

**CERTIFICATE****No. A/11-185078 Rev 00**
Date 2011-08-24 Page 1/2INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References 710421 003-00991 ITEMS Customer order 2011-08-24		Sandvik References Order No. Subs No. ABSMT Dispatch note 257246 509310 47529/54 ABSMT No. C.Code 300-49594 29																																																																									
Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING Steel making process Electric furnace		Steel/material Designations Sandvik AISI 3R60 TP316/TP316L EN no 1.4435																																																																									
Technical requirements ASTM A-213-09A AW, ASME SA-213-ED-10 AW, ASTM A-269-08 NACE MR0175/ISO 15156-3:2009 PED 97/23/EC EN 10216-5 TC1 HRB MAX 80																																																																											
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Quality assurance - Ulrik Rodling / QA-manager Tube & Pipe MTC Service / Certificates																																																																											

**CERTIFICATE****No. A/11-185078****Rev 00****Date 2011-08-24****Page 2/2****Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
31931	306	341	558	53	52
	304	339	557	54	53

Hardness test

Lot	Min	Max
	HRB	HRB
31931	76	79

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 1.4435 TP316/316L CO
LD SMLS NDE 12.70 X 1.65 MM 1/2'' X 16 BWG/SWG HT 529219 SS LOT 31931 DIN 2391
/EN 10305-1 *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.