



## CERTIFICATE

A03/Z02

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A02/Z03

INSPECTION CERTIFICATE acc to  
EN 10204 3.1

A06

PROCESSKONTROLL ITEMS AB  
BOX 2088  
444 02 STORA HÖGA  
SWEDENINSPECTION STAMP  
QA-TUBE

| Customer References | A07                          | Sandvik References                                                                                   | A08 |
|---------------------|------------------------------|------------------------------------------------------------------------------------------------------|-----|
| 759025              | Customer order<br>2020-01-16 | Order No. Subs No. ABSMT Dispatch note<br>548076 679716 11362/54<br>ABSMT No. C.Code<br>300-15786 29 |     |
| 003-00991 ITEMS     |                              |                                                                                                      |     |

| Material description                                       | B01/B04 | Steel/material Designations                          | B02 |
|------------------------------------------------------------|---------|------------------------------------------------------|-----|
| SEAMLESS STAINLESS COLD FINISHED<br>INSTRUMENTATION TUBING |         | Sandvik AISI<br>3R60 TP316/TP316L<br>EN no<br>1.4435 |     |
| Steel making process<br>Electric furnace                   | C70     |                                                      |     |

| Technical requirements                                                                                                                                                 | B03 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ASTM A-213-18B AW, ASME SA-213-ED-17 AW, ASTM A-269-15A<br>NACE MR0175/ISO 15156-3:-2015, NACE MR0103/ISO 17945-1:-2015<br>PED 2014/68/EU EN 10216-5 TC1<br>HRB MAX 80 |     |

| EXTENT OF DELIVERY                      |                                    |       |       |        |       |        | B07-B13 |        |
|-----------------------------------------|------------------------------------|-------|-------|--------|-------|--------|---------|--------|
| It                                      | Product designation                |       |       | Heat   | Lot   | Pieces | Kg      | M      |
| 01                                      | THT-3R60-12.7-1.24<br>12.70 X 1.24 |       |       | 557381 | 18971 | 25     | 54.0    | 150.00 |
| Total                                   |                                    |       |       |        |       | 25     | 54.0    | 150.00 |
| TEST RESULTS                            |                                    |       |       |        |       |        |         |        |
| Chemical composition (weight%)          |                                    |       |       |        |       |        |         |        |
| Heat                                    | C                                  | Si    | Mn    | P      | S     | Cr     | Ni      | Mo     |
| 557381                                  | 0.020                              | 0.48  | 1.55  | 0.033  | 0.007 | 17.44  | 13.09   | 2.62   |
|                                         | Co                                 | Ti    | Al    | N      |       |        |         |        |
| 557381                                  | 0.11                               | 0.034 | 0.007 | 0.035  |       |        |         |        |
| Chemical composition, product (weight%) |                                    |       |       |        |       |        |         |        |
| Heat                                    | C                                  | Si    | Mn    | P      | S     | Cr     | Ni      | Mo     |
| 557381                                  | 0.019                              | 0.50  | 1.55  | 0.034  | 0.006 | 17.47  | 13.17   | 2.62   |
|                                         | N                                  |       |       |        |       |        |         |        |
| 557381                                  | 0.031                              |       |       |        |       |        |         |        |

Quality assurance - Sofia Åkesson / Q-Manager  
MTC Service / Certificates

A05/Z02

A01

AB SANDVIK MATERIALS TECHNOLOGY Reg No. 556234-6832 VAT No. SE556234683201  
SE-81181 SANDVIKEN SWEDEN www.materials.sandvik mtc\_service.smt@sandvik.com

**Tensile test at room temperature**

| Lot   | Yield strength |       | Tensile strength | Elongation |    |
|-------|----------------|-------|------------------|------------|----|
|       | MPa            | MPa   | MPa              | %          | %  |
| Lot   | Rp0.2          | Rp1.0 | Rm               | A          | 2" |
| 18971 | 300            | 337   | 593              | 50         | 47 |

**Hardness test**

| Lot   | Min | Max |
|-------|-----|-----|
|       | HRB | HRB |
| 18971 | 77  | 78  |

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

- Flattening test.
- Flaring test
- 100% PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- Leak test: Eddy current test acc to EN ISO 10893-1, ASME SA-1016.
- Visual inspection and dimensional control.

**Heat Treatment:**

Solution annealed at a temperature of Min 1040° C and quenched.

**Marking:**

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4436 EN 1.4435 TP316/316L CFA SML NDE 12.70 X 1.24 MM 1/2" X 18 BWG/SWG HT 557381 SS LOT 18971 MADE IN SWEDEN \*QA-TUBE\*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU, Annex 1 para 4.3) 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 9001:2015.

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The certificate is produced with EDP and valid without signature.

