



CERTIFICATE

No. A/15-518129

Rev 00

Date 2015-08-19

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INSPECTION CERTIFICATE acc to
EN 10 204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
752204	Customer order 2015-08-18	Order No. 414314	Subs No. 595428	ABSMT Dispatch note 03002/54
003-00991	ITEMS	ABSMT No. 300-34006	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-213-15A AW, ASME SA-213-ED-13 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		
03	THT-3R60-12.7-1.24 12.70 X 1.24	048106	44945	10	21.0	60.00		
				Total	10	21.0 60.00		
KEY TO HEAT								
Heat Code	Heat No.							
048106	538074							
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048106	0.018	0.38	1.65	0.031	0.0060	17.41	13.10	2.53
	N							
048106	0.048							
Chemical composition, product (weight%)								
Lot	C	Si	Mn	P	S	Cr	Ni	Mo
44945	0.020	0.39	1.61	0.030	0.006	17.29	13.10	2.52
	N							
44945	0.045							

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"
44945	318	358	566	53	52

Hardness test

Lot	Min	Max
	HRB	HRB
44945	74	76

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-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD AW EN 1.4 435 TP316/316L CFA SMLS NDE 12.70 X 1.24 MM 1/2'' X 18 BWG/SWG HT 538074 SS LO T 44945 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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 2014/1398