

**CERTIFICATE****No. A/17-665433 Rev 00**
Date 2017-06-12 Page 1/3INSPECTION CERTIFICATE acc to
EN 10204 3.1Processkontroll Items AB
Box 2088
444 02 STORA H@GA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
754906	Customer order 2017-05-09	Order No. 477872	Subs No. 629549
003-00991 ITEMS		ABSMT No. 300-63071	Dispatch note 46847/54
		C.Code 46	

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	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	048419	94722	100	411.0	600.00		
Total				100	411.0	600.00		
KEY TO HEAT		KEY TO LOT						
Heat Code	Heat No.	Lot Code	Lot No.					
048419	546927	94722	0020000931					
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048419	0.018	0.37	1.60	0.031	0.009	17.27	13.03	2.64
	N							
048419	0.043							
Quality assurance - Lars-Åke Bergqvist / QA-manager MTC Service / Certificates								

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Chemical composition, product (weight%)

Lot	C	Si	Mn	P	S	Cr	Ni	Mo
94722	0.017	0.38	1.59	0.032	0.008	17.32	13.06	2.65
	N							
94722	0.039							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation
	MPa	MPa	MPa	%
	Rp0.2	Rp1.0	Rm	A
94722	237	277	561	48
	233	270	552	49
	232	272	548	49
	250	294	588	47

Hardness test

Lot	HRB	
94722	75	76
	77	77

Following controls/tests have been satisfactorily performed:

- Flattening test according to ASME SA-1016 and EN ISO 8492.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc. to ASTM A-262 Pr.E.
- 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 546927 SG LOT 002000 0931 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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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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 0002000931