

CERTIFICATE

No. A/16-552813

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Rev 00

INSPECTION CERTIFICATE acc to EN 10204 3.1

Processkontroll Items AB

Box 2088

444 02 STORA HÖGA

SWEDEN

INSPECTION STAMP

QA-TUBE

Customer References

752934 order

2016-01-27

Customer

003-00991 ITEMS

Sandvik References

Order No. Subs No. ABSMT Dispatch note

429903 603888 13633/54

ABSMT No. C.Code

300-41363 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-213-15A AW, ASME SA-213-ED-13 AW, ASTM A-269-14

NACE MR0175/ISO 15156-3:2009

PED 97/23/EC EN 10216-5 TC1

HRB MAX 80

EXTENT OF DELIVERY

Heat It Product designation Pieces Lot Kg M 24.00

01 THT-3R60-20-1.5 543739 49874 16.0 20.00 X 1.50

Total 4 16.0

TEST RESULTS

Chemical composition (weight%)

Heat C Si Mn P S CrΝi Mo 543739 0.38 1.59 0.030 0.007 17.28 13.15 2.58 0.016

N

543739 0.038

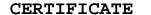
Chemical composition, product (weight%)

Heat C Si Mn P S \mathtt{Cr} Νi Mo 0.032 0.006 543739 0.016 0.39 1.59 17.34 2.57 13.17

N

0.044 543739

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



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Tensile		n temperature	m	-1	
	Yield strength		Tensile strength	Elongation	
	MPA	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
49874	303	343	589	53	55
	306	347	588	54	54

Hardness test

	Min	Max	
Lot	HRB	HRB	
49874	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 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 AW EN 1.4 435 TP316/316L CFA SMLS NDE 20.00 X 1.50 MM HT 543739 SS LOT 49874 MADE BY SAN DVIK 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.