



CERTIFICATE

No. A/17-632913

Rev 00

Date 2017-01-25

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INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References		
754409	Customer order 2017-01-25	Order No. 467172	Subs No. 623524	ABSMT Dispatch note 37690/54
003-00991	ITEMS	ABSMT No. 300-57968	C.Code 15	

Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	Steel/material Designations Sandvik 3R60 EN no 1.4435
Steel making process Electric furnace	AISI TP316/TP316L

Technical requirements ASTM A-213-15C AW, ASME SA-213-ED-15 AW, ASTM A-269-15A NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17495:2015 PED 2014/68/EU EN 10216-5 TC1 HRB MAX 80

EXTENT OF DELIVERY						
It	Product designation	Heat	Lot	Pieces	Kg	M
02	THT-3R60-12-1.5 12.00 X 1.50	048307	18799	8	19.0	48.00
				Total	8	19.0 48.00

KEY TO HEAT	
Heat Code	Heat No.
048307	545888

TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048307	0.018	0.39	1.60	0.031	0.0100	17.23	13.07	2.63
	N							
048307	0.036							

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

**Chemical composition, product (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048307	0.018	0.40	1.59	0.030	0.0090	17.28	13.03	2.62
	N							
048307	0.035							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
18799	286	322	570	58	56

Hardness test

Lot	Min	Max
	HRB	HRB
18799	77	79

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 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 545888 SS LOT 18799 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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