

**CERTIFICATE****No. A/13-329995****Rev 00****Date 2013-04-23****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**

712732

Customer
order
2013-04-23

003-00991 ITEMS

Sandvik ReferencesOrder No. Subs No. ABSMT Dispatch note
329573 548782 47058/54
ABSMT No. C.Code
300-84725 21**Material description**SEAMLESS STAINLESS COLD FINISHED
INSTRUMENTATION TUBING**Steel making process**
Electric furnace**Steel/material Designations**Sandvik UNS
254 SMO S31254
EN no
1.4547**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 90**EXTENT OF DELIVERY**

It	Product designation	Heat	Lot	Pieces	Kg	M
01	THT-254SMO-12.7-2.11 12.70 X 2.11	532995	48132	10	33.0	60.00
Total				10	33.0	60.00

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
532995	0.011	0.42	0.49	0.020	0.0005	20.34	18.10	6.04
	Cu	N						
532995	0.57	0.21						

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
532995	0.013	0.43	0.48	0.021	<0.001	20.33	18.03	6.08
	Cu	N						
532995	0.57	0.21						

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

**CERTIFICATE****No. A/13-329995****Rev 00****Date 2013-04-23****Page 2/2****Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
48132	376	424	721	52	51
	387	436	724	49	48

Hardness test

Lot	HRB	
48132	88	89
	87	87
	86	87
	88	88
	87	86
	88	89

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc. to ISO 3651-2 C
- Corrosion test acc to ASTM G48A, 50 degrees C/24H.
- Leak test: Eddy current test acc to EN 10246-2, ASME SA-1016.
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

Marking:

SANDVIK 254 SMO ASTM A-269 . UNS S31254 COLD SMLS NDE 12.70 X 2.11 MM 0.500 X 0.083 HT 532995 SS LOT 48132 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.