Keystone
ENERGY TOOLS

# CERTIFICATION

KEYSTONE ENERGY TOOLS certifies that the following equipment has been manufactured, load tested, and monogrammed in accordance with API SPEC 8C PSL1 requirements. The Equipment has also passed our quality control department with the below results.

DESCRIPTION: 5 1/2" FH 7.5 TON BOTTLENECK SINGLE JT. ELEVATOR PSL 1 W/ API 8C MONOGRAM

| | | | | | |
|---|---|---|---|---|---|
| PART NO: | E20030-124 | S/N | 70205 | INSPECTED | YES |
| MATERIAL SPECIFICATION | | | | INSPECTED | YES |
| BRINELL HARDNESS TEST | | | | INSPECTED | YES |
| NDE INSPECTION | | | | INSPECTED | YES |
| DIMENSIONAL INSPECTION | | | | INSPECTED | YES |
| LOAD TEST | | | | INSPECTED | YES |
| LOAD APPLIED | 11.25 Tons | | | INSPECTED | YES |
| LOAD TEST DURATION | 5 MINUTES | | | INSPECTED | YES |

All KET Certifications will have an original effective date the same day as original shipment.

Date Issued: 6/16/2026 Quality Rep.

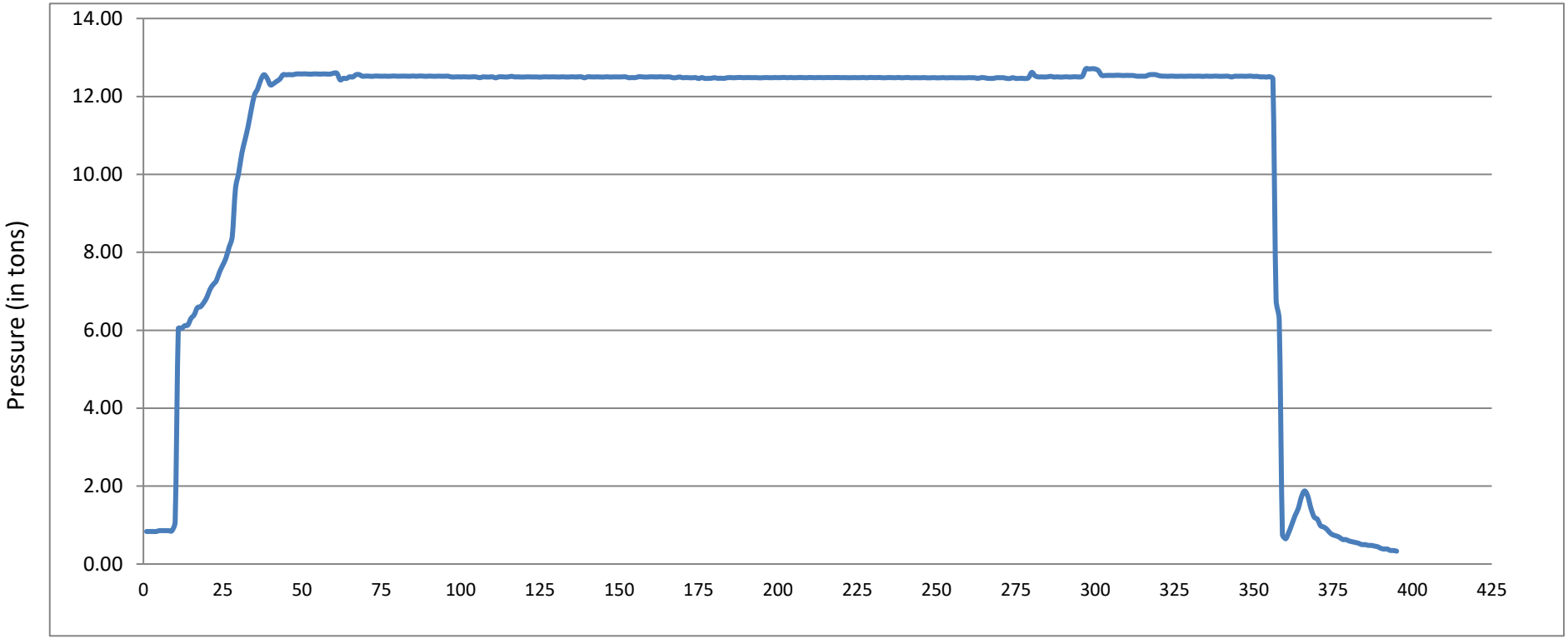
# Certificate of Proof Load Test

The following equipment has been proof load tested in accordance with API 8C specifications
The material has passed our quality control department with the following results.

| | | | |
|---|---|---|---|
| Date | June 11, 2026 | Product Rating: | 7.5 Tons |
| Part Number | E20030-124 | Test Load: | 11.25 Tons |
| Serial Number: | 70205 | | |
| Description: | 5 1/2" FH 7.5 TON BOTTLENECK SINGLE JT. ELEVATOR PSL 1 W/ API 8C MONOGRAM | | |

The maximum allowable load capacity of an elevator and slip assembly is governed solely by the elevator body rating. The slip functions as a load-transfer component and does not define the load capacity of the elevator it is used in.

