

**CERTIFICATE****No. V/17-076096****Rev 00****Date 2017-10-26****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**

755612

Sandvik ReferencesOrder No. Subs No. Dispatch note
495341 160267 176814
Suppl. No C.Code
160267 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-3R60-12-1.5 12.00 X 1.50	048505	30772	35.5	90.00
Total				35.5	90.00

KEY TO HEAT

Heat Code	Heat No.
048505	548720

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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048505	0.020	0.40	1.66	0.030	0.0090	17.14	13.08	2.63
048505	N 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
048505	0.020	0.41	1.66	0.029	0.0060	17.22	13.05	2.63
	N							
048505	0.038							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
30772	323	357	591	54	52

Hardness test

Lot	Min	Max
	HRB	HRB
30772	77	78

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 1.50 MM HT 548720 SS LOT 30772 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.