



T-351

SERIAL NUMBER: T-352 COOK DATE: \_\_\_\_\_

MOLD SIZE \_\_\_\_\_ BY \_\_\_\_\_ PO \_\_\_\_\_

ORDER DATE 07SEP23 SHIP DATE: 08SEP23

FOR: WFR

SIZE 1.86 X <sup>1.255</sup>~~1.36~~ TYPE SXDS

THREAD \_\_\_\_\_ OTHER Head Only

MATRIX (H) 35519 WEIGHT \_\_\_\_\_

MATRIX (S) 35281 WEIGHT \_\_\_\_\_

BINDER 311271 WEIGHT \_\_\_\_\_

BLANK M 40933 TJ 4000003676

BILLET \_\_\_\_\_ TUBE \_\_\_\_\_

WELD \_\_\_\_\_ MPI \_\_\_\_\_ MPI PIC \_\_\_\_\_ BRAZE \_\_\_\_\_

THREAD GAGE \_\_\_\_\_ STAND OFF \_\_\_\_\_

FINAL DIAMOND GRIND SIZE 1.86 X 1.255

LENGTH TO WELD \_\_\_\_\_

FINISHED PIC TAKEN BY Pro CRATED BY Pro DATE: 9-11-23

International \_\_\_\_\_ domestic \_\_\_\_\_

SHORT BIT & TOOL CO  
225 GOLD STREET  
GARLAND TX 75042  
972-205-1011  
shortbits@gmail.com



# Certificate of Conformance

Serial Number	Size	Type	Steel or Matrix	Shank Diameter	Bore
T-351, T-352	1.86 X 1.255	SXDS	Matrix		

Component	Material	Vender	Lot or Heat Number
Blank	8620	RHW	M40933
Hard Powder	WC	SURFACE	35519
Soft Capping Powder	W2	SURFACE	35281
Tool Joint	8620	RHW	4000003676
MIG Weld			
Tubing			

### Inspection

Diamond Grinding To Size

Weld MPI

Thread Gaging

head only

Signed By:

*P. Best*

date: 9/11/2025



# Surface Engineering Powders

## Certified Material Test Report

Company Short Bits P.O.#: Vickie  
 Alloy Type: PWCTPM002 Size: 80/325 Mesh: 80/325 Micron: 180/45um  
 Description CTPM CRYSTALLINE W 80 X 325 MESH Quantity: 50lbs  
 Specification N/A Type/Class: N/A  
 Heat Number SE-35281

**Chemical Analysis** Actual: x Nominal: \_\_\_\_\_

The data contained herein were obtained from samples considered to be representative of the products in the subject shipment and are believed to be reliable. All operations performed comply with the material specification and the purchase order.

**Element Concentrations (Weight Percent)**

Al: _____	B: _____	Be: _____	C: _____	Co: _____	Cr: _____	Cu: _____	Fe: _____
Mn: _____	Mo: _____	N2: _____	Nb: _____	Ni: _____	O2: _____	P: _____	S: _____
Si: _____	Ta: _____	Ti: _____	V: _____	W: <u>100%</u>	Wc: _____	TAO: _____	

Oth: \_\_\_\_\_ Analytical Process(es): \_\_\_\_\_

Sampling Procedure / Spec: ASTM B215-10  
 Hall Flow / Spec: ASTM B213-13

Powder Mesh / Spec: ASTM B214-07-2011  
 Apparent Density / Spec: ASTM B212-13

**Physical Properties**  
 Material Hardness Scale:  Rc: N/A  HB: \_\_\_\_\_  Hv: \_\_\_\_\_  Hk: \_\_\_\_\_

Hall Flow 10 Sec./50g Apparent Density: 8.3 g/cm<sup>3</sup>

**Particle Size Distribution: Size Microns(um)/U.S. Sieve (mesh)**

<u>180/80:</u> 1.00	<u>150/100:</u> _____	<u>125/120:</u> _____	<u>106/140:</u> _____
<u>90/170:</u> _____	<u>75/200:</u> 60.80	<u>63/230:</u> _____	<u>53/270:</u> _____
<u>45/325:</u> 31.30	<u>38/400:</u> 6.80	<u>32/450:</u> _____	<u>25/500:</u> _____
<u>20/635:</u> _____	<u>15/800:</u> _____	<u>+10:</u> _____	<u>+5:</u> _____

