

# CERTIFICATE

No. A/14-429943

Date 2014-06-30 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

Customer Order No. Subs No. ABSMT Dispatch note

750498/Holmgren order

SEAMLESS STAINLESS COLD FINISHED

370379 572020 26695/54

2014-05-20

ABSMT No. C.Code 300-14008 15

Sandvik References

003-00991 ITEMS

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-213-13 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-3R60-18-1.5
 539727 30724 4 15.0
 24.00

18.00 X 1.50

Total 4 15.0 24.00

TEST RESULTS

Chemical composition (weight%)

Heat C Si Mn P S CrΝi Mo 539727 0.020 0.38 1.74 0.029 0.007 17.26 13.04 2.54

N

539727 0.036

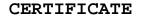
Chemical composition, product (weight%)

Heat С Si Mn P S  $\mathtt{Cr}$ Νi Mo 1.73 0.031 0.008 539727 0.023 0.40 17.30 2.55 13.05

N

539727 0.034

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



No. A/14-429943

Rev 00

2014-06-30 **Page 2/2** Date





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"
30724	307	346	590	47	47
	309	349	595	50	50

#### Hardness test

	Min	Max
Lot	HRB	HRB
30724	77	79

## 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 EN 1.4435 TP316/316L CFA SMLS NDE 18.00 X 1.50 MM HT 539727 SS LOT 30724 MADE BY SANDVI K 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.