



**CERTIFICATE**

**No. A/13-316995**

**Rev 00**

**Date 2013-02-27**

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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

<b>Customer References</b>		<b>Sandvik References</b>		
712502	Customer order 2013-02-21	Order No. 322480	Subs No. 544992	ABSMT Dispatch note 42790/54
003-00991	ITEMS	ABSMT No. 300-81458	C.Code 46	

<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	<b>Steel/material Designations</b> Sandvik SS 3R60 2353
<b>Steel making process</b> Electric furnace	

<b>Technical requirements</b> SS 219713 Condition No -24
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<b>EXTENT OF DELIVERY</b>						
<b>It</b>	<b>Product designation</b>	<b>Heat</b>	<b>Lot</b>	<b>Pieces</b>	<b>Kg</b>	<b>M</b>
01	THT-3R60-20-2.5 20.00 X 2.50	534282	52747	15	98.0	90.00
				<b>Total</b>	15	98.0 90.00

<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
<b>Heat</b>	<b>C</b>	<b>Si</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Cr</b>	<b>Ni</b>	<b>Mo</b>
534282	0.018	0.38	1.61	0.027	0.009	17.32	13.14	2.52
	<b>N</b>							
534282	0.045							

<b>Tensile test at room temperature</b>					
	<b>Yield strength</b>		<b>Tensile strength</b>		<b>Elongation</b>
	<b>MPa</b>	<b>MPa</b>	<b>MPa</b>		<b>%</b>
<b>Lot</b>	<b>Rp0.2</b>	<b>Rp1.0</b>	<b>Rm</b>		<b>A</b>
52747	281	319	590		57
	281	319	585		58

**Quality assurance - Per Eriksson / QA-manager**  
**MTC Service / Certificates**



**Hardness test**

Lot	HRB	
52747	79	78
	77	78
	78	78
	77	77

**Following controls/tests have been satisfactorily performed:**

- Flattening test.
- Ring expansion test
- PMI-test.
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- Leak test: Eddy current test acc to ASTM A-1016.
- Visual inspection and dimensional control.

**Heat Treatment:**

Bright annealed at 1120°C.

The raw material is free from radioactive contamination.

Material free from mercury contamination.

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 9001:2008.

The certificate is produced with EDP and valid without signature.