



INTYG

Nr. A/10-936514 Rev 00
Datum 2010-02-07 Sida 1/2KONTROLLINTYG enligt
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPEKTIONSSTÄMPEL
QA-TUBE

| Kundreferenser | | Sandvik Referenser | |
|----------------|-------------------------|-------------------------|--------------------------------|
| 708291 | kundorder 2010-02-05 | Order Nr. 184146 | Subs Nr. 162966 |
| 003-00991 | ITEMS | ABSMT Packnota 44924/54 | ABSMT Nr. Int.Kod 300-16418 15 |

| Materialbeskrivning | Stål/materialbeteckningar |
|---|---|
| SÖMLÖSA ROSTFRIA KALLBEARBETADE HYDRAULRÖR | Sandvik SS 3R60 2353 AISI AFNOR TP316/TP316L Z2CND17-13 W.nr DIN 1.4435 X 2 CRNIMO 18 14 3 EN no 1.4436/1.4435 |
| Smältmetod Elektrisk ugn | |

| Tekniska fordringar/krav |
|--|
| PED/23/EG, EN 10216-5 TC1 SS 219711, DIN 17458 TC1, NFA 49-117-09/85 ASTM A-213-08 AW, ASME SA-213-ED-07 AD-08 AW, ASTM A-269-08 NACE MR0175/ISO 15156-3:2003, HRB Max 80 |

| LEVERANSOMFATTNING | | | | | | | | | |
|---|-------------------------------|--------|----------------|-------|-------|------------|-------|-------|--|
| Pos | Produktbeteckning | Charge | AO | Antal | Kg | M | | | |
| 03 | THT-3R60-25-2 25.00 X 2.00 | 047098 | 92140 | 4 | 28.0 | 24.00 | | | |
| | | | | Summa | 4 | 28.0 24.00 | | | |
| NYCKEL TILL CHARGE | | | NYCKEL TILL AO | | | | | | |
| Charge kod | Charge Nr. | AO kod | AO Nr. | | | | | | |
| 047098 | 770333 | 92140 | 4843155/1-1 | | | | | | |
| PROVNINGSRESULTAT | | | | | | | | | |
| Kemisk sammansättning (vikts%) | | | | | | | | | |
| Charge | C | Si | Mn | P | S | Cr | Ni | Mo | |
| 047098 | 0.016 | 0.430 | 1.700 | 0.023 | 0.009 | 17.27 | 13.25 | 2.530 | |
| | N | | | | | | | | |
| 047098 | 0.043 | | | | | | | | |
| Kemisk sammansättning, produkt (vikts%) | | | | | | | | | |
| Charge | C | Si | Mn | P | S | Cr | Ni | Mo | |
| 047098 | 0.015 | 0.41 | 1.71 | 0.022 | 0.009 | 17.33 | 13.36 | 2.55 | |
| | N | | | | | | | | |
| 047098 | 0.043 | | | | | | | | |
| Kvalitetssäkring - Per Eriksson/ QA-manager Tube & Pipe MTC Service / Certificates | | | | | | | | | |

Dragprovning vid rumstemperatur

| Ao | Sträckgräns | | Brottgräns | Förlängning | |
|-------|-------------|-------|------------|-------------|----|
| | MPa | MPa | MPa | % | % |
| 92140 | Rp0.2 | Rp1.0 | Rm | A | 2" |
| | 258 | 289 | 591 | 55 | 59 |
| | 261 | 293 | 589 | 55 | 59 |

Hårdhetsprovning

| Ao | Min | Max |
|-------|-----|-----|
| | HRB | HRB |
| 92140 | 71 | 74 |

Följande kontroller/provningar har utförts med tillfredställande res:

- Ringvidgningsprov
- Vidgningsprov
- PMI-provning.
- Interkristallin korrosionsprovning enligt ASTM A-262 PR.E
- Interkristallin korrosionsprovning enligt EN ISO3651-2, Metod A.
- Täthetsprovning: Induktivprovning enl EN 10246-2, ASME SA-1016.
- Visuell inspektion och dimensionskontroll.

Värmebehandling:

Upplösningsbehandlat och släckt.

