

**CERTIFICATE****No. A/15-532208 Rev 00**
Date 2015-10-21 Page 1/2INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE**Customer References**Customer
order
2015-10-12

003-00991 ITEMS**Sandvik References**Order No. Subs No. ABSMT Dispatch note
419768 598301 07440/54
ABSMT No. C.Code
300-36612 15**Material description**SEAMLESS STAINLESS COLD FINISHED
HYDRAULIC TUBING**Steel making process**

Electric furnace

Steel/material DesignationsSandvik AISI
3R60 TP316/TP316L
EN no
1.4435**Technical requirements**ASTM A-213-15A AW, ASME SA-213-ED-13 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-3R60-12-1 12.00 X 1.00	048183	47696	60	102.0	360.00
Total				60	102.0	360.00

KEY TO HEAT

Heat Code	Heat No.
048183	542214

TEST RESULTS**Chemical composition (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048183	0.019	0.42	1.66	0.030	0.0070	17.33	13.11	2.52
048183	N 0.036							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048183	0.020	0.43	1.65	0.032	0.0070	17.36	13.10	2.53
048183	N 0.039							

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

**CERTIFICATE****No. A/15-532208****Rev 00****Date 2015-10-21****Page 2/2****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
47696	312	353	574	57	52

Hardness test

	Min	Max
Lot	HRB	HRB
47696	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 12.00 X 1.00 MM HT 542214 SS LOT 47696 MADE BY SANDVIK 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.