

**CERTIFICATE****No. A/15-514851****Rev 00****Date 2015-07-30****Page 1/3**INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
752146	Customer order 2015-07-14	Order No. 411519	Subs No. 594098	ABSMT Dispatch note 02159/54
003-00991	ITEMS	ABSMT No. 300-32746	C.Code 21	

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	Sandvik UNS 254 SMO S31254 EN no 1.4547
Steel making process Electric furnace	

Technical requirements
ASTM A-213-13 AW, ASME SA-213-ED-13 AW, ASTM A-269-13 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-6-1 6.00 X 1.00	540917	41386	2	2.0	12.00
				Total	2	12.00

TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
540917	0.008	0.44	0.52	0.020	0.0005	20.05	17.81	6.04
	Cu	N						
540917	0.62	0.198						
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
540917	0.010	0.45	0.52	0.020	<0.001	20.09	17.81	6.10
	Cu	N						
540917	0.63	0.20						

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	4D
41386	341	394	709	52	52
	365	403	709	52	50

Hardness test

Lot	HRB	
41386	76	74
	74	75
	75	76
	74	75
	74	74
	74	75

Corrosion test

According to ASTM G-48A, 50 °C for 24 hours.
No pitting corrosion found at 20x enlargement.

Specimen weight loss

Lot	g/m2
41386	0.03
	0.03
	0.20

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- 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/ASME A/SA-213AW A-269 EN 10216-5 TC1 COLD AW UNS S31254 E
N 1.4547 CFA SMLS NDE 6.00 X 1.00 MM 0.236 X 0.039 HT 540917 SS LOT 41386 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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