Other: \_\_\_\_\_

Surface Engineering Alloy Company hereby certifies the above listed material meets all requirements of the above listed specifications in addition to the confirmation that during the manufacturing process, testing, and inspection, the product was completely void of contact with the element Mercury or any of its compounds. In addition, this certification validates that all test results and operations performed by Surface Engineering Alloy Company, or its subcontractors, are in compliance with the material specification and the specific applicable material requirements of ASME SFA 5.21, of ASME Section II. The requirements of Federal Law, Title 18, Chapter 47 apply to this order and to sub-tier suppliers.

  
 \_\_\_\_\_  
 Reporting Officer  
 Ian Oberholtzer

4/12/2023  
 Date

2895 46th Ave North  
 St. Petersburg, FL  
 Main Office: 727.528.7998  
 www.surfaceengineering.com



# Surface Engineering Powders Certified Material Test Report

Company Short Bits

P.O.#: Vickie

Alloy Type: PWMP010

Size: 80/325

Mesh: 80/325

Micron: 180/45um

Description MATRIX POWDER H

Quantity: 100lbs

Specification N/A

Type/Class: N/A

Heat Number SE-35519

### Chemical Analysis

Actual: x

Nominal:

The data contained herein were obtained from samples considered to be representative of the products in the subject shipment and are believed to be reliable. All operations performed comply with the material specification and the purchase order.

### Element Concentrations (Weight Percent)

Al:	B:	Be:	C: 5.72	Co:	Cr:	Cu:	Fe: 0.19
Mn:	Mo:	N2:	Nb:	Ni: 1.99	O2:	P:	S:
Si:	Ta:	Ti:	V:	W: BAL	Wc:	TAO: <0.5	

Other: F.C: 0.03

Analytical Process(es):

Sampling Procedure / Spec: ASTM B215-10  
Hall Flow / Spec: ASTM B213-13

Powder Mesh / Spec: ASTM B214-07-2011  
Apparent Density / Spec: ASTM B212-13

### Physical Properties

Material Hardness Scale:  Rc: N/A  HB:  Hv:  Hk:

Ball Flow 9.90      Sec./50g Apparent Density: 8.15      g/cm3

### Particle Size Distribution:      Size Microns(um)/U.S. Sieve (mesh)

180/80: 5.50	150/100:	125/120: 15.20	106/140:
90/170: 14.25	75/200:	63/230: 16.75	53/270:
45/325: 15.25	38/400: 33.05	32/450:	25/500:
20/635:	15/800:	+10:	+5:

Other:

Surface Engineering Alloy Company hereby certifies the above listed material meets all requirements of the above listed specifications in addition to the confirmation that during the manufacturing process, testing, and inspection, the product was completely void of contact with the element Mercury or any of its compounds. In addition, this certification validates that all test results and operations performed by Surface Engineering Alloy Company, or its subcontractors, are in compliance with the material specification and the specific applicable material requirements of ASME SFA 5.21, of ASME Section II. The requirements of Federal Law, Title 18, Chapter 47 apply to this order and to sub-tier suppliers.

SEM-1000-CERT-P Rev A 4/18/2023

Reporting Officer  
Ian Oberholtzer

6/15/2023

Date

2895 46th Ave North  
St. Petersburg, FL

Main Office: 727.528.7998

www.surfaceengineering.com



330 Belmont Avenue, Brooklyn, NY 11207-4000 U.S.A  
tel:+1.718.342.4900 fax:+1.718.342.0175

## Certificate of Analysis

Item No: 4483D

Virgin Grade Binder Alloy

Shape: 1/2" x 1/2" x 3/4" Tumbled Sheared Pcs.

311271

CU	47.11
MN	24.38
NI	20.02
ZN	8.14
B	.11
SI	.16
FE	.02
PB	<.05
SN	.01

Customer Order No:

Customer ID:

Customer Name:

Sales Order No:

June 12, 2023

VERBAL-VICKIE

SHORTC

Short Bits & Tool

45568

BELMONT METALS, INC.

