

**CERTIFICATE****No. A/14-405764****Rev 00****Date 2014-03-19****Page 1/2**INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
750233	Customer order 2014-03-18	Order No. 363710	Subs No. 568219	ABSMT Dispatch note 19587/54
003-00991	ITEMS	ABSMT No. 300-10872	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-213-13 AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-13 NACE MR0175/ISO 15156-3:2009 PED 97/23/EC EN 10216-5 TC1 HRB MAX 80

EXTENT OF DELIVERY						
It	Product designation	Heat	Lot	Pieces	Kg	M
02	THT-3R60-19.05-2.41 19.05 X 2.41	538081	23997	5	30.0	30.00
				Total	5	30.0
					30.0	30.00

TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
538081	0.018	0.40	1.49	0.030	0.011	17.34	13.11	2.55
N								
538081	0.040							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
538081	0.020	0.40	1.47	0.031	0.009	17.28	13.05	2.53
N								
538081	0.039							

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"
23997	269	309	585	53	55
	268	309	585	51	54

Hardness test

Lot	Min	Max
	HRB	HRB
23997	74	77

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 10246-2, 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-213AW A-269 EN 10216-5 TC1 EN 10305-1 EN 1.4435 TP 316/316L COLD SMLS NDE 19.05 X 2.41 MM 3/4'' X 13 BWG HT 538081 SS LOT 23997 M ADE 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.