



CERTIFICATE

No. A/14-408063

Rev 00

Date 2014-03-26

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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		
750270	Customer order 2014-03-26	Order No. 364600	Subs No. 568726	ABSMT Dispatch note 20187/54
003-00991	ITEMS	ABSMT No. 300-11289	C.Code 15	

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

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

EXTENT OF DELIVERY							
It	Product designation	Heat	Lot	Pieces	Kg	M	
02	THT-3R60-8-1.5 8.00 X 1.50	537235	20603	10	14.0	60.00	
				Total	10	14.0	60.00

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
	N							
537235	0.034							

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
	N							
537235	0.035							

Tensile test at room temperature

Lot	Yield strength		Tensile strength		Elongation	
	MPa	MPa	MPa		%	%
	MPa	MPa	MPa		%	%
	Rp0.2	Rp1.0	Rm		A	4D
20603	263	303	556		56	56

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

**Hardness test**

	Min	Max
Lot	HRB	HRB
20603	68	70

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 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 20603 MADE BY SANDVIK I N 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.

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.