Nasir Naseer

-----  
QC Administrator





**GERDAU MACSTEEL**

5591 MORRILL ROAD  
JACKSON, MICHIGAN 49201

4/11/11

50/008

M40933

K419867

**CERTIFIED MATERIAL TEST REPORT**

CUSTOMER ORDER NUMBER 2348192-453	CUSTOMER PART NUMBER 507308	HEAT NUMBER M40933	WORK ORDER NUMBER 250376 101	DATE 4/11/11
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SHIP TO

REPORT TO  
MET DEPT

GRADE 8620H	SIZE 2 1/2" RND	LENGTH 24'
CUSTOMER SPECIFICATIONS ASTM A322-07; ASTM A304-05		

**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Sn	Al
0.22	0.84	0.016	0.021	0.26	0.50	0.50	0.20	0.21	0.009	0.030
V	Nb									
0.006	0.002									

GRAIN SIZE

SPECIFICATION ASTM E112 FINE GRAIN 5-8

HARDENABILITY

SPECIFICATION ASTM A265/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	
	46	46	43	38	33	29	27	26	25	24		22		21		20										

REDUCTION RATIO

RATIO= 7.3 TO 1.0

\*\* MATERIAL 100% MELTED AND MANUFACTURED IN THE U.S.A. BY THE ELECTRIC ARC FURNACE AND CONTINUOUS CASTING METHOD. THE PRODUCT HAS NOT

PAGE 1

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

Gerdau MacSteel Monroe  
3000 East Front Street  
Monroe, MI 48161

*Wendy J. Craig*  
Wendy J. Craig  
Quality Assurance Representative

CONTINUED ON PAGE 2



**GERDAU MACSTEEL**

5591 MORRILL ROAD  
JACKSON, MICHIGAN 49201

**CERTIFIED MATERIAL TEST REPORT**

<b>CUSTOMER ORDER NUMBER</b> P348192-453	<b>CUSTOMER PART NUMBER</b> 507008	<b>HEAT NUMBER</b> M40933	<b>WORK ORDER NUMBER</b> 250376 101	<b>DATE</b> 4/11/11
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SHIP TO

REPORT TO  
MET DEPT

<b>ORDERED</b>		<b>LENGTH</b>
<b>GRADE</b> 8620H	<b>SIZE</b> 2 1/2" RND	24'
<b>CUSTOMER SPECIFICATIONS</b> ASTM A322-07; ASTM A304-05		

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 MACSTEEL MONITORS ALL INCOMING SCRAP AND ALL HEATS OF STEEL TO ENSURE THAT PRODUCTS SHIPPED ARE FREE OF RADIOACTIVE MATERIAL.

PAGE 2 OF 2

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

Gerdau MacSteel Monroe  
3000 East Front Street  
Monroe, MI 48161

*Wendy J. Craig*  
Wendy J. Craig  
Quality Assurance Representative

**Customer Name**  
PRIDE METALS LLC

**Customer PO#**  
1965

**Shipper No**  
984426

**Heat Number**  
4000003676



**Mill Certification**  
09/01/2021

MTR#:783858-9  
Lot #:400000367621  
3601 Paul R Lowry Road  
Memphis, TN 38109 US  
901 786-5900  
Fax: 901-786-5901

Sold To: TREK METALS INC  
5221 N OCONNOR BLVD  
STE 750  
IRVING, TX 75039 US

Ship To: TREK METALS- RENTER MAT. HAND  
12426 TICONDEROGA RD  
HOUSTON, TX 77044 US

Customer PO	1811	Sales Order #	40006591 - 1.1
Product Group	Hot Roll - Engineered Bar	Product #	3047984
Grade	8620/8622H	Lot #	400000367621
Size	3"	Heat #	4000003676
BOL #	BOL-910395	Load #	788868
Description	Hot Roll - Engineered Bar Round 3" 8620/8622H 20' Random 6001-10000 lbs	Customer Part #	
Production Date	07/23/2021	Qty Shipped LBS	21345
Product Country Of Origin	United States	Qty Shipped EA	40
Original Item Description		Original Item Number	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Melt Country of Origin : United States Melting Date: 07/06/2021

