



CERTIFICATE

No. A/16-579148

Rev 00

Date 2016-05-18

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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
003-00991	ITEMS	ABSMT No. 300-46950	ABSMT Dispatch note 21380/54
		C.Code 29	

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-213-15A AW, ASME SA-213-ED-15 AW, ASTM A-269-14
 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
02	THT-3R60-9.53-2.11 9.53 X 2.11	048208	51797	1	2.0	6.00
				Total	1	2.0
					2.0	6.00

KEY TO HEAT
 Heat Code Heat No.
 048208 543135

TEST RESULTS
Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048208	0.024	0.36	1.64	0.031	0.0080	17.48	13.13	2.54
	Ti	Al	N					
048208	0.008	0.004	0.035					

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
048208	0.022	0.38	1.65	0.033	0.0060	17.60	13.17	2.53	
	N								
048208	0.034								

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	4D
51797	267	305	559	58	58

Hardness test

Lot	Min	Max
	HRB	HRB
51797	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 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 9.53 X 2.11 MM 3/8'' X 14 BWG/SWG HT 543135 SS LOT
51797 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.