



CERTIFICATE

No. A/17-642556

Rev 00

Date 2017-03-06

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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		
754624	Customer order 2017-03-06	Order No. 471543	Subs No. 625925	ABSMT Dispatch note 40595/54
003-00991	ITEMS	ABSMT No. 300-60090	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 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-3R60-12-2 12.00 X 2.00	048339	21861	10	31.0	60.00		
				Total	10	31.0	60.00	
KEY TO HEAT								
Heat Code	Heat No.							
048339	545763							
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048339	0.020	0.38	1.51	0.032	0.0100	17.39	13.20	2.71
	N							
048339	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
048339	0.020	0.38	1.52	0.032	0.0100	17.31	13.25	2.73
	N							
048339	0.032							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
21861	349	383	600	52	51

Hardness test

Lot	Min	Max
	HRB	HRB
21861	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
- 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 545763 SS LOT 21861 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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