

**CERTIFICATE****No. V/18-092139****Rev 00****Date 2018-05-24****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
756456	Order No. Subs No. Dispatch note 513941 164267 183106 Suppl. No C.Code 164267 29

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION 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	Kg	M	
01	THT-3R60-12.7-1.65 12.70 X 1.65			551949	39980	19.0	42.00	
Total						19.0	42.00	
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
551949	0.020	0.41	1.60	0.032	0.009	17.36	13.17	2.65
	Ti	Al	N					
551949	<0.003	0.007	0.040					
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
551949	0.025	0.43	1.60	0.032	0.006	17.34	13.13	2.67
	N							
551949	0.041							
Quality assurance - Sofia Åkesson / Q-Manager MTC Service / Certificates								

**CERTIFICATE****No. V/18-092139****Rev 00****Date 2018-05-24****Page 2/3****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
39980	282	314	574	53	52

Hardness test

Lot	Min	Max
	HRB	HRB
39980	75	76

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 1.4436 EN 1.4435 TP316/316L CFA SML NDE 12.70 X 1.65 MM 1/2" X 16 BWG/SWG HT 5519 49 SS LOT 39980 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.

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of AB Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.



CERTIFICATE

No. V/18-092139

Rev 00

Date 2018-05-24

Page 3/3

The certificate is produced with EDP and valid without signature.