

**CERTIFICATE****No. A/12-234990****Rev 00****Date 2012-03-12****Page 1/2**INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References		Sandvik References	
711209	Customer order 2012-03-12	Order No. 283329	Subs No. 522456
003-00991 ITEMS		ABSMT No. 300-62010	ABSMT Dispatch note 17176/54
		C.Code 15	

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

Technical requirements
ASTM A-213-09A AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-08 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-3R60-6-1 6.00 X 1.00	531060	38776	25	18.0	150.00
Total				25	18.0	150.00
TEST RESULTS						
Chemical composition (weight%)						
Heat	C	Si	Mn	P	S	Cr
531060	0.017	0.39	1.60	0.031	0.008	17.26
	N					Ni
531060	0.035					13.15
						Mo
						2.53
Chemical composition, product (weight%)						
Heat	C	Si	Mn	P	S	Cr
531060	0.022	0.39	1.60	0.032	0.007	17.24
	N					Ni
531060	0.042					13.11
						Mo
						2.52
Tensile test at room temperature						
Yield strength			Tensile strength		Elongation	
MPa			MPa		%	
Rp0.2			Rm		A	
Rp1.0					4D	
Lot						
38776	293	333	558		57	54

Quality assurance - Per Eriksson / QA-manager
MTC Service / Certificates

**Hardness test**

	Min	Max
Lot	HRB	HRB
38776	67	69

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 and quenched.

Marking:

SANDVIK 3R60 ASTM/ASME A/SA-213AW A-269 EN 10216-5 TC1 EN 10305-1 SS 2353 EN 1.4435 TP316/316L M S PK1 NDE 6.00 X 1.00 MM HT 531060 SS LOT 38776 COLD 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.

The certificate is produced with EDP and valid without signature.