

CERTIFICATE

No. A/15-522414 Rev 00

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INSPECTION CERTIFICATE acc to EN 10 204 3.1

Processkontroll Items AB Box 2088 444 02 STORA HÖGA

INSPECTION STAMP QA-TUBE

Customer References

Customer

752248 order

SEAMLESS STAINLESS COLD FINISHED

2015-08-25

003-00991 ITEMS

Order No. Subs No. ABSMT Dispatch note

414945 595772 04393/54

ABSMT No. C.Code 300-34310 15

Sandvik References

HYDRAULIC TUBING

Material description

Steel/material Designations

Sandvik AISI

3R60 TP316/TP316L

EN no 1.4435

SWEDEN

Steel making process

Electric furnace

Technical requirements

ASTM A-213-15A 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 80

EXTENT	ΟF	DELIVERY	•

I	t Product	designation	Heat	Lot	Pieces	Kg	M
0	2 THT-3R60	-25-3	542918	45592	3	29.0	18.00

25.00 X 3.00

Total 3 29.0 18.00

TEST RESULTS

Chemical composition (weight%)

C Si Mn Ρ S \mathtt{Cr} Νi Mo 0.007 1.65 0.032 542918 0.022 0.36 17.20 13.11 2.53

N

542918 0.040

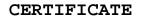
Chemical composition, product (weight%)

Mn Heat C Si P S \mathtt{Cr} Νi Mo 0.032 0.005 17.35 0.37 542918 0.020 1.66 2.51 13.18

N

542918 0.038

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



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Tensile test at room temperature

	Yield s	strength	Tensile strength	Elon	gation
	MPA	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
45592	268	311	584	51	57
	268	307	581	53	59

Hardness test

	Min	Max	
Lot	HRB	HRB	
45592	76	78	

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 25.00 X 3.00 MM HT 542918 SS LOT 45592 MADE BY SAN DVIK 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.