



CERTIFICATE

No. A/18-767687 Rev 00

Date 2018-09-09 Page 1/3

INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References	Customer order 2018-09-06	Sandvik References	Order No. 522043 Subs No. 658543 ABSMT No. 300-85928 Dispatch note 28514/54 C.Code 29
756846			
003-00991 ITEMS			

Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	Steel/material Designations Sandvik 3R60 EN no 1.4435 AISI TP316/TP316L
Steel making process Electric furnace	

Technical requirements
 ASTM A-213-17 AW, ASME SA-213-ED-17 AW, ASTM A-269-15A
 NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17945:2015
 PED 2014/68/EU EN 10216-5 TC1
 HRB MAX 80

EXTENT OF DELIVERY								
It	Product designation	Heat	Lot	Pieces	Kg	M		
02	THT-3R60-12.7-1.24 12.70 X 1.24	553361	45362	10	22.0	60.00		
				Total	10	22.0 60.00		
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
553361	0.020	0.47	1.55	0.030	0.008	17.33	13.07	2.60
	Ti	Al	N					
553361	<0.003	<0.003	0.041					
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
553361	0.023	0.45	1.55	0.030	0.008	17.34	13.10	2.62
	N							
553361	0.039							

Quality assurance - Sofia Åkesson / Q-Manager
MTC Service / Certificates

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
45362	Rp0.2	Rp1.0	Rm	A	2"
	295	339	592	48	47

Hardness test

Lot	Min	Max
	HRB	HRB
45362	76	80

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- 100% PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- 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 A/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4435 TP316/316L
CFA SML NDE 12.70 X 1.24 MM 1/2'' X 18 BWG/SWG HT 553361 SS LOT 45362 MADE IN
SWEDEN *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, Annex 1 para 4.3) 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 9001:2015.

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The certificate is produced with EDP and valid without signature.