

EN 10 204 3.1

## CERTIFICATE

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Box 2088

444 02 STORA HÖGA

Processkontroll Items AB

SWEDEN

INSPECTION STAMP

QA-TUBE

Customer References

Customer

INSPECTION CERTIFICATE acc to

750403 order

2014-04-24

003-00991 ITEMS

Sandvik References

Order No. Subs No. ABSMT Dispatch note

367721 570505 22321/54

ABSMT No. C.Code

300-12795 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 OF DELIVERY

It Product designation Heat Lot Pieces Kg M

01 THT-3R60-16-1 047992 98890 15 35.0 90.00

16.00 X 1.00

Total 15 35.0 90.00

KEY TO HEAT KEY TO LOT

Heat Code Heat No. Lot Code Lot No.

047992 536843 98890 175952

TEST RESULTS

Chemical composition (weight%)

047992 0.019 0.38 1.63 0.026 0.008 17.31 13.13 2.52

N

047992 0.041

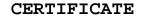
Chemical composition, product (weight%)

Heat C Si Mn P S  $\mathtt{Cr}$ Νi Mo 0.018 0.37 0.027 0.008 17.30 047992 1.62 13.12 2.51

N

047992 0.038

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



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Tensile test at room temperatur	Tensile	test	at	room	temperature
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	Yield st	trength	Tensile strengt	h Elon	gation
	MPA 1	MPa	MPa	%	%
Lot	Rp0.2 I	Rp1.0	Rm	A	2"
98890	304	343	568	44	44
	285	327	562	43	45

### Hardness test

	Min	Max HRB	
Lot	HRB		
98890	70	70	

# 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 TP 316/TP 31 6L EN 1.4435 M S PK1 NDE 16.00 X 1.00 MM HT 536843 SG LOT 175952 MADE BY SANDVIK \*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.



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TEST	RESULTS	TRANSFERRED	FROM	CERTIFICATE	NO	43323