**Normal Test Duration = 300 seconds (5 minutes)**




Quality Representative: _____

# MAGNETIC PARTICLE INSPECTION RECORD

DATE: June 13, 2026

DESCRIPTION: 5 1/2" FH 7.5 TON BOTTLENECK SINGLE JT. ELEVATOR PSL 1 W/ API 8C MONOGRAM

KET S/N: 70205

This is to certify that all the assemblies referenced above have been inspected by qualified KET personnel per ANST-TC-1A. The referenced equipment has been found to be free of defects by using wet magnetic particle inspection method per WI-005, KET-WP-01, ASTM E 709, & ASTM E 125.

**INSPECTED BY:** **Justin Guidry** **SNT-TC -1A NDT Level II**

O 337-365-4411
F 337-365-4456
K-E-T.com

3711 Melancon Road
Broussard, La 70518

# Certified Material Test Report

| From: | TO: |
|---|---|
| Keokuk Mills. LLC<br>dba Keokuk Steel Castings<br>3972 Main Street<br>Keokuk Ia, 52632 | KEYSTONE ENERGY<br>3711 Melancon Road<br>Brussard, LA 70518<br>USA |

| Casting Data | Heat Code | Quantity | PO# | Heat # | Alloy | Date Poured |
|---|---|---|---|---|---|---|
| | F553 | 3 | 18760 | B15163 | 4318 | 4/14/2026 |
| | Part # | Description | Spec | | | |
| | E70489-C | BODY | MS-004 120/110; KSC 4318 WITH OUT VANADIUM | | | |

| Chemical Data | C | Mn | Si | Ni | Cr | Mo | Al | P | S | Cu | V | Ti | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.18 | 0.95 | 0.53 | 1.79 | 0.85 | 0.42 | 0.042 | 0.010 | 0.009 | 0.080 | 0.005 | | 0.0098 |

| Tensile Data | Tensile (PSI) | Tensile (mPa) | Yield (PSI) | Yield (mPa) | % Elongation | % Red. Of Area | BHN |
|---|---|---|---|---|---|---|---|
| | 130,000 | 896.32 | 115,000 | 792.90 | 15.0 | 37.0 | 286 |

| Charpy V-Notch Data | Test Temp. | | Impact Toughness (foot-pounds) | | | | Impact Toughness (Joules) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | °F | °C | 1 | 2 | 3 | AVG | 1 | 2 | 3 | AVG |
| | -4 | -20 | 47.0 | 42.0 | 41.0 | 43.3 | 63.72 | 56.94 | 55.59 | 58.71 |
| | -45 | -43 | 36.0 | 32.0 | 32.0 | 33.3 | 48.81 | 43.39 | 43.39 | 45.15 |

| Notes |
|---|
| The above specimen meets the minimum requirements of the specification requested on above referenced P.O. and MSS-SP-55.<br>The material on this certification was melted and manufactured in the United States of America.<br>Castings were austenitized at 1650 deg. F for 4 hours minimum, quenched in water to ambient temperature, tempered at 1100 deg. F For 4 hours minimum<br>Equivalent Round tested at ¼ T depth Test bar size T x T = 4 x 4; Comments: 426, 434, 482 |

| Allan See | 5/14/2026 |
|---|---|
| Allan See-Technical Director-Keokuk Steel Castings | Date |

Initial: BR
Date: 6-11-26

# Certified Material Test Report

| From: | TO: |
|---|---|
| Keokuk Mills. LLC<br>dba Keokuk Steel Castings<br>3972 Main Street<br>Keokuk Ia, 52632 | KEYSTONE ENERGY<br>3711 Melancon Road<br>Brussard, LA 70518<br>USA |

| Casting Data | Heat Code | Quantity | PO# | Heat # | Alloy | Date Poured |
|---|---|---|---|---|---|---|
| | F557 | 2 | 18760 | B15171 | 4318 | 4/14/2026 |
| | Part # | Description | Spec | | | |
| | E70488-C | DOOR | MS-004 120/110; KSC 4318 WITH OUT VANADIUM | | | |

