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
755908	Customer order 2018-01-12	Order No. 502360	Subs No. 643711
003-00991	ITEMS	ABSMT No. 300-74752	ABSMT Dispatch note 13037/54 C.Code 29

Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	Steel/material Designations 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-3R60-15.88-1.65 15.88 X 1.65	048534	95771	2	7.0	12.00		
				Total	2	7.0	12.00	
KEY TO HEAT				KEY TO LOT				
Heat Code	Heat No.		Lot Code	Lot No.				
048534	547817		95771	0002001615				
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048534	0.027	0.38	1.63	0.028	0.009	17.37	13.18	2.64
	N							
048534	0.039							

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

**Chemical composition, product (weight%)**

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
95771	0.026	0.40	1.62	0.029	0.008	17.40	13.25	2.65
	N							
95771	0.040							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
95771	315	361	595	48	49
	333	375	594	49	48

Hardness test

Lot	Min	Max
	HRB	HRB
95771	68	68

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 TP 316/TP 316L EN 1.4435 COLD SML NDE 15.88 X 1.65 MM 5/8'' X 16 BWG/SWG HT 547817 SG LO T 0002001615 MADE BY SANDVIK *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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 0002001615