



CERTIFICATE

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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	
754127	Customer order 2016-11-21	Order No. 460758	Subs No. 620068
003-00991	ITEMS	ABSMT No. 300-55200	Dispatch note 33556/54
		C.Code 15	

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-3R60-20-1.5 20.00 X 1.50	546098	15603	4	16.0	24.00
				Total	4	16.0 24.00

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
546098	0.020	0.37	1.63	0.032	0.009	17.28	13.09	2.63
	N							
546098	0.033							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
546098	0.018	0.37	1.63	0.031	0.009	17.35	13.18	2.64
	N							
546098	0.033							

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	2"
15603	304	341	588	51	51
	292	329	576	56	56

Hardness test

Lot	Min	Max
	HRB	HRB
15603	75	77

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 20.00 X 1.50 MM HT 546098 SS LOT 15603 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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The certificate is produced with EDP and valid without signature.