



CERTIFICATE

No. A/17-675725

Rev 00

Date 2017-08-03

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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	
754968	Customer order 2017-05-18	Order No. 478941	Subs No. 630149
003-00991	ITEMS	ABSMT No. 300-63531	C.Code 46
		ABSMT Dispatch note 01331/54	

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-213-17 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	Pieces	Kg	M		
01	THT-3R60-16-2 16.00 X 2.00	048395	94797	100	405.0	600.00		
				Total	405.0	600.00		
KEY TO HEAT				KEY TO LOT				
Heat Code	Heat No.			Lot Code	Lot No.			
048395	547816			94797	0002001456			
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048395	0.022	0.44	1.61	0.028	0.01	17.26	13.21	2.63
	N							
048395	0.038							

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

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

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
94797	0.020	0.44	1.60	0.029	0.008	17.27	13.25	2.63
	N							
94797	0.037							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation
	MPa	MPa	MPa	%
Lot	Rp0.2	Rp1.0	Rm	A
94797	234	277	554	46
	233	277	554	45
	245	286	559	45
	235	278	553	50

Hardness test

Lot	HRB	
94797	73	73
	72	75

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 TP 316/TP 316L EN 1.4435 COLD SML NDE 16.00 X 2.00 MM **SAKNAS** HT 547816 SG LOT 000200 1456 MADE BY SANDVIK *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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 0002001456