



SERIAL NUMBER: V 354 COOK DATE: 7-11-25

MOLD SIZE _____ BY _____ PO _____

ORDER DATE _____ SHIP DATE: _____

FOR: WFR

SIZE 1.860 X 1.255 TYPE SXDS

THREAD _____ OTHER head only

MATRIX (H) _____ WEIGHT _____

MATRIX (S) 31878 WEIGHT _____

BINDER 335231 WEIGHT _____

BLANK 20930180 TJ _____

BILLET _____ TUBE _____

WELD _____ MPI _____ MPI PIC _____ BRAZE _____

THREAD GAGE _____ STAND OFF _____

FINAL DIAMOND GRIND SIZE 1.860

LENGTH TO WELD 1

FINISHED PIC TAKEN BY _____ CRATED BY _____ DATE: _____

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
V-354	1.869 x 1.255	SXDS	Matrix		
Component	Material	Vender	Lot or Heat Number		
Blank	8620	PRIDE	20930180		
Hard Powder					
Soft Capping Powder	W2	SURFACE	37878		
Tool Joint					
MIG Weld					
WP Tube					
Inspection					
Diamond Grinding To Size					
Weld MPI					
Thread Gaging					

Signed By: *P Best* date: *7/18/2025*

CERTIFIED MATERIAL TEST REPORT



2895 46th Ave N
St. Petersburg, FL 33714
(727) 528-7998

Certificate No: 240835
Revision: 0
Date: 06/03/2025

To: SHORT BITS
225 GOLD STREET
GARLAND, TX 75042

Customer P.O. VICKIE
Work Order 56027
Reference P.O.

PRODUCT DESCRIPTION	
50 lbs. PWCTPM002	Heat No: SE-37878

CHEMICAL ANALYSIS - % by Weight

C	Mn	Si	Cr	Ni	Mo	W	Fe	Co	P	S	Cu
0.001				0.005		99.98	0.009				
Nb+Ta	Al	V	Ti	B	N	O	Zr	Nb	Zn	Ag	Cd
Sb	Pb	Sn	As	Total Other	Other Elements						

SIEVE ANALYSIS - % by Weight US Standard (micron)

+20 (850µ)	+30 (595µ)	+40 (400µ)	+60 (250µ)	+80 (160µ)	+100 (150µ)	+120 (125µ)	+140 (106µ)	+170 (90µ)	+200 (75µ)	+230 (63µ)
				0.0					50.6	
+270 (53µ)	+325 (43µ)	+400 (38µ)	+450 (32µ)	+500 (25µ)	+635 (20µ)	+22µ	+15µ	+10µ	+5µ	Pan
	43.5									5.9

Hall Flow	Apparent Density	D10	D50	D90	Span	Avg Std Hardness 1	Avg Std Hardness 2	All Weld Hardness	Ferrite				
									Schaeffler	Delong	WRC 1992	Measured	
10 s/50g													

Tensile Strength (ksi)		Yield Strength (ksi)		Elongation (% in 2")		Reduction in Area (%)		Radiography		Fillet Welds	Longitudinal Bend
DC	AC	DC	AC	DC	AC	DC	AC	DC	AC		

OTHER INFORMATION:

An Intelligent Approach to Wear Solutions - surfaceengineering.com

The data contained herein were obtained from samples considered to be representative of the products in the subject lot/heat. All operations comply with the material specification and purchase order. The number of tests, positions, polarity, preheat/interpass are per the applicable specification. This document is an EN 10204, Type 3.1 inspection certificate.

Phillip D. Thomas

Phillip D. Thomas
Quality Manager



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

Certificate of Analysis

Customer Order No:

Customer ID:

Customer Name:

Sales Order No:

June 26, 2024

VERBAL-VICKIE

SHORTC

Short Bits & Tool

48182

Item No: 4483D

Virgin Grade Binder Alloy

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

335231

CU	47.29
MN	24.43
NI	20.20
ZN	7.75
B	.11
SI	.14
FE	.03
PB	<.05
SN	<.02

BELMONT METALS, INC.

Nasir Naseer

QC Administrator

BELMONT



METALS



CHARTER STEEL

A Division of Charter Manufacturing Company, Inc.

FILE

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
Fax (262) 268-2570

R729461

CHARTER STEEL TEST REPORT

Melted in USA Manufactured in USA

Earle M Jorgensen Co
1900 Mitchell Blvd
Schaumburg,IL-60193
Kind Attn :Todd Dittmer

Cust P.O.	P308801-423
Customer Part #	507012
Charter Sales Order	60007788
Heat #	20930180
Ship Lot #	8036306
Grade	8620 H SK FG SBQ 3 RNDBAR
Process	REBUNDLE(D)
Finish Size	3
Ship date	06-MAY-24

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and that it satisfies these requirements. The recording of false, fictitious and fraudulent statements or entries on this document may be punishable as a felony under federal statute.

