

CERTIFICATE

No. A/17-636397

2017-02-09 **Page 1/2**

Rev 00

INSPECTION CERTIFICATE acc to Proces

EN 10204 3.1

754452

Processkontroll Items AB Box 2088 444 02 STORA H@GA

Date

INSPECTION STAMP QA-TUBE

Customer References

Customer

order

2017-02-01

003-00991 ITEMS

Sandvik References

Order No. Subs No. ABSMT Dispatch note

467950 623957 38759/54

ABSMT No. C.Code

300-58336 15

Material description

SEAMLESS STAINLESS COLD FINISHED

HYDRAULIC TUBING

Steel/material Designations

Sandvik AISI

3R60 TP316/TP316L

EN no 1.4435

SWEDEN

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 15156-3:2015, NACE MR0103/ISO 17945:2015

PED 2014/68/EU EN 10216-5 TC1

HRB MAX 80

CVTCNT	OF	DET TUEDV
CVICNI	OF	DELIVERY

 It
 Product designation
 Heat
 Lot
 Pieces
 Kg
 M

 01
 THT-3R60-10-1.5
 546926
 18854
 6
 12.0
 36.00

10.00 X 1.50

Total 6 12.0 36.00

TEST RESULTS

Chemical composition (weight%)

Heat C Si Mn P \mathtt{Cr} Νi Mo S 0.031 0.012 546926 0.022 0.38 1.65 17.25 13.05 2.63

N

546926 0.048

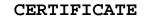
Chemical composition, product (weight%)

Heat C Si Mn P S \mathtt{Cr} Νi Mo 0.018 0.033 0.010 546926 0.39 1.62 17.36 13.08 2.63

N

546926 0.044

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



No. A/17-636397

Rev 00

Date 2017-02-09 Page 2/2



Tensile test at room temperature

Yield strength Tensile strength Elongation MPa MPAMPa % Rp0.2 Rp1.0 Rm4D Lot Α 18854 265 333 582 48 47

Hardness test

 Min
 Max

 Lot
 HRB
 HRB

 18854
 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 ISO 10893-1, 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 A213/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 AW EN 1.44 35 TP316/316L CFA SML NDE 10.00 X 1.50 MM HT 546926 SS LOT 18854 MADE IN SWEDE N *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU, Annex 1 para 4.3) 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.