

CERTIFICATE

No. A/16-617657

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Rev 00

INSPECTION CERTIFICATE acc to EN 10204 3.1

Processkontroll Items AB Box 2088 444 02 STORA H@GA

INSPECTION STAMP QA-TUBE

Customer References

Customer

order

2016-11-04

003-00991 ITEMS

754076

Sandvik References

Order No. Subs No. ABSMT Dispatch note

458990 619147 33220/54

ABSMT No. C.Code

300-54407 15

Material description

SEAMLESS STAINLESS COLD FINISHED

HYDRAULIC TUBING

Steel/material Designations

Sandvik ATST

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 17495:2015

PED 2014/68/EU EN 10216-5 TC1

HRB MAX 80

EXTENT	OF	DELIVERY

It Product designation	Heat	Lot	Pieces	Kg	M
01 THT-3R60-6-1.5	544849	02058	10	10.0	60.00

6.00 X 1.50

Total 10 10.0 60.00

58

58

TEST RESULTS

Chemical composition (weight%)

C Si Mn Ρ S \mathtt{Cr} Νi Mo 544849 0.021 0.42 1.60 0.030 0.007 17.26 13.22 2.62

N

544849 0.036

Chemical composition, product (weight%)

353

Mn Heat C Si P S \mathtt{Cr} Νi Mo 0.029 0.006 544849 0.023 0.47 1.58 17.21 2.61 13.14

N

544849 0.035

02058

Tensile test at room temperature

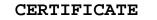
319

Yield strength Tensile strength Elongation

567

MPAMPa MPa % % Rp0.2 Rp1.0 4D Lot RmΑ

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



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Hardness test

 Min
 Max

 Lot
 HRB
 HRB

 02058
 73
 76

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 6.00 X 1.50 MM HT 544849 SS LOT 02058 MADE IN SWEDEN *OA-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.