



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 713656	Sandvik References Order No. Subs No. Dispatch note 356784 132050 136983 Suppl. No C.Code 132050 29
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Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING Steel making process Electric furnace	Steel/material Designations Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
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Technical requirements
ASTM A-213-11A AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-10
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	Kg	M
01	THT-3R60-19.05-1.24 19.05 X 1.24	535996	16648	19.9	36.00
Total				19.9	36.00

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
535996	0.021	0.39	1.60	0.029	0.007	17.35	13.11	2.53
	N							
535996	0.035							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
535996	0.021	0.39	1.59	0.029	0.006	17.33	13.08	2.51
	N							
535996	0.046							

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"
16648	363	408	600	48	47
	355	398	596	50	48
	356	397	599	49	48
	366	407	599	48	47

Hardness test

Lot	Min	Max
	HRB	HRB
16648	81	84

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 1.24 MM 3/4'' X 18 BWG/SWG HT 535996 SS LOT 16648 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.

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CERTIFICATE

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The certificate is produced with EDP and valid without signature.