| Chemical Data | C | Mn | Si | Ni | Cr | Mo | Al | P | S | Cu | V | Ti | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.20 | 0.76 | 0.47 | 2.00 | 0.85 | 0.41 | 0.039 | 0.009 | 0.008 | 0.074 | 0.008 | | 0.0098 |

| Tensile Data | Tensile (PSI) | Tensile (mPa) | Yield (PSI) | Yield (mPa) | % Elongation | % Red. Of Area | BHN |
|---|---|---|---|---|---|---|---|
| | 126,000 | 868.74 | 113,000 | 779.11 | 18.0 | 38.0 | 302 |

| Charpy V-Notch Data | Test Temp. | | Impact Toughness (foot-pounds) | | | | Impact Toughness (Joules) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | °F | °C | 1 | 2 | 3 | AVG | 1 | 2 | 3 | AVG |
| | -4 | -20 | 45.0 | 46.0 | 42.0 | 44.3 | 61.01 | 62.37 | 56.94 | 60.06 |
| | -45 | -43 | 36.0 | 35.0 | 35.0 | 35.6 | 48.81 | 47.45 | 47.45 | 48.27 |

| Notes |
|---|
| The above specimen meets the minimum requirements of the specification requested on above referenced P.O. and MSS-SP-55.<br>The material on this certification was melted and manufactured in the United States of America.<br>Castings were austenitized at 1650 deg. F for 4 hours minimum, quenched in water to ambient temperature, tempered at 1100 deg. F For 4 hours minimum<br>Equivalent Round tested at ¼ T depth Test bar size T x T = 4 x 4; Comments: 426, 434, 482 |

| Allan See | 5/19/2026 |
|---|---|
| Allan See-Technical Director-Keokuk Steel Castings | Date |

Initial: AR
Date: 6-11-26

# Certified Material Test Report

| From: | TO: |
|---|---|
| Keokuk Mills. LLC<br>dba Keokuk Steel Castings<br>3972 Main Street<br>Keokuk Ia, 52632 | KEYSTONE ENERGY<br>3711 Melancon Road<br>Broussard, LA 70518<br>USA |

| Casting Data | Heat Code | Quantity | PO# | Heat # | Alloy | Date Poured |
|---|---|---|---|---|---|---|
| | F440 | 28 | 17956 | B14814 | 4318 | 1/28/2026 |
| | Part # | Description | Spec | | | |
| | E39-190 | LATCH | A148-15a Grade 120/110 NORMALIZE, QUENCH AND TEMPER | | | |

| Chemical Data | C | Mn | Si | Ni | Cr | Mo | Al | P | S | Cu | V | Ti | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.17 | 0.76 | 0.45 | 1.98 | 0.85 | 0.45 | 0.043 | 0.009 | 0.011 | 0.052 | 0.008 | | 0.0097 |

| Tensile Data | Tensile (PSI) | Tensile (mPa) | Yield (PSI) | Yield (mPa) | % Elongation | % Red. Of Area | BHN |
|---|---|---|---|---|---|---|---|
| | 128,800 | 888.05 | 110,600 | 762.56 | 18.5 | 37.1 | 286 |

| Charpy V-Notch Data | Test Temp. | | Impact Toughness (foot-pounds) | | | | Impact Toughness (Joules) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | °F | °C | 1 | 2 | 3 | AVG | 1 | 2 | 3 | AVG |
| | -4 | -20 | 41.0 | 38.0 | 38.0 | 39.0 | 55.59 | 51.52 | 51.52 | 52.88 |
| | -45 | -43 | 29.0 | 29.0 | 32.0 | 30.0 | 39.32 | 39.32 | 43.39 | 40.67 |

| Notes |
|---|
| The above specimen meets the minimum requirements of the specification requested on above referenced P.O. and MSS-SP-55.<br>The material on this certification was melted and manufactured in the United States of America.<br>Castings were austenitized at 1650 deg. F for 4 hours minimum, quenched in water to ambient temperature, tempered at 1100 deg. F For 4 hours minimum<br>Equivalent Round tested at ¼ T depth Test bar size T x T = 4 x 4; Comments: 426, 434, 482 |

| Allan See | 3/3/2026 |
|---|---|
| Allan See -Technical Director-Keokuk Steel Castings | Date |

Initial: AR
Date: 3-6-26

K-95

GERDAU

GERDAU SPECIAL STEEL NORTH AMERICA
5591 MORRILL ROAD
JACKSON, MICHIGAN 49201

# CERTIFIED MATERIAL TEST REPORT

| CUSTOMER ORDER NUMBER | CUSTOMER PART NUMBER | HEAT NUMBER | WORK ORDER NUMBER | DATE |
|---|---|---|---|---|
| 700450 | 1.2500RHR4140 | 75068505<br>210mm Billet | 313403 101 | 8/29/17 |

