

**CERTIFICATE****No. A/17-643707****Rev 00****Date 2017-03-12****Page 1/3**INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDENINSPECTION STAMP
QA-TUBE**Customer References**

754345

Customer
order
2017-01-11

003-00991 ITEMS

Sandvik ReferencesOrder No. Subs No. ABSMT Dispatch note
465693 622685 40967/54
ABSMT No. C.Code
300-57261 46**Material description**SEAMLESS STAINLESS COLD FINISHED
HYDRAULIC TUBING**Steel making process**

Electric furnace

Steel/material DesignationsSandvik SS
3R60 2353
AISI EN no
TP316/TP316L 1.4435**Technical requirements**SS 219713
Condition No -24
ASTM A-213-15C AW, ASME SA-213-ED-15 AW, ASTM A-269-15A
NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17945:2015
PED 2014/68/EU EN 10216-5 TC1
HRB MAX 80**EXTENT OF DELIVERY**

It	Product designation	Heat	Lot	Pieces	Kg	M
01	THT-3R60-16-2 16.00 X 2.00	048349	94610	40	166.0	240.00

Total	40	166.0	240.00
-------	----	-------	--------

KEY TO HEAT

Heat Code	Heat No.
048349	546689

KEY TO LOT

Lot Code	Lot No.
94610	183131

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048349	0.019	0.45	1.58	0.031	0.010	17.29	13.05	2.62
	N							
048349	0.037							

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

**CERTIFICATE**

No. A/17-643707 Rev 00
Date 2017-03-12 Page 2/3

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048349	0.019	0.45	1.59	0.032	0.010	17.36	13.08	2.64
	N							
048349	0.035							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation
	MPa	MPa	MPa	%
94610	Rp0.2	Rp1.0	Rm	A
	274	312	565	47
	274	311	570	47
	280	319	576	45

Hardness test

Lot	HRB	
94610	74	76
	76	76

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- Leak test: Eddy current test acc to SS 114301/114305 E1, EN 10893-1 and ASME SA-1016
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

Marking:

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 TP 316/TP 316L EN 1.4435 CFA SML NDE 16.00 X 2.00 MM HT 546689 SG LOT 183131 MADE BY SANDVIK *QA-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.



CERTIFICATE

No. A/17-643707 **Rev 00**
Date 2017-03-12 **Page 3/3**

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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 183131