



CERTIFICATE

No. A/14-434744

Rev 01

Date 2014-07-29

Page 1/3

Rev.date 2014-09-12

INSPECTION CERTIFICATE acc to
EN 10 204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
750644	Customer order 2014-06-25	Order No. 374106	Subs No. 574059
003-00991	ITEMS	ABSMT No. 300-15684	Dispatch note 27104/54
		C.Code 15	

Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	Steel/material Designations Sandvik SS 3R60 2353/2343 AISI EN no TP316/TP316L 1.4435
Steel making process Electric furnace	

Technical requirements
 ASTM A-213-13 AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-13
 NACE MR0175/ISO 15156-3:2009
 PED 97/23/EC EN 10216-5 TC1
 HRB MAX 80, SS219713 condition -24

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg	M
01	THT-3R60-8-1.5	537235	20605	9	13.0	54.00
	8.00 X 1.50	539447	30533	15	22.0	90.00
				Total	35.0	144.00

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
537235	0.020	0.37	1.66	0.030	0.009	17.35	13.28	2.53
539447	0.020	0.38	1.59	0.029	0.009	17.44	13.07	2.55
	N							
537235	0.034							
539447	0.036							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
537235	0.019	0.38	1.65	0.031	0.006	17.33	13.22	2.54
539447	0.024	0.41	1.59	0.030	0.006	17.55	13.11	2.55
	N							
537235	0.035							
539447	0.037							

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
20605	264	309	551	57	57
30533	284	320	556	52	52

Hardness test

Lot	Min	Max
	HRB	HRB
20605	69	70
30533	72	74

Following controls/tests have been satisfactorily performed:

- 100% Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Leak test: Eddy current test acc to EN 10246-2, 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/ASME A/SA-213AW A-269 EN 10216-5 TC1 EN 10305-1 EN 1.4435 TP 316/316L COLD SMLS NDE 8.00 X 1.50 MM HT 537235 SS LOT 20605 MADE BY SANDVIK I N SWEDEN *QA-TUBE*

SANDVIK 3R60 ASTM/ASME A/SA-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD EN 1.4435 TP316/316L CFA SMLS NDE 8.00 X 1.50 MM HT 539447 SS LOT 30533 MADE BY SANDVIK IN SWEDEN *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (97/23/EC) 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.



Rev.date 2014-09-12

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.