



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	
713393/Holmgren	Customer order 2013-10-28	Order No. 349183	Subs No. 560053
003-00991 ITEMS		ABSMT No. 300-94263	Dispatch note 11172/54
		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-213-11A 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
01	THT-3R60-10-2 10.00 X 2.00	537235	20543	15	36.0	90.00
				Total	15	36.0 90.00

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	2"
20543	275	310	555		52	52

Quality assurance - Ulrik Rodling / QA-manager
MTC Service / Certificates

**Hardness test**

	Min	Max
Lot	HRB	HRB
20543	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 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 10.00 X 2.00 MM HT 537235 SS LOT 20543 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.

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The certificate is produced with EDP and valid without signature.