



CERTIFICATE

No. V/18-085031

Rev 00

Date 2018-02-08

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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 756031	Sandvik References Order No. Subs No. Dispatch note 505281 162360 179930 Suppl. No C.Code 162360 29
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Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING Steel making process Electric furnace	Steel/material Designations Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
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Technical requirements ASTM A-213-17 AW, ASME SA-213-ED-15 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
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EXTENT OF DELIVERY					
It	Product designation	Heat	Lot	Kg	M
01	THT-3R60-25.4-2.11 25.40 X 2.11	549466	30212	44.3	36.00
Total				44.3	36.00

TEST RESULTS									
Chemical composition (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
549466	0.018	0.39	1.61	0.035	0.008	17.16	13.03	2.62	
	Ti	Al	N						
549466	<0.003	0.006	0.040						
Chemical composition, product (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
549466	0.019	0.40	1.59	0.034	0.007	17.17	13.01	2.61	
	N								
549466	0.043								

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"
30212	312	350	598	50	54
	310	349	598	54	56
	313	351	592	51	56
	311	348	597	51	55

Hardness test

Lot	Min	Max
	HRB	HRB
30212	77	79

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 A/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 AW EN 1.4435 TP316/316L CFA SML NDE 25.40 X 2.11 MM 1'' X 14 BWG HT 549466 SS LOT 30212 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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