REPORT TO

SHIP TO

## ORDERED

| GRADE | SIZE | LENGTH |
|---|---|---|
| 4140 | 1 1/4" RND | 24' 3" |

CUSTOMER SPECIFICATIONS

A29/A29M-16; A304-16; E45-13; A322-13; E381-01; QL-2 (04/17)

## CHEMICAL ANALYSIS

| C | Mn | P | S | Si | Ni | Cr | Mo | Cu | Sn | Al |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.40 | 0.85 | 0.010 | 0.021 | 0.24 | 0.13 | 1.00 | 0.17 | 0.21 | 0.010 | 0.021 |

| V | B | Ca | Nb |
|---|---|---|---|
| 0.004 | 0.0005 | 0.0008 | 0.002 |

GRAIN SIZE SPECIFICATION ASTM E112 FINE GRAIN 5-8

HARDNESS SPECIFICATION ASTM E10 AS ROLLED

SURFACE
301.0

Initial: AR
Date: 5-9-25



We certify that these data are correct and in compliance with specified requirements.

Gerdau Monroe
3000 East Front Street
Monroe, MI 48161

Patrick Doyle
Quality Assurance Representative

CONTINUED ON PAGE 2

GERDAU

GERDAU SPECIAL STEEL NORTH AMERICA
5591 MORRILL ROAD
JACKSON, MICHIGAN 49201

# CERTIFIED MATERIAL TEST REPORT

| CUSTOMER ORDER NUMBER | CUSTOMER PART NUMBER | HEAT NUMBER | WORK ORDER NUMBER | DATE |
|---|---|---|---|---|
| 700450 | 1.2500RHR4140 | 75068505 | 313403 101 | 8/29/17 |

210mm Billet

REPORT TO

SHIP TO

## ORDERED

| GRADE | SIZE | LENGTH |
|---|---|---|
| 4140 | 1 1/4" RND | 24' 3" |

CUSTOMER SPECIFICATIONS

A29/A29M-16; A304-16; E45-13; A322-13; E381-01; QL-2 (04/17)

HARDENABILITY SPECIFICATION ASTM A255/A304

THEORETICAL

| J1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56 | 56 | 56 | 56 | 56 | 56 | 55 | 54 | 53 | 51 | 50 | 49 | 48 | 47 | 46 | 45 | 44 | 44 | 44 | 42 | 40 | 39 | 39 | 37 | |

MACROSTRUCTURAL TEST PER - ASTM E381 JDM AO QL-2

PLATE I

| | S | R | C |
|---|---|---|---|
| FRONT | 1 | 1 | 1 |
| MIDDLE | 1 | 1 | 1 |
| BACK | 1 | 1 | 1 |

PHYSICALS SPECIFICATION ASTM E8/A370 AS ROLLED

02.0 IN

| TENSILE KSI | YIELD KSI | % ELONGATION | REDUCTION OF AREA |
|---|---|---|---|
| 141.0 | 98.0 | 10.0 | 20.0 |

DI CALCULATION SPECIFICATION CAT 1E0024

5.26



We certify that these data are correct and in compliance with specified requirements.

Gerdau Monroe
3000 East Front Street
Monroe, MI 48161

Patrick Doyle
Quality Assurance Representative

CONTINUED ON PAGE 3

GERDAU

GERDAU SPECIAL STEEL NORTH AMERICA
5591 MORRILL ROAD
JACKSON, MICHIGAN 49201

# CERTIFIED MATERIAL TEST REPORT

| CUSTOMER ORDER NUMBER | CUSTOMER PART NUMBER | HEAT NUMBER | WORK ORDER NUMBER | DATE |
|---|---|---|---|---|
| 700450 | 1.2500RHR4140 | 75068505 | 313403 101 | 8/29/17 |

210mm Billet

REPORT TO

SHIP TO

ORDERED

| GRADE | SIZE | LENGTH |
|---|---|---|
| 4140 | 1 1/4" RND | 24' 3" |

CUSTOMER SPECIFICATIONS

A29/A29M-16; A304-16; E45-13; A322-13; E381-01; QL-2 (04/17)

REDUCTION RATIO SPECIFICATION JDM AO QL-2

RATIO= 55.5 TO 1.0

CERTIFICATION STMT SPECIFICATION VACUUM DEGASSED

MEETS JDM AO QL-2 MICROCLEANLINESS BASED ON CAPABILITY
** MATERIAL 100% MELTED AND MANUFACTURED IN THE U.S.A. BY THE ELECTRIC ARC FURNACE AND CONTINUOUS CASTING METHOD. THE PRODUCT HAS NOT BEEN REPAIRED BY WELDING AND THIS MATERIAL HAS NOT BEEN EXPOSED TO MERCURY OR TO ANY OTHER METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURES DURING PROCESSING OR WHILE IN OUR POSSESSION.
GERDAU MONITORS ALL INCOMING SCRAP AND ALL HEATS OF STEEL TO ENSURE THAT PRODUCTS SHIPPED ARE FREE OF RADIOACTIVE MATERIAL.