Test results of Heat Lot # 20930180

Lab Code: 125544

CHEM %Wt	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
	.22	.84	.007	.005	.270	.46	.55	.22	.06	.005	.002
	AL	N	B	TI	CA	NB	SB	AS			
	.035	.0050	.0001	.001	.0012	.002	.001	.003			
	PB	SE									
	.000	.001									

JOMINY(HRC)

J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12
46	46	43	38	33	29	27	26	25	24	22
J14	J16									
21	20									

JOMINY SAMPLE TYPE ENGLISH=C
MACTYP=R
MACRO ETCH SURFACE=1

CAT DI (In)=2.27

MACRO ETCH RANDOM=1

MACRO ETCH CENTER=1

E45 INCLUSION LAB=0358-04

	A	B	C	D
Thin	.4	.0	.0	1.0
Heavy	.0	.0	.0	.0

LOC1=1-1	AT=.5	AH=.0	BT=.0	BH=.0	CT=.0	CH=.0	DT=1.0	DH=.0
LOC2=1-7	AT=.0	AH=.0	BT=.0	BH=.0	CT=.0	CH=.0	DT=1.0	DH=.0
LOC3=2-1	AT=.5	AH=.0	BT=.0	BH=.0	CT=.0	CH=.0	DT=1.0	DH=.0
LOC4=3-1	AT=.5	AH=.0	BT=.0	BH=.0	CT=.0	CH=.0	DT=1.0	DH=.0
LOC5=3-7	AT=.5	AH=.0	BT=.0	BH=.0	CT=.0	CH=.0	DT=1.0	DH=.0
LOC6=4-1	AT=.5	AH=.0	BT=.0	BH=.0	CT=.0	CH=.0	DT=1.0	DH=.0

GRAIN SIZE LAB=0358-04

MIN. GRAIN SIZE=7

MAX. GRAIN SIZE=7

Test results of Rolling Lot # 2266260

	# of Tests	Min Value	Max Value	• Mean Value
ROD SIZE (Inch)	2	3.017	3.040	3.029
ROD OUT OF ROUND (Inch)	1	.023	.023	.023

REDUCTION RATIO=7:1

Melt Source:

This MTR supersedes all previously dated MTRs for this order

Charter Steel

Cuyahoga Heights, OH, USA

Douglas Jones Division Mgr. of Quality Assurance

jonesdo@chartersteel.com

Trip: R5744638

Printed Date : 05/06/2024

Customer:SHORT BIT & TOOL CO | Ord #:S768073 | Part #:507012 | Cust PO #:E-MAIL ORDER

Customer:SHORT BIT & TOOL CO | Ord #:S768073 | Part #:507012 | Cust PO #:E-MAIL ORDER



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

FILE

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
Fax (262) 268-2570

CHARTER STEEL TEST REPORT

Melted in USA Manufactured in USA

Earle M Jorgensen Co
1900 Mitchell Blvd
Schaumburg,IL-60193
Kind Attn :Todd Dittmer

Cust P.O.	P308801-423
Customer Part #	507012
Charter Sales Order	60007788
Heat #	20930180
Ship Lot #	8036306
Grade	8620 H SK FG SBQ 3 RNDBAR
Process	REBUNDLE(D)
Finish Size	3
Ship date	06-MAY-24

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and that it satisfies these requirements. The recording of false, fictitious and fraudulent statements or entries on this document may be punishable as a felony under federal statute.

Specifications: Manufactured per Charter Steel Quality Manual Rev Date 05/12/17
Charter Steel certifies this product is indistinguishable from background radiation levels by having process radiation detectors in place to measure for the presence of radiation within our process & products.
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = ASTM A29/A29M - 23 | ASTM A322 - 13 (Reapproved 2018) | ASTM A304 - 20 Revision = Dated =

Additional Comments: Material is Vacuum Degassed.
Material is Fine grain per ASTM A29 section 5.1.2.1, fine grain will be deemed fulfilled if the heat analysis .020% aluminum or higher.

Melt Source:
Charter Steel
Cuyahoga Heights, OH, USA

This MTR supersedes all previously dated MTRs for this order

Douglas Jones Division Mgr. of Quality Assurance

jonesdo@chartersteel.com

Printed Date : 05/06/2024

Trip: R5744638

Customer:SHORT BIT & TOOL CO | Ord #:S768073 | Part #:507012 | Cust PO #:E-MAIL ORDER

The following statements are applicable to the material described on the front of this Test Report:
 1. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory	Address
0358-01	7388	CSSM	Charter Steel Melting Division 1658 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR	Charter Steel Rolling 1658 Cold Springs Road, Saukville, WI 53080
0358-07	8171	CSSP	Charter Steel Processing Division 1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division 6255 US Highway 23, Rising Sun, OH 43457
0358-04	125544	CSCM/ CSCR	Charter Steel Cleveland 4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
*	*	--	Subcontracted test performed by laboratory not in Charter Steel System

2. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specifications	CSSM	CSSR	CSSP	CSFP	CSCM/ CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X				X
Macroetch	ASTM E381	X				X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X				X
Grain Size	ASTM E112	X	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	X	
Inclusion Content (Methods A, E)	ASTM E45		X			X
Decarburization	ASTM E1077		X	X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA).

These accreditations expire 01/31/25. All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

- The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample. Any statement of conformity is based on simple acceptance, whether the test result is within or outside the specification/acceptance limits. Measurement uncertainty is not taken into account in the statement of conformity.
- This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - All pages must be reproduced in full
- This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
- Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.
- Certificate type 3.1 per EN 10204 rev. 2005-01
- Charter Steel melting is a continuous cast electric arc furnace
- The steel for this order meets the following compliance/ regulatory standards: DFARS, REACH, RoHS, and Conflict Minerals
- No Mercury was used in the manufacture or processing of this product.
- No weld or repair has been performed.



0358-01 Seawater Mining
 0358-02 Seawater Mining
 0358-03 Seawater Processing
 0358-04 Cleveland Mills/Steel
 0358-07 Seawater Processing

Customer:SHORT BIT & TOOL CO | Ord #:S768073 | Part #:507012 | Cust PO #:E-MAIL ORDER

