

**CERTIFICATE****No. V/17-081162****Rev 00****Date 2017-12-18****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**

755833

Sandvik ReferencesOrder No. Subs No. Dispatch note
500566 161422 178480
Suppl. No C.Code
161422 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 requirementsASTM A-213-17 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	Kg	M
01	THT-3R60-12-2 12.00 X 2.00	048542	33303	30.0	60.00
Total				30.0	60.00

KEY TO HEAT

Heat Code	Heat No.
048542	549034

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048542	0.021	0.39	1.62	0.033	0.0070	17.32	13.13	2.63
	N							
048542	0.034							

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

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Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048542	0.022	0.40	1.62	0.033	0.0050	17.37	13.16	2.65
	N							
048542	0.037							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
33303	287	322	583	48	47

Hardness test

Lot	Min	Max
	HRB	HRB
33303	73	76

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- 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 AW EN 1.44 35 TP316/316L CFA SML NDE 12.00 X 2.00 MM HT 549034 SS LOT 33303 MADE IN SWEDEN *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.