

**CERTIFICATE****No. A/11-183828 Rev 00**
Date 2011-08-19 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 710315 003-00991 ITEMS Customer order 2011-07-14		Sandvik References Order No. Subs No. ABSMT Dispatch note 253167 507583 46832/54 ABSMT No. C.Code 300-47841 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-3R60-12-1.5 12.00 X 1.50</td><td>529120</td><td>31191</td><td>16</td><td>40.0</td><td>96.00</td></tr><tr><td colspan="4">Total</td><td>16</td><td>40.0</td><td>96.00</td></tr></tbody></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>529120</td><td>0.023</td><td>0.39</td><td>1.58</td><td>0.028</td><td>0.006</td><td>17.25</td><td>13.06</td><td>2.52</td></tr><tr><td colspan="2">N</td><td colspan="7"></td></tr><tr><td>529120</td><td>0.050</td><td colspan="7"></td></tr></tbody></table> Tensile test at room temperature <table border="1"><thead><tr><th rowspan="2">Lot</th><th colspan="2">Yield strength</th><th>Tensile strength</th><th>Elongation</th></tr><tr><th>MPa</th><th>MPa</th><th>MPa</th><th>%</th></tr><tr><th></th><th>Rp0.2</th><th>Rp1.0</th><th>Rm</th><th>A</th></tr></thead><tbody><tr><td rowspan="3">31191</td><td>284</td><td>325</td><td>569</td><td>53</td></tr><tr><td>287</td><td>329</td><td>569</td><td>52</td></tr><tr><td>286</td><td>328</td><td>568</td><td>53</td></tr></tbody></table> Following controls/tests have been satisfactorily performed: - Flattening test.				It	Product designation	Heat	Lot	Pieces	Kg	M	01	THT-3R60-12-1.5 12.00 X 1.50	529120	31191	16	40.0	96.00	Total				16	40.0	96.00	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	529120	0.023	0.39	1.58	0.028	0.006	17.25	13.06	2.52	N									529120	0.050								Lot	Yield strength		Tensile strength	Elongation	MPa	MPa	MPa	%		Rp0.2	Rp1.0	Rm	A	31191	284	325	569	53	287	329	569	52	286	328	568	53
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Quality assurance - Ulrik Rodling / QA-manager Tube & Pipe MTC Service / Certificates																																																																																							



- 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.