

EN 10204 3.1

### CERTIFICATE

No. A/16-572779 Rev 00 Date 2016-04-20 Page 1/2

Box 2088

444 02 STORA HÖGA

Processkontroll Items AB

SWEDEN

INSPECTION STAMP

QA-TUBE

Customer References

Customer

753304 order

INSPECTION CERTIFICATE acc to

2016-04-19

003-00991 ITEMS Sandvik References

Order No. Subs No. ABSMT Dispatch note

438620 608665 19522/54

ABSMT No. C.Code

300-45490 15

Material description

SEAMLESS STAINLESS COLD FINISHED

HYDRAULIC TUBING

Steel/material Designations

Sandvik ATST

3R60 TP316/TP316L

EN no 1.4435

Steel making process

Electric furnace

Technical requirements

ASTM A-213-15C AW, ASME SA-213-ED-15 AW, ASTM A-269-15A

NACE MR0175/ISO 15156-3:2009

PED 97/23/EC EN 10216-5 TC1

HRB MAX 80

EXTENT OF DELIVERY

It Product designation Kg Heat Pieces M Lot 60.00

01 THT-3R60-16-1 048245 93599 10 23.0

16.00 X 1.00

Total 10 23.0 60.00

KEY TO HEAT KEY TO LOT

Heat Code Heat No. Lot Code Lot No.

048245 544286 93599 181188

TEST RESULTS

Chemical composition (weight%)

Heat C Si Mn  $\mathtt{Cr}$ Νi Mo P S

0.031 0.0009 17.20 048245 0.018 0.38 1.51 13.17 2.52

N

048245 0.037

Chemical composition, product (weight%)

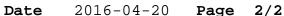
Heat C Si Mn P S  $\mathtt{Cr}$ Νi Mo 1.50 0.031 0.0009 17.27 048245 0.017 0.38 13.11 2.51

N

048245 0.038

Quality assurance - Lars-Ake Bergqvist / QA-manager

MTC Service / Certificates





# Tensile test at room temperature

	Yield strength		Tensile strength	Elongation	
	MPA	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
93599	285	330	555	46	46
	292	338	555	45	43

### Hardness test

	Min	Max	
Lot	HRB	HRB	
93599	69	75	

## 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 A-632 TP 316/316L EN 10216-5 TC1 MS WNR 1.4435 EN 1.44 35 COLD SMLS 16.00 X 1.00 MM \*\*SAKNAS\*\* HT 544286 SG LOT 181188 \*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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 181188