



CERTIFICATE

No. A/16-579146

Rev 00

Date 2016-05-18

Page 1/2

INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
753429	Customer order 2016-05-18	Order No. 441798	Subs No. 610256	ABSMT Dispatch note 21379/54
003-00991	ITEMS	ABSMT No. 300-46950	C.Code 29	

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

Technical requirements
 ASTM A-213-15C AW, ASME SA-213-ED-15 AW, ASTM A-269-15A
 NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17495:2015
 PED 97/23/EC EN 10216-5 TC1
 HRB MAX 80

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg	M
03	THT-3R60-19.05-2.41 19.05 X 2.41	544802	54614	2	12.0	12.00
				Total	2	12.00

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
544802	0.020	0.38	1.64	0.031	0.010	17.35	13.10	2.64
	Ti	Al	N					
544802	<0.003	0.003	0.043					

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
544802	0.019	0.39	1.63	0.030	0.011	17.31	13.07	2.62
	N							
544802	0.043							

Quality assurance - Lars-Åke Bergqvist / QA-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"
54614	291	323	587	54	57
	297	327	588	53	56

Hardness test

Lot	Min	Max
	HRB	HRB
54614	76	78

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- 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/ASME A/SA-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD AW EN 1.4 435 TP316/316L CFA SMLS NDE 19.05 X 2.41 MM 3/4'' X 13 BWG HT 544802 SS LOT 54 614 MADE BY SANDVIK IN SWEDEN *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (97/23/EC) 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.

The certificate is produced with EDP and valid without signature.