We certify that these data are correct and in compliance with specified requirements.

Gerdau Monroe
3000 East Front Street
Monroe, MI 48161

Patrick Doyle
Patrick Doyle
Quality Assurance Representative

GERDAU

## Huntington Facility - Test Report

Printed: 9/13/2018 10:56 AM

25 Commercial Road, Huntington, IN 46750
(260) 356-9520
fax (260) 356-9522

| | | | |
|---|---|---|---|
| Sales Order | 43624 | Customer Name | |
| Heat Number | 75068505 | Location | |
| Size | 1.2500 | | |
| Turned OD | 1.2500 | | |
| Grade | 4140 | | |

Test Remarks: QT to F1554 GR 105 S5 & A193 B7

Approved ☑ By Metallurgist Approved Date 9/13/18

**Chemistry Data**

| | Heat Number | C | Mn | P | S | Si | Ni | Cr | Mo | Cu | Al | V | B | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 75068505 | 0.400 | 0.850 | 0.010 | 0.021 | 0.240 | 0.130 | 1.000 | 0.170 | 0.210 | 0.021 | 0.004 | | |

**Q&T Hardness Test Data**

| | HardnessType | Min | Max | Location | Sample Location |
|---|---|---|---|---|---|
| | Rc | | 29.7 | | Surface |
| | Rc | | 32.0 | | Mid Radius |
| | Rc | | 31.2 | | Core |

**Q&T Tension Test Data**

Sample Gage: .500" Dia.
Bale Number

| Tensile | Yield 1 | Method 1 | Yield 2 | Method 2 | Elong % | R/A % | Gage Length | Tensile Location | PC # |
|---|---|---|---|---|---|---|---|---|---|
| 147 Ksi | 135 Ksi | .2% Offset | | | 23.0 | 60.0 | 2.000" G.L. | Center | |

**Charpy Test Data**

Sample Size: 10.0mm Velocity: M/sec

| Test | Location | Orientation | Temperature | 1 | 2 | 3 | Avg | PC # |
|---|---|---|---|---|---|---|---|---|
| Charpy V (ft-lbs) | | Longitudinal | -20°F | 66.0 | 66.0 | 66.0 | 66.000 | |

**Heat Treat Data**

Austentized at 1,645°F for 0.9 minutes
Tempered at 1,400°F for 0.9 minutes

Induction Heating
Water Quenched

**Other Test Data**

| Decarb (Inches) | Straightness | Magnetism (gauss) | As Quenched (Rc) | Microstructure |
|---|---|---|---|---|
| | 0.125"/5 Ft | +/- 5 | | |

**Description of Other Tests**

GERDAU

**Huntington Facility - Test Report**

Printed: 9/13/2018 10:56 AM

25 Commercial Road, Huntington, IN 46750
(260) 356-9520
fax (260) 356-9522

| | | | |
|---|---|---|---|
| Sales Order | 43624 | Customer Name | |
| Heat Number | 75068505 | Location | |
| Size | 1.2500 | | |
| Turned OD | 1.2500 | | |
| Grade | 4140 | | |

We hereby certify that the reported data are correct according to Gerdau tests and those of its suppliers

Doug Melchi, Metallurgist

F037A

Accu Test Labs Ltd.

ISO/IEC 17025:2017 Accredited / PJLA #87082 Testing

6722 Guhn Rd. ♦ Houston, TX 77040 ♦ Telephone (713) 460-3655

**Report Date:** 12/9/2024
**Report No:** 1137777.00
**Rev:** A
**Cust Acct:** HOL518

**To:** Holbert Steel of LA, LLC
205 Nolan Road
Broussard, LA 70518

**Ordered By:** BH

**PO:** 112524

**Material:** 4140 HT 1-1/4"OD x 15"Long Test Piece
**Heat/ID:** 75068505
**Job Info:** C1

## Tensile Test Results

| No/Location | Size (in.) | Area (in^2) | Ult. Load (lbs.) | Yield (psi) | Tensile (psi) | Elong (%) | R. of A. (%) | Fracture |
|---|---|---|---|---|---|---|---|---|
| 1 | .504 | | | 132,900 | 146,000 | 20.4 | 56.3 | |

Unless otherwise stated, yield stress is 0.2% offset, gauge length is 2 in. for 1/2 in. bars or 1 in. for 1/4 in. bars.

