



CERTIFICATE

No. V/14-069712 Rev 00
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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 750800	Sandvik References Order No. Subs No. Dispatch note 379833 136670 143196 Suppl. No C.Code 136670 15
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Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING Steel making process Electric furnace	Steel/material Designations Sandvik AISI 3R60 TP316/TP316L EN no 1.4435
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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

EXTENT OF DELIVERY									
It	Product designation	Heat	Lot	Kg	M				
02	THT-3R60-16-1 16.00 X 1.00	048013	98952	27.0	72.00				
				Total	27.0	72.00			
KEY TO HEAT					KEY TO LOT				
Heat Code	Heat No.				Lot Code	Lot No.			
048013	538081				98952	176934			
TEST RESULTS									
Chemical composition (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
048013	0.018	0.40	1.49	0.030	0.011	17.34	13.11	2.55	
	N								
048013	0.040								
Chemical composition, product (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
048013	0.018	0.39	1.47	0.029	0.008	17.27	13.05	2.52	
	N								
048013	0.035								

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"
98952	279	326	566	45	45
	289	340	569	44	44
	286	334	564	45	44
	287	335	566	43	44
	290	338	566	44	43

Hardness test

Lot	Min	Max
	HRB	HRB
98952	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 TP 316/TP 316L EN 1.4435 M S PK1 NDE 16.00 X 1.00 MM HT 538081 SG LOT 176934 MADE BY SANDVIK *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.



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The certificate is produced with EDP and valid without signature.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 44243