Märkning:

SANDVIK 3R60 ASTM/ASME A/SA-213AW/A-269 NFA 49-117 EN 10216-5 TC1 SS 2353-22
WNR 1.4435 TP 316/TP 316L Z2CND17-13 EN 1.4435 M S PK1 25.00 X 2.00 MM HT 7703
33 SZ LOT 4843155/1-1 DIN 2391 *QA-TUBE*

Godkänd enligt AD 2000-Merkblatt W0 och certifierad enligt tryckkärlsdirektivet, Pressure Equipment Directive(97/23/EG) av TUEV NORD GmbH; anmält organ, reg.no. 0045.

Antalet prover är baserat på AO-storlek före ev.delning.

De levererade produkterna uppfyller specifikationer och krav i ordern.

Materialet är tillverkat enligt ett kvalitetssystem, godkänt och certifierat mot ISO 9001.

Intyget är ADB-framställt och giltigt utan underskrift.

PROVNINGSRESULTATEN ÖVERFÖRDA FRÅN CERTIFIKAT NR A091023



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 | | |
|---------------------|------------------------------|------------------------|--------------------|---------------------------------|
| 708291 | Customer order 2010-02-05 | Order No. 184146 | Subs No. 162966 | ABSMT Dispatch note 44924/54 |
| 003-00991 | ITEMS | ABSMT No. 300-16418 | C.Code 15 | |

| Material description | Steel/material Designations |
|--|---|
| SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING | Sandvik SS 3R60 2353 AISI AFNOR TP316/TP316L Z2CND17-13 W.nr DIN 1.4435 X 2 CRNIMO 18 14 3 EN no 1.4436/1.4435 |
| Steel making process Electric furnace | |

| Technical requirements |
|--|
| PED/23/EC, EN 10216-5 TC1 SS 219711, DIN 17458 TC1, NFA 49-117-09/85 ASTM A-213-08 AW, ASME SA-213-ED-07 AD-08 AW, ASTM A-269-08 NACE MR0175/ISO 15156-3:2003, HRB Max 80 |

| EXTENT OF DELIVERY | | | | | | | | |
|---|-------------------------------|--------|------------|-------------|-------|------------|-------|-------|
| It | Product designation | Heat | Lot | Pieces | Kg | M | | |
| 03 | THT-3R60-25-2 25.00 X 2.00 | 047098 | 92140 | 4 | 28.0 | 24.00 | | |
| | | | | Total | 4 | 28.0 24.00 | | |
| KEY TO HEAT | | | KEY TO LOT | | | | | |
| Heat Code | Heat No. | | Lot Code | Lot No. | | | | |
| 047098 | 770333 | | 92140 | 4843155/1-1 | | | | |
| TEST RESULTS | | | | | | | | |
| Chemical composition (weight%) | | | | | | | | |
| Heat | C | Si | Mn | P | S | Cr | Ni | Mo |
| 047098 | 0.016 | 0.430 | 1.700 | 0.023 | 0.009 | 17.27 | 13.25 | 2.530 |
| | N | | | | | | | |
| 047098 | 0.043 | | | | | | | |
| Chemical composition, product (weight%) | | | | | | | | |
| Heat | C | Si | Mn | P | S | Cr | Ni | Mo |
| 047098 | 0.015 | 0.41 | 1.71 | 0.022 | 0.009 | 17.33 | 13.36 | 2.55 |
| | N | | | | | | | |
| 047098 | 0.043 | | | | | | | |

Quality assurance - Per Eriksson/ QA-manager Tube & Pipe
MTC Service / Certificates

**Tensile test at room temperature**

| Lot | Yield strength | | Tensile strength | Elongation | |
|-------|----------------|--------------|------------------|------------|-----------|
| | MPa | MPa | MPa | % | % |
| 92140 | Rp0.2 | Rp1.0 | Rm | A | 2" |
| | 258 | 289 | 591 | 55 | 59 |
| | 261 | 293 | 589 | 55 | 59 |

Hardness test

| Lot | Min | Max |
|-------|-----|-----|
| | HRB | HRB |
| 92140 | 71 | 74 |

Following controls/tests have been satisfactorily performed:

- Ring expansion test
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- 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 NFA 49-117 EN 10216-5 TC1 SS 2353-22
WNR 1.4435 TP 316/TP 316L Z2CND17-13 EN 1.4435 M S PK1 25.00 X 2.00 MM HT 7703
33 SZ LOT 4843155/1-1 DIN 2391 *QA-TUBE*

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

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO A091023