C (%)	Mn (%)	P (%)	S (%)	Si (%)	Cu (%)	Ni (%)	Cr (%)	Mo (%)	V (%)	Al (%)	B (%)
0.21	0.84	0.009	0.020	0.235	0.20	0.44	0.52	0.21	0.005	0.028	0.0002
Sn (%)	Ti (%)	Nb (%)	Co (%)	Ca (%)	Pb (%)	As (%)	N (PPM)	O (PPM)	H (PPM)		
0.007	0.002	0.006	0.007	0.0007	0.000	0.003	57	9	2		

Sulfur + Phosphorus (%): 0.029  
DI Calculated (IN): 2.15

Reduction Ratio 20:20 : 1

**Jominy Simulated**

J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14	J15	J16	J18	J20	J22	J24	J26	J28	J30	J37
45	45	42	36	31	27	26	24	23	22	21	20	20	19	19	19	18	17	17	16	16	15	15	15

**ASTM E45 Method A (Worst)**

(1) Sulfides T: 1.5 H: 1.5 Alumina T: 1.0 H: 0.0 Silicates T: 0.0 H: 0.0 Globular T: 1.0 H: 0.5

**E381 Macroetch**

	Macroetch E381 Surface	Macroetch E381 Mid Radius	Macroetch E381 Center
(1)	1	1	1
(2)	1	1	1

**Hardness**

	Brinell (HBW)	Brinell
(1)	165	169.0
(1) Mid-Radius	165.0	

**SAE J422 Oxide Silicate**

	Oxide Cleanliness, SAE J422	Silicate Cleanliness, SAE J422
(1)	1	0



400-Tom Carter, Technical Services Supervisor



**Customer Name**

PRIDE METALS LLC

**Customer PO#:**

1965

**Shipper No**

984426

**Heat Number**

4000003676

**NUCOR**

**Mill Certification**

09/01/2021

MTR#:78866-9  
Lot #:400000367621  
3601 Paul R Lowry Road  
Memphis, TN 38109 US  
901 766-5900  
Fax: 901-766-5901

**Other Test Results**

ASTM E112 Grain Size : 7

**Comments:**

MEETS THE REQUIREMENTS OF THE FOLLOWING:  
ASTM A29, A255, A304, A302, LATEST REVISIONS  
JDM A0 QL2, CAT 1E2743  
UT PER API EA PSL3/ASTM A388

1. Melt/cast practice: electric arc furnace melted, ladle refined, vacuum degassed, continuously cast.
2. Nucor Steel Memphis is compliant with the Pressure Equipment Directive (PED) 97/23/EC 7/2, Annex I, Paragraph 4.3.
3. All manufacturing processes, including melting, have been performed in the U.S.A.
4. No welding or weld repair was performed on this product.
5. No mercury, mercury compounds or mercury containing devices came into contact with this product.
6. Product verified not to exceed background radiation levels.
7. In regards to Section 1502 of the Dodd-Frank Act ("Conflict Minerals"), no covered minerals (tantalum, tin, tungsten or gold) were intentionally added to this product.
8. This product conforms to the specifications described on this document. This document may not be reproduced except in full, without written approval of Nucor Corporation.
9. If applicable to the product certified by this report, test procedures are performed in compliance with the current revisions (at the time of testing) of the following ASTM standards:  
chemical analysis: E415/E1019, grain size: E112, macrostructure/macronotch: E381, tensile testing: E8/A370, hardness testing: E10 (Type A) /E18/A370, Charpy impact: E23/A370, microcleanliness: E45, decarburization depth: E1077, Jominy: A255.
10. Reported results for ASTM E45, E1077, and E112 are provided as an interpretation of ASTM procedures.
11. If applicable to this report, ASTM E23 tests conducted with 8mm radius striker and 10mm x 10mm V-notch specimen, unless otherwise stated.
12. This document complies with EN 10204 "type 3.1".
13. The following tests are outside the ISO 17025 Laboratory Scope for Nucor Steel Memphis: hydrogen testing and non-destructive testing.
14. Tests not specifically listed in notes 9 and 13, if applicable to this report, are performed by ISO 17025 certified providers outside of Nucor Steel Memphis. Unless otherwise noted, any tests performed by certified providers are within the specific provider's ISO 17025 scope.

  
400-Tom Carter, Technical Services Supervisor

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