

**CERTIFICATE****No. A/10-955845 Rev 00**
Date 2010-04-14 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 708553 003-00991 ITEMS Customer order 2010-04-14		Sandvik References Order No. Subs No. ABSMT Dispatch note 193119 170080 02802/54 ABSMT No. C.Code 300-20530 29																																																																																																										
Material description SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING Steel making process Electric furnace		Steel/material Designations Sandvik AISI 3R60 TP316/TP316L EN no 1.4436/1.4435																																																																																																										
Technical requirements ASTM A-213-08 AW, ASME SA-213-ED-07 AD-09B 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 <table border="1"><thead><tr><th>It</th><th>Product designation</th><th>Heat</th><th>Lot</th><th>Pieces</th><th>Kg</th><th>M</th></tr></thead><tbody><tr><td>01</td><td>THT-3R60-6.35-0.89 6.35 X .89</td><td>047375</td><td>93299</td><td>5</td><td>4.0</td><td>30.00</td></tr><tr><td colspan="4">Total</td><td>5</td><td>4.0</td><td>30.00</td></tr></tbody></table> <table border="0"><tr><td colspan="2">KEY TO HEAT</td><td colspan="2">KEY TO LOT</td></tr><tr><td>Heat Code</td><td>Heat No.</td><td>Lot Code</td><td>Lot No.</td></tr><tr><td>047375</td><td>523476</td><td>93299</td><td>349422</td></tr></table> TEST RESULTS Chemical composition (weight%) <table border="1"><thead><tr><th>Heat</th><th>C</th><th>Si</th><th>Mn</th><th>P</th><th>S</th><th>Cr</th><th>Ni</th><th>Mo</th></tr></thead><tbody><tr><td>047375</td><td>0.020</td><td>0.39</td><td>1.69</td><td>0.034</td><td>0.007</td><td>17.22</td><td>13.10</td><td>2.52</td></tr><tr><td></td><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>047375</td><td>0.049</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> Chemical composition, product (weight%) <table border="1"><thead><tr><th>Lot</th><th>C</th><th>Si</th><th>Mn</th><th>P</th><th>S</th><th>Cr</th><th>Ni</th><th>Mo</th></tr></thead><tbody><tr><td>93299</td><td>0.021</td><td>0.38</td><td>1.68</td><td>0.034</td><td>0.006</td><td>17.20</td><td>13.05</td><td>2.52</td></tr><tr><td></td><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>93299</td><td>0.049</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>				It	Product designation	Heat	Lot	Pieces	Kg	M	01	THT-3R60-6.35-0.89 6.35 X .89	047375	93299	5	4.0	30.00	Total				5	4.0	30.00	KEY TO HEAT		KEY TO LOT		Heat Code	Heat No.	Lot Code	Lot No.	047375	523476	93299	349422	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	047375	0.020	0.39	1.69	0.034	0.007	17.22	13.10	2.52		N								047375	0.049								Lot	C	Si	Mn	P	S	Cr	Ni	Mo	93299	0.021	0.38	1.68	0.034	0.006	17.20	13.05	2.52		N								93299	0.049							
It	Product designation	Heat	Lot	Pieces	Kg	M																																																																																																						
01	THT-3R60-6.35-0.89 6.35 X .89	047375	93299	5	4.0	30.00																																																																																																						
Total				5	4.0	30.00																																																																																																						
KEY TO HEAT		KEY TO LOT																																																																																																										
Heat Code	Heat No.	Lot Code	Lot No.																																																																																																									
047375	523476	93299	349422																																																																																																									
Heat	C	Si	Mn	P	S	Cr	Ni	Mo																																																																																																				
047375	0.020	0.39	1.69	0.034	0.007	17.22	13.10	2.52																																																																																																				
	N																																																																																																											
047375	0.049																																																																																																											
Lot	C	Si	Mn	P	S	Cr	Ni	Mo																																																																																																				
93299	0.021	0.38	1.68	0.034	0.006	17.20	13.05	2.52																																																																																																				
	N																																																																																																											
93299	0.049																																																																																																											
Quality assurance - Per Eriksson/ QA-manager Tube & Pipe MTC Service / Certificates																																																																																																												

**CERTIFICATE****No. A/10-955845****Rev 00****Date 2010-04-14****Page 2/2****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	4D
93299	276	313	588	69	52
	301	337	616	70	52

Hardness test

	Min	Max
Lot	HRB	HRB
93299	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 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 TP 316/TP 316L EN 1.4435 COLD SMLS NDE 6.35 X 0.89 MM 1/4" X 20 BWG/SWG HT 523476 SC LOT 349422 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.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO 00038876