



CERTIFICATE

A03/Z02

No. A/20-875162 Rev 00

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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 2020-02-04	Order No. Subs No. ABSMT Dispatch note
759099	549087 680553 13444/54
003-00991 ITEMS	ABSMT No. C.Code
	300-16531 29

Material description B01/B04	Steel/material Designations B02
SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	Sandvik AISI 3R60 TP316/TP316L
Metallurgical process Electric furnace C70	EN no 1.4435

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-3R60-6.35-1.24 6.35 X 1.24	557937	22291	15	14.0	90.00		
				Total	15	14.0 90.00		
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
557937	0.020	0.38	1.59	0.029	0.0046	17.64	13.43	2.64
	Co	Ti	Al	N				
557937	0.14	0.031	0.006	0.052				
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
557937	0.019	0.38	1.59	0.030	0.005	17.66	13.41	2.66
	N							
557937	0.050							

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	%	%
	Rp0.2	Rp1.0	Rm	A	4D
22291	291	333	603	51	51

Hardness test

Lot	Min	Max
	HRB	HRB
22291	71	73

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 1.4436 EN 1.4435 TP316/316L CFA SML NDE 6.35 X 1.24 MM 1/4'' X 18 BWG/SWG HT 557937 SS LOT 22291 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.

