

CERTIFICATE

No. A/14-405764

Date 2014-03-19 Page 1/2

Rev 00

INSPECTION CERTIFICATE acc to EN 10 204 3.1

Processkontroll Items AB Box 2088 444 02 STORA HÖGA

INSPECTION STAMP QA-TUBE

Customer References

Sandvik References
Order No. Subs No. ABSMT Dispatch note

SWEDEN

750233 Customer order

SEAMLESS STAINLESS COLD FINISHED

363710 568219 19587/54

2014-03-18

ABSMT No. C.Code 300-10872 29

003-00991 ITEMS

Material description

INSTRUMENTATION TUBING

Steel/material Designations

||Sandvik AISI

3R60 TP316/TP316L

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 Lot Pieces Kg M

02 THT-3R60-19.05-2.41 538081 23997 5 30.0 30.00

19.05 X 2.41

Total 5 30.0 30.00

TEST RESULTS

Chemical composition (weight%)

Heat C Si Mn P S \mathtt{Cr} Νi Mo 538081 0.40 1.49 0.030 0.011 17.34 13.11 2.55 0.018

N

538081 0.040

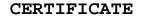
Chemical composition, product (weight%)

Heat C Si Mn P S \mathtt{Cr} Νi Mo 0.031 538081 0.020 0.40 1.47 0.009 17.28 2.53 13.05

N

538081 0.039

Quality assurance - Lars-Åke Bergqvist / QA-manager MTC Service / Certificates



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Tensile	test	at	room	temperature
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	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
23997	269	309	585	53	55
	268	309	585	51	54

Hardness test

	Min	Max HRB	
Lot	HRB		
23997	74	77	

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 2.41 MM 3/4'' X 13 BWG HT 538081 SS LOT 23997 M ADE 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.