



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		
711070	Customer order 2012-02-06	Order No. 278492	Subs No. 519606	ABSMT Dispatch note 13924/54
003-00991	ITEMS	ABSMT No. 300-59596	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-3R60-16-2	530790	37611	26	111.0	156.00
	16.00 X 2.00	530784	38458	1	4.0	6.00
			Total	27	115.0	162.00

TEST RESULTS									
Chemical composition (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
530784	0.025	0.37	1.65	0.030	0.008	17.28	13.06	2.52	
530790	0.024	0.41	1.78	0.029	0.009	17.27	13.07	2.55	
	N								
530784	0.041								
530790	0.038								
Chemical composition, product (weight%)									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo	
530784	0.027	0.38	1.64	0.032	0.006	17.36	13.07	2.52	
530790	0.026	0.41	1.78	0.029	0.008	17.23	13.08	2.55	
	N								
530784	0.033								
530790	0.032								

Quality assurance - Per Eriksson / 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"
37611	283	322	561	61	61
38458	276	311	564	58	59

Hardness test

Lot	Min	Max
	HRB	HRB
37611	78	80
38458	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 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 16.00 X 2.00 MM HT 530790 SS LOT 37611 COLD MADE BY SANDVIK IN SWEDEN *QA-TUBE*

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 16.00 X 2.00 MM HT 530784 SS LOT 38458 COLD MADE BY SANDVIK IN SWEDEN *QA-TUBE*

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.