



CERTIFICATE

No. A/16-611170

Rev 00

Date 2016-10-18

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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	
753999	Customer order 2016-10-18	Order No. 457193	Subs No. 618207
003-00991	ITEMS	ABSMT No. 300-53688	C.Code 29
		ABSMT Dispatch note 31176/54	

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 2014/68/EU EN 10216-5 TC1
 HRB MAX 80

EXTENT OF DELIVERY								
It	Product designation	Heat	Lot	Pieces	Kg	M		
01	THT-3R60-15.88-1.65 15.88 X 1.65	048229	93588	1	3.0	6.00		
				Total	1	3.0 6.00		
KEY TO HEAT			KEY TO LOT					
Heat Code	Heat No.		Lot Code	Lot No.				
048229	544137		93588	181183				
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048229	0.018	0.43	1.57	0.030	0.008	17.27	13.07	2.52
	N							
048229	0.038							
Chemical composition, product (weight%)								
Lot	C	Si	Mn	P	S	Cr	Ni	Mo
93588	0.018	0.44	1.56	0.031	0.007	17.19	13.00	2.51
	N							
93588	0.047							

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"
93588	256	291	539	48	47

Hardness test

Lot	Min	Max
	HRB	HRB
93588	67	68

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 TP 316/TP 316L
EN 1.4435 COLD SMLS NDE 15.88 X 1.65 MM 5/8" X 16 BWG/SWG HT 544137 SG LOT 1
81183 MADE BY SANDVIK *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) 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.



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TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 181183