

CERTIFICATE

No. A/14-437481

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Rev 00

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

Customer

order

2014-08-15

003-00991 ITEMS

750758

Sandvik References

Order No. Subs No. ABSMT Dispatch note

576510 29001/54 378933

ABSMT No. C.Code

300-17790 29

Material description

SEAMLESS STAINLESS COLD FINISHED

INSTRUMENTATION TUBING

Steel/material Designations

Sandvik ATST

TP316/TP316L 3R60

EN no 1.4435

Steel making process

Electric furnace

Technical requirements

ASTM A-213-13 AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-13

NACE MR0175/ISO 15156-3:2009

PED 97/23/EC EN 10216-5 TC1

HRB MAX 80

EXTENT OF DELIVERY

It Product designation Heat Pieces Lot Kg M

02 THT-3R60-19.05-1.24 539617 30058 13.0 24.00

19.05 X 1.24

Total 4 13.0

TEST RESULTS

Chemical composition (weight%)

Heat C Si Mn P S CrΝi Mo 539617 0.36 1.62 0.030 0.009 17.30 13.16 2.53 0.018

N

539617 0.041

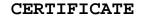
Chemical composition, product (weight%)

Mn Heat C Si P S \mathtt{Cr} Νi Mo 0.031 539617 0.019 0.40 1.62 0.008 17.34 2.55 13.17

N

539617 0.043

> Quality assurance - Lars-Ake Bergqvist / QA-manager MTC Service / Certificates



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Tensile test at room temperature

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
30058	332	374	592	51	51
	332	374	595	50	48

Hardness test

	Min	Max	
Lot	HRB	HRB	
30058	78	80	

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-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD AW EN 1.4 435 TP316/316L CFA SMLS NDE 19.05 X 1.24 MM 3/4'' X 18 BWG/SWG HT 539617 SS LO T 30058 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.

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of AB Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.