

**CERTIFICATE****No. A/16-580212 Rev 00**
Date 2016-05-23 Page 1/2INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References						
753429	Customer order 2016-05-18	Order No. 441798	Subs No. 610256 ABSMT No. C.Code 300-46950 29					
003-00991 ITEMS		ABSMT Dispatch note 21635/54						
Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING		Steel/material Designations 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 17495:2015 PED 97/23/EC EN 10216-5 TC1 HRB MAX 80								
EXTENT OF DELIVERY								
It	Product designation	Heat	Lot	Pieces	Kg	M		
04	THT-3R60-25.4-3.20 25.40 X 3.20	544742	54617	2	21.0	12.00		
Total				2	21.0	12.00		
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
544742	0.023	0.45	1.57	0.028	0.010	17.37	13.13	2.63
	Ti	Al	N					
544742	<0.003	0.004	0.044					
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
544742	0.029	0.46	1.56	0.030	0.009	17.38	13.10	2.64
	N							
544742	0.038							
Tensile test at room temperature								
	Yield strength		Tensile strength		Elongation			
	MPa	MPa	MPa		%	%		
Lot	Rp0.2	Rp1.0	Rm		A	2"		
54617	277	313	602		52	57		
Quality assurance - Lars-Åke Bergqvist / QA-manager MTC Service / Certificates								

**Hardness test**

	Min	Max
Lot	HRB	HRB
54617	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 25.40 X 3.20 MM . HT 544742 SS LOT 54617 MADE BY S
ANDVIK 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.