

**CERTIFICATE****No. A/12-231718****Rev 00****Date 2012-02-28****Page 1/2**INSPECTION CERTIFICATE acc to  
EN 10 204 3.1Processkontroll Items AB  
Box 2088  
444 02 STORA HÖGA  
SWEDENINSPECTION STAMP  
QA-TUBE

| Customer References |                              | Sandvik References  |                              |
|---------------------|------------------------------|---------------------|------------------------------|
| 711154              | Customer order<br>2012-02-28 | Order No. 281601    | Subs No. 521453              |
| 003-00991 ITEMS     |                              | ABSMT No. 300-61119 | ABSMT Dispatch note 16035/54 |
|                     |                              | C.Code 15           |                              |

| Material description                                 | Steel/material Designations                          |
|------------------------------------------------------|------------------------------------------------------|
| SEAMLESS STAINLESS COLD FINISHED<br>HYDRAULIC TUBING | Sandvik AISI<br>3R60 TP316/TP316L<br>EN no<br>1.4435 |
| Steel making process<br>Electric furnace             |                                                      |

| Technical requirements                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------|
| ASTM A-213-09A AW, ASME SA-213-ED-10 AD-11A AW, ASTM A-269-08<br>NACE MR0175/ISO 15156-3:2009<br>PED 97/23/EC EN 10216-5 TC1<br>HRB MAX 80 |

| EXTENT OF DELIVERY                      |                                 |        |                  |        |            |       |
|-----------------------------------------|---------------------------------|--------|------------------|--------|------------|-------|
| It                                      | Product designation             | Heat   | Lot              | Pieces | Kg         | M     |
| 01                                      | THT-3R60-12-1.5<br>12.00 X 1.50 | 530839 | 37666            | 15     | 37.0       | 90.00 |
| Total                                   |                                 |        |                  | 15     | 37.0       | 90.00 |
| TEST RESULTS                            |                                 |        |                  |        |            |       |
| Chemical composition (weight%)          |                                 |        |                  |        |            |       |
| Heat                                    | C                               | Si     | Mn               | P      | S          | Cr    |
| 530839                                  | 0.017                           | 0.38   | 1.65             | 0.031  | 0.011      | 17.34 |
|                                         | N                               |        |                  |        |            | Ni    |
| 530839                                  | 0.042                           |        |                  |        |            | 13.18 |
|                                         |                                 |        |                  |        |            | Mo    |
|                                         |                                 |        |                  |        |            | 2.53  |
| Chemical composition, product (weight%) |                                 |        |                  |        |            |       |
| Heat                                    | C                               | Si     | Mn               | P      | S          | Cr    |
| 530839                                  | 0.018                           | 0.38   | 1.64             | 0.030  | 0.009      | 17.31 |
|                                         | N                               |        |                  |        |            | Ni    |
| 530839                                  | 0.035                           |        |                  |        |            | 13.11 |
|                                         |                                 |        |                  |        |            | Mo    |
|                                         |                                 |        |                  |        |            | 2.50  |
| Tensile test at room temperature        |                                 |        |                  |        |            |       |
| Yield strength                          |                                 |        | Tensile strength |        | Elongation |       |
| MPa                                     |                                 |        | MPa              |        | %          |       |
| Rp0.2                                   |                                 |        | Rm               |        | A          |       |
| Rp1.0                                   |                                 |        |                  |        | 2"         |       |
| Lot                                     |                                 |        |                  |        |            |       |
| 37666                                   | 288                             | 330    | 575              |        | 54         | 52    |

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

**Hardness test**

|       | Min | Max |
|-------|-----|-----|
| Lot   | HRB | HRB |
| 37666 | 71  | 73  |

**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 EN 10246-2, ASME SA-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 EN 10305-1 SS 2353 EN 1.4435 TP316/316L M S PK1 NDE 12.00 X 1.50 MM HT 530839 SS LOT 37666 COLD MADE BY SANDVIK IN SWEDEN \*QA-TUBE\*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (97/23/EC) by TUEV NORD; 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.