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" FH 7.5 TON BOTTLENECK DOUBLE LATCH SINGLE JT. ELEVATOR PSL 1 W/ API 8C MONOGRAM

PART NO:	E20030DL-123	S/N	58816	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: 3/25/2026 Quality Rep.

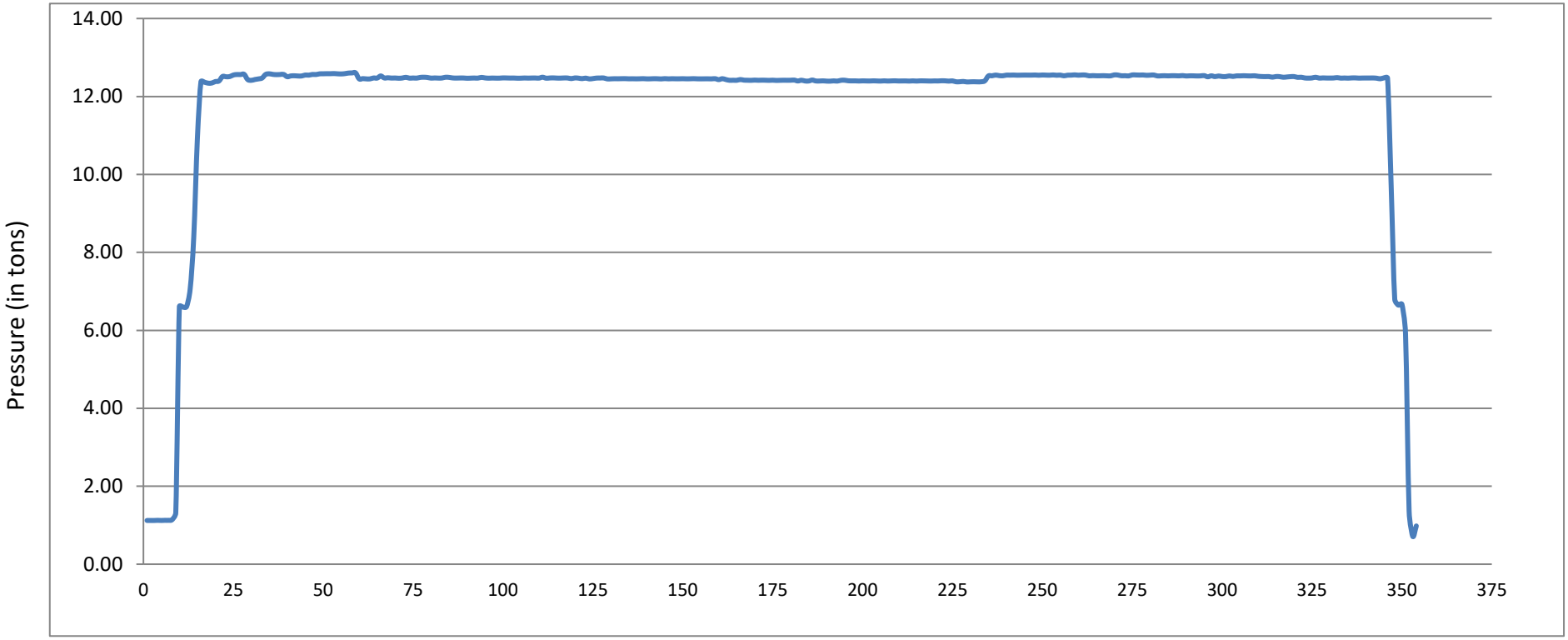
Certificate of Proof Load Test

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	March 17, 2026	Product Rating:	7.5 Tons
Part Number	E20030DL-123	Test Load:	11.25 Tons
Serial Number:	58816		
Description:	5" FH 7.5 TON BOTTLENECK DOUBLE LATCH SINGLE JT. ELEVATOR PSL 1 W/ API 8C		

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: March 18, 2026

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

KET S/N: 58816

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 dba Keokuk Steel Castings 3972 Main Street Keokuk Ia, 52632	KEYSTONE ENERGY 3711 Melancon Road Brussard, LA 70518 USA

