

AB SANDVIK MATERIALS TECHNOLOGY Reg No. 556234-6832 VAT No. SE663000-060901
SE-81181 SANDVIKEN SWEDEN www.smt.sandvik.com mtc.service.smt@sandvik.com

**Dragprovning vid rumstemperatur**

Ao	Sträckgräns		Brottgräns	Förlängning	
	MPa	MPa	MPa	%	%
99698	Rp0.2	Rp1.0	Rm	A	2"
	238	272	563	54	55
	269	273	606	55	52

Hårdhetsprovning

Ao	Min	Max
	HRB	HRB
99698	74	76

Följande kontroller/provningar har utförts med tillfredställande res:

- Plattningsprov
- 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 14.00 X 2.00 MM HT 5218
67 SZ LOT 4842609/1-2 D4/T3 *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 A0-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 A090816

**CERTIFICATE****No. A/09-911198 Rev 01**
Date 2009-10-26 Page 1/2

Rev.date 2009-10-27

INSPECTION CERTIFICATE acc to
EN 10 204 3.1Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References 707956 003-00991 ITEMS		Customer order 2009-10-26	Sandvik References Order No. Subs No. ABSMT Dispatch note 171322 153277 36129/54 ABSMT No. C.Code 300-11007 15																																																																																																																	
Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING Steel making process Electric furnace		Steel/material Designations 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																																																																																																																		
Technical requirements PED/23/EC, EN 10216 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 <table border="1"><thead><tr><th>It</th><th>Product designation</th><th>Heat</th><th>Lot</th><th>Pieces</th><th>Kg</th><th>M</th></tr></thead><tbody><tr><td>02</td><td>THT-3R60-14-2</td><td>047260</td><td>99698</td><td>10</td><td>36.0</td><td>60.00</td></tr><tr><td></td><td>14.00 X 2.00</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="4"></td><td>Total</td><td>10</td><td>36.0 60.00</td></tr></tbody></table> <table border="0"><tr><td colspan="2">KEY TO HEAT</td><td colspan="2">KEY TO LOT</td></tr><tr><td>Heat Code</td><td>Heat No.</td><td>Lot Code</td><td>Lot No.</td></tr><tr><td>047260</td><td>521867</td><td>99698</td><td>4842609/1-2</td></tr></table> TEST RESULTS Chemical composition (weight%) <table border="1"><thead><tr><th>Heat</th><th>C</th><th>Si</th><th>Mn</th><th>P</th><th>S</th><th>Cr</th><th>Ni</th><th>Mo</th></tr></thead><tbody><tr><td>047260</td><td>0.016</td><td>0.37</td><td>1.62</td><td>0.030</td><td>0.010</td><td>17.38</td><td>13.18</td><td>2.67</td></tr><tr><td></td><td>Co</td><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>047260</td><td>0.093</td><td>0.043</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> Chemical composition, product (weight%) <table border="1"><thead><tr><th>Heat</th><th>C</th><th>Si</th><th>Mn</th><th>P</th><th>S</th><th>Cr</th><th>Ni</th><th>Mo</th></tr></thead><tbody><tr><td>047260</td><td>0.017</td><td>0.37</td><td>1.62</td><td>0.029</td><td>0.012</td><td>17.30</td><td>13.24</td><td>2.63</td></tr><tr><td></td><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>047260</td><td>0.043</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>					It	Product designation	Heat	Lot	Pieces	Kg	M	02	THT-3R60-14-2	047260	99698	10	36.0	60.00		14.00 X 2.00										Total	10	36.0 60.00	KEY TO HEAT		KEY TO LOT		Heat Code	Heat No.	Lot Code	Lot No.	047260	521867	99698	4842609/1-2	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	047260	0.016	0.37	1.62	0.030	0.010	17.38	13.18	2.67		Co	N							047260	0.093	0.043							Heat	C	Si	Mn	P	S	Cr	Ni	Mo	047260	0.017	0.37	1.62	0.029	0.012	17.30	13.24	2.63		N								047260	0.043							
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Tensile test at room temperature

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
99698	238	272	563	54	55
	269	273	606	55	52

Hardness test

	Min	Max
Lot	HRB	HRB
99698	74	76

Following controls/tests have been satisfactorily performed:

- Flattening 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:

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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 A090816