



CERTIFICATE

No. A/10-948507

Rev 00

Date 2010-03-18

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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		Sandvik References		
708452	Customer order 2010-03-18	Order No. 189927	Subs No. 167606	ABSMT Dispatch note 49256/54
003-00991	ITEMS	ABSMT No. 300-18972	C.Code 29	

Material description	Steel/material Designations
SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING	Sandvik AISI 3R60 TP316/TP316L EN no 1.4436/1.4435
Steel making process Electric furnace	

Technical requirements
 ASTM A-213-08 AW, ASME SA-213-ED-07 AD-08 AW, ASTM A-269-08
 NACE MR0175/ISO 15156-3:2003
 PED 97/23/EC EN 10216-5 TC1
 HRB MAX 80

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg	M
02	THT-3R60-19.05-1.65 19.05 X 1.65	523175	52861	3	13.0	18.00
				Total	3	13.0 18.00

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
523175	0.019	0.39	1.57	0.028	0.009	17.37	13.27	2.55
	N							
523175	0.037							

Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
523175	0.021	0.40	1.56	0.029	0.008	17.32	13.19	2.53
	N							
523175	0.037							

Quality assurance - Per Eriksson/ QA-manager Tube & Pipe
MTC Service / Certificates

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
52861	312	353	588	48	49
	315	357	589	48	49

Hardness test

Lot	Min	Max
	HRB	HRB
52861	77	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 ASTM A-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 1.4435 TP316/316L CO
LD SMLS NDE 19.05 X 1.65 MM 3/4'' X 16 BWG/SWG HT 523175 SS LOT 52861 DIN 2391
QA-TUBE

Approved acc. AD 2000-Merkblatt W0 and certified acc. to
Pressure Equipment Directive (97/23/EC) by
TUEV NORD GmbH; 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.