

CERTIFICATE

No. A/14-413403 Rev 00

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INSPECTION CERTIFICATE acc to EN 10 204 3.1

Processkontroll Items AB Box 2088 444 02 STORA HÖGA SWEDEN

INSPECTION STAMP QA-TUBE

Customer References

Customer

750352 order

2014-04-10

003-00991 ITEMS

Sandvik References

Order No. Subs No. ABSMT Dispatch note

366425 569748 21717/54

ABSMT No. C.Code

300-12172 15

Material description

SEAMLESS STAINLESS COLD FINISHED

HYDRAULIC 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	ΟF	DELIVERY	•

It Product designation	Heat	Lot	Pieces	Kg	M
01 THT-3R60-8-1	538459	27065	10	10.0	60.00

8.00 X 1.00

Total 10 10.0 60.00

TEST RESULTS

Chemical composition (weight%)

Heat C Si Mn P S \mathtt{Cr} Νi Mo 538459 0.018 0.43 1.63 0.032 0.010 17.26 13.08 2.53

N

538459 0.036

Chemical composition, product (weight%)

Mn Heat C Si P S \mathtt{Cr} Νi Mo 0.007 0.033 538459 0.024 0.45 1.63 17.27 2.53 13.02

N

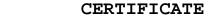
538459 0.031

Tensile test at room temperature

Yield strength Tensile strength Elongation

MPA MPa MPa % % Rp0.2 Rp1.0 4D Lot RmΑ 579 27065 319 362 49 49

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



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Hardness test

 Min
 Max

 Lot
 HRB
 HRB

 27065
 72
 74

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 8.00 X 1.00 MM HT 538459 SS LOT 27065 MADE BY SANDVIK I N 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, req.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.