



CERTIFICATE

No. A/16-605856

Rev 00

Date 2016-09-26

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INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
753861	Customer order 2016-09-19	Order No. 454098	Subs No. 616619
003-00991	ITEMS	ABSMT No. 300-52329	C.Code 15
		ABSMT Dispatch note 29301/54	

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 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		
01	THT-3R60-6-1 6.00 X 1.00	048266	15368	50	38.0	300.00		
				Total	50	38.0	300.00	
KEY TO HEAT								
Heat Code	Heat No.							
048266	544787							
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048266	0.018	0.38	1.61	0.031	0.0080	17.33	13.14	2.63
	N							
048266	0.048							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048266	0.019	0.41	1.60	0.031	0.0100	17.28	13.07	2.62
	N							
048266	0.048							

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

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	4D
15368	353	394	595	52	49

Hardness test

Lot	Min	Max
	HRB	HRB
15368	73	75

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 6.00 X 1.00 MM HT 544787 SS LOT 15368 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) 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.

No unauthorized alterations. The contents of this Inspection
Certificate may not be modified or revised in any way without the
prior written approval of AB Sandvik Materials Technology.
Unauthorized alterations to the Inspection Certificate, including
introduction of false, fictitious or fraudulent statements or entries,
may be punishable by fines, imprisonment, or both. This Inspection
Certificate may be copied only in the manner and for the purposes
specified in Section 6 of EN 10204:2004. Contravention of this notice
will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.