

**CERTIFICATE****No. A/17-644444 Rev 00**
Date 2017-03-14 Page 1/2INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
754662/Holmgren	Customer order 2017-03-14	Order No. 472513	Subs No. 626450
003-00991 ITEMS		ABSMT No. 300-60490	ABSMT Dispatch note 41242/54
		C.Code 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-213-15C 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

EXTENT OF DELIVERY							
It	Product designation	Heat	Lot	Pieces	Kg	M	
01	THT-3R60-25.4-2.11 25.40 X 2.11	545590	58704	2	15.0	12.00	
Total				2	15.0	12.00	
TEST RESULTS							
Chemical composition (weight%)							
Heat	C	Si	Mn	P	S	Cr	Ni
545590	0.020	0.43	1.58	0.033	0.010	17.32	13.09
	Ti	Al	N				Mo
545590	<0.003	0.003	0.040				2.62
Chemical composition, product (weight%)							
Heat	C	Si	Mn	P	S	Cr	Ni
545590	0.022	0.51	1.59	0.034	0.010	17.38	13.09
	N						Mo
545590	0.041						2.64
Quality assurance - Lars-Åke Bergqvist / QA-manager							
MTC Service / Certificates							

**CERTIFICATE****No. A/17-644444****Rev 00****Date 2017-03-14****Page 2/2****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
58704	298	333	591	54	58

Hardness test

Lot	Min	Max
	HRB	HRB
58704	77	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 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 545590 SS LOT 58704 MAD
E BY SANDVIK 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.

The certificate is produced with EDP and valid without signature.