

**A02/Z03**

INSPECTION CERTIFICATE acc to  
EN 10204 3.1

**A06**

PROCESSKONTROLL ITEMS AB  
BOX 2088  
444 02 STORA HÖGA  
SWEDEN

INSPECTION STAMP

QA-TUBE

|                                                                                                                                                                 |                                                                |                                                                                                                                                                            |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <div>Customer References</div> <div>762630</div> <div>003-00991 ITEMS -W</div>                                                                                  | <div>A07</div> <div>Customer order</div> <div>2022-05-16</div> | <div>Alleima References</div> <div>Order No. 586179</div> <div>Subs No. 710920</div> <div>Dispatch note 20360/54</div> <div>Suppl. No 300-43824</div> <div>C.Code 29</div> | <div>A08</div> |
| <div>Material description</div> <div>SEAMLESS STAINLESS COLD FINISHED INSTRUMENTATION TUBING</div> <div>Metallurgical process</div> <div>Electric furnace</div> | <div>B01/B04</div> <div>C70</div>                              | <div>Steel/material Designations</div> <div>Alleima 3R60</div> <div>EN no 1.4435</div> <div>AISI TP316/TP316L</div>                                                        | <div>B02</div> |

|                                                                                                                                                                                                        |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Technical requirements</b><br>ASTM A-213-19 AW, ASME SA-213-ED-19 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 | <b>B03</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|

|                                |                                    |          |       |            |       |            |         |            |
|--------------------------------|------------------------------------|----------|-------|------------|-------|------------|---------|------------|
| EXTENT OF DELIVERY             |                                    |          |       |            |       |            | B07-B13 |            |
| It                             | Product designation                |          |       | Heat       | Lot   | Pieces     | Kg      | M          |
| 01                             | THT-3R60-12.7-1.65<br>12.70 X 1.65 |          |       | 044287     | 95991 | 15         | 41.0    | 90.00      |
|                                |                                    |          |       |            |       | Total      | 15      | 41.0 90.00 |
| KEY TO HEAT                    |                                    |          |       | KEY TO LOT |       |            |         |            |
| Heat Code                      |                                    | Heat No. |       | Lot Code   |       | Lot No.    |         |            |
| 044287                         |                                    | 565735   |       | 95991      |       | 2070354-11 |         |            |
| TEST RESULTS                   |                                    |          |       |            |       |            |         |            |
| Chemical composition (weight%) |                                    |          |       |            |       |            |         |            |
| Heat                           | C                                  | Si       | Mn    | P          | S     | Cr         | Ni      | Mo         |
| 044287                         | 0.028                              | 0.39     | 1.63  | 0.032      | 0.008 | 17.28      | 13.12   | 2.61       |
|                                | Co                                 | Ti       | Al    | N          |       |            |         |            |
| 044287                         | 0.12                               | 0.029    | 0.004 | 0.041      |       |            |         |            |

|                                                                                    |                |
|------------------------------------------------------------------------------------|----------------|
| <b>Quality assurance - Sofia Åkesson / Q-Manager</b><br>MTC Service / Certificates | <b>A05/Z02</b> |
|------------------------------------------------------------------------------------|----------------|



**Chemical composition, product (weight%)**

| Heat   | C     | Si   | Mn   | P     | S     | Cr    | Ni    | Mo   |
|--------|-------|------|------|-------|-------|-------|-------|------|
| 044287 | 0.028 | 0.40 | 1.63 | 0.032 | 0.006 | 17.31 | 13.10 | 2.62 |
|        | N     |      |      |       |       |       |       |      |
| 044287 | 0.044 |      |      |       |       |       |       |      |

**Tensile test at room temperature**

| Lot   | Yield strength |       | Tensile strength | Elongation |    |
|-------|----------------|-------|------------------|------------|----|
|       | MPa            | MPa   | MPa              | %          | %  |
|       | Rp0.2          | Rp1.0 | Rm               | A          | 2" |
| 95991 | 296            | 330   | 592              | 58         | 56 |

**Hardness test**

| Lot   | Min | Max |
|-------|-----|-----|
|       | HRB | HRB |
| 95991 | 79  | 80  |

**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:**

ALLEIMA 3R60 ASTM/ASME A/SA213 A269 COLD EN 10216-5 TC1 AW TP 316/TP 316L EN 1.4435 CFA SML 12.70 X 1.65 MM 1/2" X 16 BWG/SWG HT 565735 SZ LOT 2070354-11 M ADE BY SANDVIK IN CZECHIA \*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.



No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Alleima.

Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.

**Alleima, formerly Sandvik Materials Technology. During a brand transition period, both Sandvik and Alleima marking on products may exist.**

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO C-4812/40