**Tensile Notes:**
Brinell hardness: 286 HBW

## Charpy Test Results

| No. | Temp | Location | Foot Pounds | %Shear | Mils Lat Exp |
|---|---|---|---|---|---|
| 1 | +72°F | LCVN | 78-75-78 | 100-100-100 | 48-47-49 |
| 2 | -4°F | LCVN | 72-70-75 | 100-100-100 | 42-40-43 |

Unless otherwise stated, Charpy Impact specimens are V-notch 10 x 10 mm. Tested with 8 mm striker.

## Chemical Analysis Results

1 C: 0.40 Mn: 0.85 P: 0.010 S: 0.023 Si: 0.24 Cr: 1.00 Mo: 0.16

Chemical analysis results are reported in percent by weight.

All testing performed at center.

Document Reviewed By:

Brittany Rivera
Documentation Specialist

Our reports are for the exclusive use of our customer and our name may be used only with prior written approval. Our reports apply only to the sample tested or inspected and do not necessarily represent the quality of other apparently similar or identical materials. All test specimens and testing conforms to ASTM A-370 requirements unless otherwise stated. This test report shall not be reproduced, except in full, without the written approval of Accu-Test Labs Ltd.

M-21

# CERTIFICATE OF CONFORMANCE



Certification Date
31-MAR-2026

**CUSTOMER ORDER NUMBER**
18790

**CUSTOMER PART NUMBER**
506033

6201 LUMBERDALE
HOUSTON TX 77092

Invoice Number
S592129

Ship# T596243

**SOLD TO:** KEYSTONE ENERGY TOOLS
3711 MELANCON RD
BROUSSARD LA 70518

**SHIP TO:** KEYSTONE ENERGY TOOLS
3711 MELANCON RD
BROUSSARD LA 70518

Description: 4142 CF Q&T SR - ASTM A434 CL BC
5/8 RD X 12' R/L Line Total: 1 BAR
HEAT: 10975580 ITEM: 506033

Specifications:
ASTM A434 CL BC 18
ASME SA193 B7 20
ASTM A320 L7 24
ASTM E140
ASTM A193 GR B7 24
ASTM F1554 105 20
ASTM A354 BC 17
ASTM E381
EN 10204 3.1 04
SAE 2750

## CHEMICAL ANALYSIS

| C | SI | NI | N | MN | CR | CU | TI |
|---|---|---|---|---|---|---|---|
| 0.43 | 0.27 | 0.05 | 0.007 | 0.87 | 0.93 | 0.09 | 0.002 |

| P | MO | V | S | AL | B |
|---|---|---|---|---|---|
| 0.007 | 0.21 | 0.002 | 0.016 | 0.027 | 0.0001 |

RCPT: R121515
VENDOR: AM GROUP LLC DBS AMERICA METAL
CTRY OF MELT/POUR: USA CTRY OF MANUFACTURE: USA

## MECHANICAL PROPERTIES

| DESCRIPTION | YLD STR KSI | ULT TEN KSI | %ELONG IN 02 IN | %RED IN AREA | HARDNESS RC |
|---|---|---|---|---|---|
| | 128.0 | 134.0 | 25.6 | 59.4 | 31 |

Initial: AR
Date: 4-22-26

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report meets all specified order requirements as well as the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession. SHANE LU

Manager, Quality Assurance

# CERTIFICATE OF CONFORMANCE



Certification Date
31-MAR-2026

**CUSTOMER ORDER NUMBER**
18790

**CUSTOMER PART NUMBER**
506033

6201 LUMBERDALE
HOUSTON TX 77092

Invoice Number
S592129

Ship# T596243

**SOLD TO:** KEYSTONE ENERGY TOOLS
3711 MELANCON RD
BROUSSARD LA 70518

**SHIP TO:** KEYSTONE ENERGY TOOLS
3711 MELANCON RD
BROUSSARD LA 70518

Description: 4142 CF Q&T SR - ASTM A434 CL BC
5/8 RD X 12' R/L Line Total: 1 BAR
HEAT: 10975580 ITEM: 506033
END-QUENCH HARDENABILITY (JOMINY - RC)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 58 | 58 | 58 | 58 | 58 | 58 | 57 | 56 | 55 | 53 | 50 | 49 | 46 | 46 | 45 |

| 24 | 28 | 32 |
|---|---|---|
| 43 | 40 | 38 |

---

GRAIN SIZE :5 -

---

REDUCTION RATIO 81.0 TO 1
THERMAL TREATMENT: OK
AUSTEN TEMP F 1440 QUENCH WATER TEMP F 68.63 TEMPER TEMP F
1270 LINE SPEED (FT/MIN) 40
MACRO: OK

