

**CERTIFICATE****No. A/18-744438 Rev 00**
Date 2018-05-20 Page 1/3INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDENINSPECTION STAMP
QA-TUBE**Customer References**Customer
order
2018-04-09

003-00991 ITEMS**Sandvik References**Order No. Subs No. ABSMT Dispatch note
510436 649311 21764/54
ABSMT No. C.Code
300-79293 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-213-17 AW, ASME SA-213-ED-17 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
02	THT-3R60-16-1	048657	95856	7	16.0	42.00
	16.00 X 1.00					

Total	7	16.0	42.00
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KEY TO HEAT

Heat Code	Heat No.
048657	551291

KEY TO LOT

Lot Code	Lot No.
95856	0002002515

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048657	0.018	0.39	1.75	0.031	0.008	17.48	13.04	2.64
	N							
048657	0.036							

Quality assurance - Sofia Åkesson / Q-Manager
MTC Service / Certificates

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Chemical composition, product (weight%)

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
95856	0.020	0.43	1.76	0.032	0.009	17.45	13.14	2.66
	N							
95856	0.038							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
95856	286	327	562	50	48
	287	329	564	55	50

Hardness test

Lot	Min	Max
	HRB	HRB
95856	64	72

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- 100% PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- 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 TP 316/TP 316L EN 1.4435 COLD SML NDE 16.00 X 1.00 MM **SAKNAS** HT 551291 SG LOT 000200 2515 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.



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The certificate is produced with EDP and valid without signature.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 0002002515