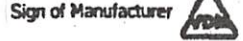


ThyssenKrupp VDM

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*PO 76091
 WO 5466
 CPA 4/40*

Order No. 378173 Delivery No. 98887 Trademark **NICORROS** 2.4380



Inspection certificate **87825/0** Page 1 of 2
 DIN EN 10204/01.05 3.1 printed: 25.01.2011

114814

ThyssenKrupp VDM USA, Inc. for
 Corrosion Materials, Baker
 306 Columbia Turnpike
 USA-07932 Florham Park

Product
 Bar, round, forged, stress relieved, machined, slightly oxidized

*Mench
 400
 2004*

| Specification | Material |
|--|------------|
| ASTM B 164-03 (reapproved 08) | UNS N04400 |
| ASME SB 164-2009b | UNS N04400 |
| ASTM B 564-06 applicable for forgings | UNS N04400 |
| ASME SB 564-2007 applicable for forgings | UNS N04400 |
| QQ-N-281D Amd. 2 Class A / Form 1 10.85 | Class A |
| NACE MR0175-2003 | |

| Item | Pcs | Wgt [kg] | Dimension [mm] | Cast | Lot | |
|------|-----|----------|------------------------|--------|-----------|------------------------|
| 6 | 2 | 1654 | 165,10 Ø x 3048-4267,2 | 114814 | 103428909 | 6.500" dia x 10-14" NL |

Heat#

Purchase Order No. 086782 / TKVDMUSA 25570

Analysis (weight %)
 LE=combustion analysis, OE=optical emission analysis, RF=XRF

ASTM B 164-03 (reapproved 08); ASME SB 164-2009b; ASTM B 564-06 applicable for forgings; ASME SB 564-2007 applicable for forgings

| Cast | Melting Pr. | C | S | Ni | Mn | Si | Ti | Cu | Fe | Al | Co |
|--------|-------------|------|------|--------|-------|------|------|-------|-------|------|-------|
| 114814 | EFVD | top | 0,13 | <0,002 | 63,82 | 1,05 | 0,13 | 0,020 | 32,71 | 1,97 | 0,050 |
| | | Meth | LE | LE | RF | RF | RF | RF | RF | RF | RF |

QQ-N-281D Amd. 2 Class A / Form 1 10.85

| Cast | Melting Pr. | C | S | Ni | Mn | Si | Ti | Cu | Fe | P | Al | Pb | Sn | Zn | Co |
|--------|-------------|------|-----|--------|-------|-----|-----|-------|-------|-----|--------|-------|--------|-------|------|
| 114814 | EFVD | top | 0,1 | <0,002 | 63,79 | 1,1 | 0,1 | 0,020 | 32,65 | 2,0 | <0,002 | 0,050 | <0,001 | <0,01 | 0,03 |
| | | Meth | LE | LE | RF | RF | RF | RF | RF | RF | RF | OE | OE | RF | RF |

Sample Condition
 stress relieved

| Tensile Test | | | | | | Hardness Test | | | Grain Size |
|--------------|------------|-----------|-----------------|-----------------|---------------|------------------|---------|--------------|------------|
| Lot | Sample No. | Temp [°C] | Yield0.2% [ksi] | Yield1.0% [ksi] | Tensile [ksi] | Elongation A [%] | RoA [%] | HRBW | ASTM E 112 |
| 103428909 | 12BE-A1 | RT | 51,3 | | 85,7 | 40 | 43 | 1 90 surface | 1 No 7.5 |

HEAT# 114814



TRACER# 644512

ISO 9001, AS9100, EN 9001
 LRQA Approval
 KLN 4000941/E

We herewith certify, that the material is in conformance with the above mentioned specifications Mark of the Inspector E

This certification was created by machine and is valid without signature

Q

Thomas Gymnich, authorized inspection representative

Date of release: 26.01.2011

* 87825-0-E *

This certified test report shall not be reproduced except in full, without the written approval of ThyssenKrupp VDM. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

Bok



| Heat Treatment | Lot |
|-----------------|-----------|
| 550°C/1:30h/air | 103428909 |

Spectrographic analytical mixup test: without objection
Dimensional and visual inspection performed: without objection

No mercury contamination; no Radium, Luminous or Alpha source materials were used in the manufacture or testing of the items furnished.

No weld repairs performed.

Country of Origin and Melt: Germany

Certified acc. to Pressure Equipment Directive (97/23/EC) by TÜV-CERT-Certification body for pressure equipment of the TÜV Nord: notified body, reg-no. 0045.

HEAT# 114814

TRACER# 644512

Bel