Casting Data	Heat Code	Quantity	PO#	Heat #	Alloy	Date Poured
	F181	2	14832	B13840	4318	9/4/2025
	Part #	**Description**	**Spec**			
	E70490-C	SJ BODY CASTING	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	0.89	0.51	1.82	0.80	0.42	0.036	0.009	0.008	0.060	0.005		0.0099

Tensile Data	Tensile (PSI)	Tensile (mPa)	Yield (PSI)	Yield (mPa)	% Elongation	% Red. Of Area	BHN
	126,000	868.74	113,700	783.93	15.6	37.9	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	39.0	42.0	41.0	40.6	52.88	56.94	55.59	55.05
	-45	-43	27.0	30.0	30.0	29.0	36.61	40.67	40.67	39.32

Notes
The above specimen meets the minimum requirements of the specification requested on above referenced P.O. and MSS-SP-55. The material on this certification was melted and manufactured in the United States of America. 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 Equivalent Round tested at ¼ T depth Test bar size T x T = 4 x 4; Comments: 426, 434, 482

Allan See	10/9/2025
Allan See-Technical Director-Keokuk Steel Castings	Date

Initial: AS
Date: 10-13-25

Certified Material Test Report

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

Casting Data

Heat Code	Quantity	PO#	Heat #	Alloy	Date Poured
F250	1	16376	B14017	4318	9/26/2025

Part #	Description	Spec
E70491-C	SJ DOOR CASTING	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	0.86	0.51	1.85	0.85	0.40	0.049	0.006	0.007	0.052	0.006		0.0097

Tensile Data

Tensile (PSI)	Tensile (mPa)	Yield (PSI)	Yield (mPa)	% Elongation	% Red. Of Area	BHN
124,800	860.47	110,000	758.42	15.5	35.9	293

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	44.0	45.0	40.0	43.0	59.66	61.01	54.23	58.30
-45	-43	36.0	31.0	30.0	32.3	48.81	42.03	40.67	43.79

Notes

The above specimen meets the minimum requirements of the specification requested on above referenced P.O. and MSS-SP-55.
The material on this certification was melted and manufactured in the United States of America.
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
Equivalent Round tested at ¼ T depth Test bar size T x T = 4 x 4; Comments: 426, 434, 482

Allan See	11/14/2025
Allan See-Technical Director-Keokuk Steel Castings	Date

Initial: AR
Date: 12-8-25

Certified Material Test Report

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

Casting Data

Heat Code	Quantity	PO#	Heat #	Alloy	Date Poured
E657	2	14832	B12403	4318	12/24/2024

Part #	Description	Spec
E20026-C	SJ LATCH CASTING	MS-004 120/110; KSC 4318

Chemical Data

C	Mn	Si	Ni	Cr	Mo	Al	P	S	Cu	V	Ti	N
0.19	0.92	0.44	1.93	0.75	0.35	0.039	0.010	0.009	0.049	0.008		0.0108

Tensile Data

Tensile (PSI)	Tensile (mPa)	Yield (PSI)	Yield (mPa)	% Elongation	% Red. Of Area	BHN
120,500	830.82	110,000	758.42	15.2	39.6	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	39.0	37.0	39.0	38.3	52.88	50.17	52.88	51.93
-45	-43	29.0	28.0	26.0	28.0	39.32	37.96	35.25	37.96

Notes

The above specimen meets the minimum requirements of the specification requested on above referenced P.O. and MSS-SP-55.
The material on this certification was melted and manufactured in the United States of America.
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
Equivalent Round tested at ¼ T depth Test bar size T x T = 4 x 4; Comments: 426, 434, 482

Allan See	3/11/2025
Allan See-Technical Director-Keokuk Steel Castings	Date

Initial: AR
Date: 3-17-25

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 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.

