

**CERTIFICATE**

No. A/11-188191 Rev 00
Date 2011-09-07 Page 1/2

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 709922 003-00991 ITEMS Customer order 2011-03-28		Sandvik References Order No. Subs No. ABSMT Dispatch note 238509 500855 48569/54 ABSMT No. C.Code 300-41032 46																																																																						
Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING Steel making process Electric furnace		Steel/material Designations Sandvik SS 3R60 2353																																																																						
Technical requirements SS 219713 Condition No -24																																																																								
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-3R60-16-2 16.00 X 2.00</td><td>047783</td><td>96697</td><td>100</td><td>426.0</td><td>600.00</td></tr><tr><td colspan="4">Total</td><td>100</td><td>426.0</td><td>600.00</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>047783</td><td>526912</td><td>96697</td><td>4850553/1-2</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>047783</td><td>0.017</td><td>0.38</td><td>1.65</td><td>0.031</td><td>0.009</td><td>17.18</td><td>13.09</td><td>2.50</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>047783</td><td>0.039</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-3R60-16-2 16.00 X 2.00	047783	96697	100	426.0	600.00	Total				100	426.0	600.00	KEY TO HEAT		KEY TO LOT		Heat Code	Heat No.	Lot Code	Lot No.	047783	526912	96697	4850553/1-2	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	047783	0.017	0.38	1.65	0.031	0.009	17.18	13.09	2.50		N								047783	0.039							
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Quality assurance - Ulrik Rodling / QA-manager Tube & Pipe MTC Service / Certificates																																																																								

**CERTIFICATE****No. A/11-188191****Rev 00****Date 2011-09-07****Page 2/2****Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation
	MPa	MPa	MPa	%
Lot	Rp0.2	Rp1.0	Rm	A
96697	237	276	559	56
	239	275	560	55
	238	276	560	60
	240	299	563	54

Following controls/tests have been satisfactorily performed:

- Flattening test.
- PMI-test.
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- Leak test: Eddy current test acc to SS 114301/114305 E1
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

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 A110950