



CERTIFICATE

No. A/17-639812

Rev 00

Date 2017-02-22

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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	
754530	Customer order 2017-02-15	Order No. 469514	Subs No. 624832
003-00991	ITEMS	ABSMT No. 300-59126	C.Code 46
		ABSMT Dispatch note 39616/54	

Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	Steel/material Designations Sandvik SS 3R60 2353 AISI EN no TP316/TP316L 1.4435
Steel making process Electric furnace	

Technical requirements SS 219713 Condition No -24 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
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EXTENT OF DELIVERY							
It	Product designation	Heat	Lot	Pieces	Kg	M	
02	THT-3R60-20-2.5 20.00 X 2.50	545517	57265	15	98.0	90.00	
				Total	15	98.0	90.00

TEST RESULTS									
Chemical composition (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
545517	0.021	0.42	1.58	0.032	0.008	17.26	13.09	2.63	
	N								
545517	0.039								
Chemical composition, product (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
545517	0.018	0.44	1.58	0.032	0.007	17.32	13.08	2.63	
	N								
545517	0.039								

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

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation
	MPa	MPa	MPa	%
57265	Rp0.2	Rp1.0	Rm	A
	291	327	596	57
	289	324	596	56

Hardness test

Lot	HRB	
57265	77	76
	78	78
	78	77
	77	77

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- Leak test: Eddy current test acc to SS 114301/114305 E1, EN 10893-1 and ASME SA-1016
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

Marking:

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 AW EN 1.44 35 TP316/316L CFD SML NDE 20.00 X 2.50 MM HT 545517 SS LOT 57265 MADE BY SANDVIK 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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