L-18

CERTIFICATE OF CONFORMANCE

Certification Date
16-JUN-2025

CUSTOMER ORDER NUMBER
16382

CUSTOMER PART NUMBER
-4F TRANS

6201 LUMBERDALE
HOUSTON TX 77092

Invoice Number
S574132

Ship# T579490

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: 20 BARS
HEAT: 230743
ITEM: 506033

Specifications:

ASTM A434 CL BC	ASTM A193 GR B7	ASTM A108 24
ASTM A193/A193M 23	ASTM A29/A29M 23	ASTM A304 20
ASTM A322 18E1	ASTM A331 00	ASTM A434 18
ASTM A962/A962M 22	EN 10204 3.1 04	MIC 2016 1 12
ASTM A255	ASTM E45 METH A 18A	ASTM A370 22
ASTM E10 18	ASTM E112 21	ASTM E709 21
ASTM A962 SEC 5		

CHEMICAL ANALYSIS

C	MN	SI	P	S	CR	NI	MO
0.42	0.87	0.30	0.014	0.028	1.04	0.21	0.207

CU	AL	CA
0.15	0.02	0.0008

RCPT: R844870
VENDOR: MAGELLAN CORPORATION
CTRY OF MELT/POUR: SPAIN
CTRY OF MANUFACTURE: SPAIN

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR KSI	ULT TEN KSI	%ELONG IN 02 IN	%RED IN AREA	HARDNESS BHN
	133.0	145.0	16.2	58.8	306

Initial: AR
Date: 6-19-25

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
16-JUN-2025

CUSTOMER ORDER NUMBER
16382

CUSTOMER PART NUMBER
-4F TRANS

6201 LUMBERDALE
HOUSTON TX 77092

Invoice Number
S574132

Ship# T579490

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: 20 BARS
HEAT: 230743 ITEM: 506033
END-QUENCH HARDENABILITY (JOMINY - RC)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
58	57	57	56	55	55	54	52	51	50	48	46	45	44	43

16	18	20	22	24	26	28	30	32
42	41	40	39	38	37	36	36	35

IDEAL DIAMETER : 6.224 IN GRAIN SIZE :7 -

STRAND CAST REDUCTION RATIO 112.36 TO 1 VACUUM DEGASSED
MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL
EDDY CURRENT:YES
THERMAL TREATMENT: OK
QUECH 1.562'F TIME 45 MIN COOLING OIL
TEMPER TEMPERING 1.175'F TIME 150MIN COOLING AIR
TEMPER STRESS RELIEVED 1.075'F TIME 120MIN
MACRO: OK

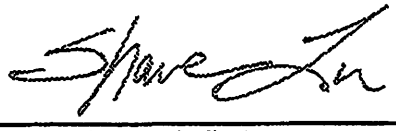
COMMENTS
ACCEPTED FOR PRIMARY 1E0509 SPEC ONLY PER CAT MILL HEAT 4-24-25
ACCEPTED FOR PN 9U-7692 PER JG 4-24-25

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 D42840

Customer:	EMJ COMPANY	HT #:	230743	PO #:	W778448
Material:	4142 CF			Pieces:	1
Customer Info:	5/8 RD TPC				
Specification:	LCVN @ -4F PER ASTM A370				

Equipment used:

SATEC SN:1684	Calibration Date:	07/12/2024	Calibration Due Date: 07/12/2025
TEGAM THERMO SN:840	Calibration Date:	06/14/2024	Calibration Due Date: 06/14/2025

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

No.	Temp.	Location	Ft/Lbs	% Shear	MLE
1	-4 F	LCVN	93- 91- 88-	100- 100- 100-	44- 49- 44-

Comments:

SO# S574132

Date: 06/13/2025 Operator: JON DOWN

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

Sidenor

MILL TEST CERTIFICATE

AENOR QUALITY MANAGEMENT ER-0000/2 | AENOR QUALITY IN AUTOMOTIVE SECTOR IATF16949

ISO 9001; IATF 16949; ISO 14001; ISO 45001; ISO 50001; ISO 27001 Y TISAX

Vitoria Plant

SIDENOR BRIGHT STEELS S.L.U.
Portal De Gamarra, 3 01013 Vitoria (Alava)
TLF. 945164678 FAX 945164752
www.sidenor.com

#506033

R8444870

Product Made in Spain

CUSTOMER:MAGELLAN CORPORATION		WORKS REFERENCE:2324594
REFERENCE:216623	SALES ORDER:365224-3	HEAT NUMBER:230743
PRODUCT NR:	MASTER REFERENCE:228391	ROLLED:13.05.2024