---

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report meets all specified order requirements as well as the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession. SHANE LU

Manager, Quality Assurance

# Qual Concepts Labs

## Charpy Impact Test Report D43880

| | | | | | |
|---|---|---|---|---|---|
| Customer: | EMJ COMPANY | HT #: | 10975580 | PO #: | W791161 |
| Material: | 4142 CF | | | Pieces: | 1 |
| Customer Info: | 5/8 RD TPC | | | | |
| Specification: | LCVN @ -4F PER MS-010 | | | | |

Equipment used:

| | | | |
|---|---|---|---|
| SATEC SN:1684 | Calibration Date: | 07/15/2025 | Calibration Due Date: 07/15/2026 |
| TEGAM THERMO SN:840 | Calibration Date: | 06/13/2025 | Calibration Due Date: 06/13/2026 |

Charpy Results: **55mm x 10mm x 10.0mm**

| No. | Temp. | Location | Ft/Lbs | % Shear | MLE |
|---|---|---|---|---|---|
| 1 | -4 F | LCVN | 78- 98- 85- | 100- 100- 100- | 49- 47- 48- |

Comments:

SO# S592129

Date: 03/19/2026 Operator: JON DOWN

7825 Hillmont, Houston, Texas 77040 PH: (713) 690-2703 FAX: (713) 460-8636
www.qualconcepts.com

R121515

American Metal Group
290 Lower Bon Air Road
Sylacauga, AL 35150
Tel 205.433.6680

# Material Certification

Customer: **EMJ COMPANY**
Ship To: **EMJ CHICAGO Bay 9(423)**
Customer PO No: **P411077-423**
American Metal Group Order No: **73930**
Order Line: **1**
Shipped Qty: **21174**
American Metal Group Part No: **BAR 4140 .625x144 B7/BC**
Customer Part No: **506033**
Country of Origin: **USA**
Rolled Mill: **Charter Steel**
Melted Mill: **Charter Steel**
Grade: **4140**
Heat: **109755BO LOT .6875**
Note: **Meets ASTM A108-24**

EMJ CERTIFICATE OF COMPLIANCE
We certify that the shipment of material conforms to the purchase order.
KEYSTONE 62122
18740 506033
8599129
10975580
3/31/2026

| Material Specification Type | Material Specification | Actual |
|---|---|---|
| Mill Information | ROLLED Country of Origin | USA - |
| | MELTED Country of Origin | USA - |
| | MANUFACTURED Country of Origin | USA - |
| Certified Mill Chemistry | Carbon | 0.43 % |
| | Manganese | 0.87 % |
| | Phosphorus (max) | 0.007 % |
| | Sulfur (max) | 0.016 % |
| | Silicon | 0.27 % |
| | Chromium | 0.93 % |
| | Molybdenum | 0.21 % |
| | Aluminum | 0.027 % |
| | Nickel | 0.05 % |
| | Copper | 0.09 % |
| | Vanadium | 0.002 % |
| | Nitrogen | 0.007 % |
| | Boron | 0.0001 % |
| | Titanium | 0.002 % |
| Certified Mill Analysis | Reduction Ratio | 81 % |
| | Macroetch E-381 Center | 1 - |
| | Macroetch E-381 Mid Radius | 1 - |
| | Macroetch E-381 Surface | 1 - |
| | Grain Size | 5 - |
| | Grain | FINE - |
| | DI Value (Calculated) | 5.29 - |
| | J1 | 58 - |
| | J2 | 58 - |
| | J3 | 58 - |
| | J4 | 58 - |
| | J5 | 58 - |

American Metal Group
290 Lower Bon Air Road
Sylacauga, AL 35150
Tel 205.433.6880

# Material Certification

Customer: **EMJ COMPANY**
Ship To: **EMJ CHICAGO Bay 9(423)**
Customer PO No: **P411077-423**
American Metal Group Order No: **73930**
Order Line: **1**
Shipped Qty: **21174**
American Metal Group Part No: **BAR 4140 .625x144 B7/BC**
Customer Part No: **506033**
Country of Origin: **USA**
Rolled Mill: **Charter Steel**
Melted Mill: **Charter Steel**
Grade: **4140**
Heat: **10975580 LOT .6875**
Note: **Meets ASTM A108-24**

| Material Specification Type | Material Specification | Actual |
|---|---|---|
| Certified Mill Analysis | J6 | 58 - |
| | J7 | 57 - |
| | J8 | 56 - |
| | J9 | 55 - |
| | J10 | 53 - |
| | J12 | 50 - |
| | J14 | 49 - |
| | J16 | 46 - |
| | J18 | 46 - |
| | J20 | 45 - |
| | J24 | 43 - |
| | J28 | 40 - |
| | J32 | 38 - |

No weld repair performed on the material.
No Mercury used in the production of this material.
Meets EN10204 3.1
"All Cold Drawn parts are produced to the ASTM A108-24 specification."

