CERTIFICATE No. V/13-030821 Rev 00

INSPECTION CERTIFICATE acc to
EN 10 204 3.1

INSPECTION STAMP
QA-TUBE

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

Customer References

712896

Sandvik References

Order No.	Subs No.	Dispatch note
334171	127018	130048

Suppl. No	C.Code
127018	15

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

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	Kg	M
01	THT-3R60-10-1 10.00 X 1.00	534940	57005	74.3	330.00
			Total	74.3	330.00

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534940	0.019	0.42	1.62	0.028	0.009	17.33	13.13	2.54

Heat	N
534940	0.043

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
534940	0.019	0.44	1.63	0.031	0.010	17.40	13.17	2.55

Heat	N
534940	0.050

Tensile test at room temperature

	Yield strength MPA	MPa	Tensile strength MPa	Elongation %	%
Lot	Rp0.2	Rp1.0	Rm	A	4D
57005	302	347	582	52	49

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

Hardness test

Lot	Min HRB	Max HRB
57005	78	80

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 1.00 MM HT 534940 SS LOT 57005 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.

The certificate is produced with EDP and valid without signature.