REQUIRED PRODUCT

AISI4140 ROUND BARS COLD DRAWN Q+T+STRESS RELIEVED 0.6250" SPECIFICATION´S TOLERANCE 12'/12'2" NORMAL

EXPEDITION | DELIVERY:0080836563 WEIGHT (KG):9.010 BUNDLES:5 UNITS:1.575

MADE ACCORDING TO

AISI BAR STEEL - .09.1996; ASTM A108 -24 01.03.2024; ASTM A193-A193M -23 01.03.2023
ASTM A29-A29M -23 01.07.2023; ASTM A304 -20 07.2020; ASTM A322 -13(2018)E1 05.2020
ASTM A331 95(R2000) 2000; ASTM A434 -18 01.07.2018; ASTM A962-A962M -22 01.05.2022
EN 10204 - OCT. 2004 3.1; MAGELLAN MIC2016 1 30.01.2012
MAGELLAN MIC2016 ADD.1 SUPP 1 AMD 1+AMD 2 22.05.2019

CHEMICAL ANALYSIS OF HEAT U:% HEAT NUMBER:230743

	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Al	Ca
Min.	0,400	0,750	0,150		0,020	0,800		0,150		0,020	
Max.	0,430	1,000	0,300	0,035	0,040	1,100	0,250	0,250	0,350	0,050	
Cer.	0,420	0,870	0,300	0,014	0,028	1,040	0,210	0,207	0,150	0,020	0,0008

D.I.ASTMA255("):6,224

JOMINY HARDENABILITY HARDNESS U.:HRC QUENCHING TEMP.:1.550°F

	1/16"	2/16"	3/16"	4/16"	5/16"	6/16"	7/16"	8/16"	9/16"	10/16"	11/16"
Min.	55,0	55,0	54,0	53,0	53,0	52,0	51,0	50,0	49,0	47,0	46,0
Max.	60,0	60,0	60,0	59,0	59,0	58,0	58,0	57,0	57,0	56,0	56,0
Cer.	58,5	57,5	57,0	56,0	55,5	55,0	54,0	52,5	51,0	50,0	48,0
	12/16"	13/16"	14/16"	15/16"	16/16"	18/16"	20/16"	22/16"	24/16"	26/16"	28/16"
Min.	44,0	42,0	41,0	40,0	39,0	37,0	36,0	35,0	34,0	34,0	34,0
Max.	55,0	55,0	54,0	54,0	53,0	52,0	51,0	49,0	48,0	47,0	46,0
Cer.	46,0	45,0	44,0	43,0	42,5	41,0	40,0	39,0	38,0	37,0	36,5
	30/16"	32/16"									
Min.	33,0	33,0									
Max.	45,0	44,0									
Cer.	36,0	35,0									

JOMINY Standard(ASTM A255-20A01.11.2020)

INCLUSIONS (MICROINCLUSIONS)

Microinclusions std.(ASTM E45I8A(R2023)01.11.2023); Type/method(A); A(t):1; A(h):0; B(t):1; B(h):0; C(t):0
C(h):0; D(t):0,5; D(h):0

MECHANICAL PROPERTIES AS SUPPLIED (CONDITIONS)

Temperature of:(1):Quenching 1.562°F; Time:(1):45Minutes; Cooling:(1):Oil
Temperature media at the start:(1):95°F; Temperature media at the finish:(1):122°F
Temperature of:(2):Tempering 1.175°F; Time:(2):150Minutes; Cooling:(2):Air
Temperature of:(3):Stress Relieved 1.075°F; Time:(3):120Minutes; Furnaces survey and calibration:Ok

MECHANICAL PROPERTIES AS SUPPLIED (TEST)

Specimen Test location:Nucleus
Tensile std.(ASTM A370-2211.2022); Tensile dir.:Longitudinal
Ts(>=130KSI):145KSI; Ys(1)(Rp(0,2%) >=110KSI):Rp(0,2%) 133KSI; Ys(2)(0,02% >=100KSI):0,02% 132KSI
El.(1)(4d >=16%):4d 18,8%; El.(2)(2" %):2" 16,2%; Z(>=50%):58,8%
Hardness Standard(ASTM E10 -18 01.07.2018); Surface hardness(269/321HB):304HB; Core hardness(HB):306HB

