

**CERTIFICATE****No. A/13-316019****Rev 00****Date 2013-02-22****Page 1/2**INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE**Customer References**

712510

Customer
order
2013-02-22

003-00991 ITEMS

Sandvik ReferencesOrder No. Subs No. ABSMT Dispatch note
322587 545052 42699/54
ABSMT No. C.Code
300-81509 29**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**Technical requirements**ASTM A-213-10A 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	Pieces	Kg	M
01	THT-3R60-19.05-1.24 19.05 X 1.24	534261	51621	8	27.0	48.00
Total				8	27.0	48.00

TEST RESULTS**Chemical composition (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534261	0.018	0.37	1.59	0.029	0.008	17.35	13.11	2.53
N								
534261	0.034							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534261	0.018	0.39	1.59	0.032	0.008	17.43	13.19	2.55
N								
534261	0.044							

Quality assurance - Per Eriksson / QA-manager
MTC Service / Certificates

**CERTIFICATE****No. A/13-316019****Rev 00****Date 2013-02-22****Page 2/2****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
51621	302	342	589	52	51
	299	340	588	52	50

Hardness test

	Min	Max
Lot	HRB	HRB
51621	69	74

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 min 1040° C.

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 534261 SS LOT 51621 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.

The certificate is produced with EDP and valid without signature.