"The recording of false, ficitious and fraudulent statements or entries on this document may be punishable as a felony under federal statute."

By:
Authorized Representative

*Plex 2/4/26 8:59 AM Page 2*

AMERICAN METAL GROUP

American Metal Group
290 Lower Bon Air Road
Sylacauga, AL 35150 USA
Tel: 205.433.6680

R121515

# Heat: 10975580 LOT .6875

**Job No:** 40868
**Certified Date:** 1/26/2026
**Grade:** 4140

## Customer & Shipping

**Customer:** EMJ COMPANY
**Ship To:** EMJ CHICAGO Bay 9(423)
**Customer PO No:** P411077-423
**Customer Part No:** 506033

## Order Information

**Order No:** 73930
**Releases Qty:** 1
**Shipped Qty:** 21,174.00
**Part No:** BAR 4140 .625x144 B7/BC

## Country of Origin

**ROLLED** USA
**MELTED** USA
**MANUFACTURED** USA

## Certified Mill Analysis

**Reduction Ratio:** 81
**Macroetch E-381 C:** 1
**Macroetch E-381 MR:** 1
**Macroetch E-381 S:** 1
**Grain Size:** 0

## Certified Mill Chemistry

| | | | |
|---|---|---|---|
| Carbon: **0.43 %** | Manganese: **0.87 %** | Phosphorus: **0.007 %** | Sulfur: **0.016 %** |
| Silicon: **0.27 %** | Chromium: **0.93 %** | Molybdenum: **0.21 %** | Aluminum: **0.027 %** |
| Nickel: **0.05 %** | Copper: **0.09 %** | Vanadium: **0.002 %** | Boron: **0.0001 %** |
| Nitrogen: **0.007 %** | Titanium: **0.002 %** | | |

## Certified Mill Analysis (Jominy HRC)

| J1 | J2 | J3 | J4 | J5 | J6 | J7 | J8 | J9 | J10 | J12 | J14 | J16 | J20 | J18 | J24 | J28 | J32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 58 | 58 | 58 | 58 | 58 | 58 | 57 | 56 | 55 | 53 | 50 | 49 | 46 | 45 | 46 | 43 | 40 | 38 |

## Applicable Specifications

| Specification | Rev | Specification | Rev | Specification | Rev | Specification | Rev | Specification | Rev |
|---|---|---|---|---|---|---|---|---|---|
| ASME SA193 B7 | 2020 | ASTM A193 B7 | 2024 | ASTM A320 L7 | 2024 | ASTM A354 BC | 2017 | ASTM A434 BC | 2018 |
| ASTM F1554 105 | 2020 | EN 10204 3.1 | 2004 | | | | | | |

## Containers: S570527, S570543, S570553, S570565, S570571

**Test No:** 22649 **Test:** Quench & Temper Physicals - Machined

| Hardness (HRC) | Tensile (ksi) | Yield 0.2% Offset (ksi) | Elongation (%) | ROA (%) | Note |
|---|---|---|---|---|---|
| 31 | 134 | 128 | 25.6 | 59.4 | |
| 29 | 134 | 127 | 25.7 | 60.5 | |
| 28 | 135 | 127 | 24.9 | 61.3 | |

**Test No:** 22648 **Test:** Quench & Temper Line Info

| Austenitize Temp (F) | Quench Water Temp (F) | Temper Temp (F) | Line Speed (ft / min.) | Note |
|---|---|---|---|---|
| 1440 | 68.63 | 1270 | 40 | |

**Test No:** 22647 **Test:** Partial Decarb Test

| Surface Carb. | Partial Surface Decarb. | Note |
|---|---|---|
| Pass | Pass | |

Hardness values may by converted per ASTM E140. Furnace Calibration: Optical Pyrometers are calibrated to meet SAE 2750 No weld repair performed on the material. No Mercury used in the production of this material. Melt Method: Electric Arc Furnace. "The recording of false, fictitious and fraudulent statements or entries on this document may be punishable as a felony under federal statute."

Timothy Beasley

Beasley, Timothy - Lab Technician