

**CERTIFICATE**

**No. A/10-942559 Rev 00**  
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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

| Customer References |                              | Sandvik References  |                        |
|---------------------|------------------------------|---------------------|------------------------|
| 708330              | Customer order<br>2010-02-16 | Order No. 185426    | Subs No. 163989        |
| 003-00991 ITEMS     |                              | ABSMT No. 300-17005 | Dispatch note 46530/54 |
|                     |                              | C.Code 46           |                        |

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

| Technical requirements        |
|-------------------------------|
| SS 219713<br>Condition No -24 |

| EXTENT OF DELIVERY                                           |                     |       |                  |        |            |        |        |        |  |
|--------------------------------------------------------------|---------------------|-------|------------------|--------|------------|--------|--------|--------|--|
| It                                                           | Product designation |       |                  | Heat   | Lot        | Pieces | Kg     | M      |  |
| 02                                                           | THT-3R60-20-2.5     |       |                  | 523684 | 54142      | 60     | 391.0  | 360.00 |  |
| 20.00 X 2.50                                                 |                     |       |                  |        |            |        |        |        |  |
|                                                              |                     |       |                  |        |            | Total  | 60     | 391.0  |  |
|                                                              |                     |       |                  |        |            |        | 360.00 |        |  |
| TEST RESULTS                                                 |                     |       |                  |        |            |        |        |        |  |
| Chemical composition (weight%)                               |                     |       |                  |        |            |        |        |        |  |
| Heat                                                         | C                   | Si    | Mn               | P      | S          | Cr     | Ni     | Mo     |  |
| 523684                                                       | 0.019               | 0.43  | 1.58             | 0.032  | 0.006      | 17.38  | 13.23  | 2.52   |  |
| N                                                            |                     |       |                  |        |            |        |        |        |  |
| 523684                                                       | 0.049               |       |                  |        |            |        |        |        |  |
| Tensile test at room temperature                             |                     |       |                  |        |            |        |        |        |  |
| Lot                                                          | Yield strength      |       | Tensile strength |        | Elongation |        |        |        |  |
|                                                              | MPa                 | MPa   | MPa              |        | %          |        |        |        |  |
|                                                              | Rp0.2               | Rp1.0 | Rm               |        | A          |        |        |        |  |
|                                                              | 54142               | 308   | 350              | 607    |            | 53     |        |        |  |
|                                                              |                     | 309   | 352              | 606    |            | 54     |        |        |  |
|                                                              | 309                 | 353   | 608              |        | 53         |        |        |        |  |
|                                                              | 310                 | 353   | 603              |        | 51         |        |        |        |  |
| Following controls/tests have been satisfactorily performed: |                     |       |                  |        |            |        |        |        |  |
| - Ring expansion test                                        |                     |       |                  |        |            |        |        |        |  |
| Quality assurance - Per Eriksson/ 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.