TECHNOLOGY & QUALITY CERTIFIES THAT THE PRODUCT FULL FILLS THE ORDER´S SPECIFICATION

APPROVED BY:IGNACIO URBIETA LAVIADA

SIGN:

sidenor VITORIA

DATE:28.06.2024

RRP.:4002022720000

Analyst of quality certificates

Sidenor

MILL TEST CERTIFICATE

AENOR QUALITY MANAGEMENT | AENOR QUALITY IN AUTOMOTIVE SECTOR

ISO 9001; IATF 16949; ISO 14001; ISO 45001; ISO 50001; ISO 27001 Y TISAX

Vitoria Plant

SIDENOR BRIGHT STEELS S.L.U.
Portal De Gamarra, 3 01013 Vitoria (Alava)
TLF. 945164678 FAX 945164752
www.sidenor.com

Product Made in Spain

CUSTOMER:MAGELLAN CORPORATION		WORKS REFERENCE:2324594
REFERENCE:216623	SALES ORDER:365224-3	HEAT NUMBER:230743
PRODUCT NR:	MASTER REFERENCE:228391	ROLLED:13.05.2024

ADDITIONAL TESTS (SUPPLY CONDITIONS)

Grain size std.(ASTM E112-13(R2021)01.09.2021); Grain size:Austenitic 7
Macroetching std.(ASTM E381-2206.2022); Macroetching(1):S 1; Macroetching(2):R 1; Macroetching(3):C 1
Radiactivity:<= 20uroentg./h

NON DESTRUCTIVE TESTS

Surface defects std.(ASTM E709-2101.06.2021); Absence internal defects guaranteed by proccess
Cracks control 100%: O.K.

ADDITIONAL INFORMATION

Reduction ratio:112,36; Initial Product Format:CC BILLET 155x155; Magnetism:Exempt
Add. info(Material 100% melted and poured in Spain); Eddy Current 100%: O.K.; Calcium Treated
Material according to ASTM A29,ASTM A193 Grade B7,ASTM A331,ASTM A434 class BC,ASME SA193 Grade B
Material according to ASME SA193 Grade B7 ; ASTM A962 section S
Material according to AISI 4140-AISI 4142 & AISI 4140H-AISI 4142H
Material is free from any harmful magnetism

Material melted and manufactured 100% in Spain through the Electric Arc Furnace (EAF) and Vacuum Degassing route (VOD).

Steel not exposed to Mercury, or to any other metal alloy that is liquid, at ambient temperatures during processing or while in Sidenor's possession.

Steel is free from Uranium or any other harmful radioactive contamination.

Steel products were not repaired by welding.

EMD CERTIFICATE OF COMPLIANCE
We certify that this shipment of material conforms to the applicable specifications shown on the purchase order.
Customer KEYSTONE CARBIDE TOOLS
Cust P.O. 116382
Cust P.N. 4F TRAD
Invoice # S574132
Spec # 230743 Rev.
Heat # 230743
Date 6/10/2025

TECHNOLOGY & QUALITY CERTIFIES THAT THE PRODUCT FULL FILLS THE ORDER'S SPECIFICATION

APPROVED BY:IGNACIO URBIETA LAVIADA
DATE:28.06.2024

SIGN:

Sidenor VITORIA

Analyst of Quality certificates

MAGELLAN
CORPORATION
a SeaTrade company

1650 Lake Cook Road Suite 300A Deerfield, IL 60015 USA
Telephone: (847) 205-1155

MOR: 711700

SR: 20296195

Packing List / Certificate of Conformance

Sold To: EMJ-Schaumburg

Producing Mill: Sidenor Bright Steels, S.L.U.

Customer PO / Item	Bundle #	Description	Heat # / Lot #	Pieces	Weight Pounds.
P359300-423 / 506033	984477	4140-CDQTS-BRRD-0.6250	230743 / 2324594	321	4,052

Total	
321	4,052