



SERIAL NUMBER: T-240
T-241 COOK DATE: _____

MOLD SIZE _____ BY _____ PO HARRIS

ORDER DATE 17 MAY 23 SHIP DATE: 19 MAY 23

FOR: WFR

SIZE 2.175 X 1.6 TYPE 5XDS

THREAD BLANK OTHER Their Fed Ex 4 insure

MATRIX (H) _____

WEIGHT _____

MATRIX (S) 34839

WEIGHT _____

BINDER 311271

WEIGHT _____

BLANK A186643

TJ _____

BILLET _____

TUBE _____

WELD _____ MPI _____

MPI PIC _____ BRAZE _____

THREAD GAGE _____

STAND OFF _____

FINAL DIAMOND GRIND SIZE 2.175 X 1.6

LENGTH TO WELD 1

FINISHED PIC TAKEN BY Ro CRATED BY Ro DATE: 5.19.23

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-240, T-241	2.175 X 1.600	SXDS	Steel		

Component	Material	Vender	Lot or Heat Number
Blank	8620	RHW	A186643
Hard Powder			
Soft Capping Powder	W2	SURFACE	34839
Tool Joint			
MIG Weld			
Tubing			

Inspection
Diamond Grinding To Size
Weld MPI
Thread Gaging

Signed By: <i>P. Bagg</i>	date: <i>5/19/2023</i>
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Surface Engineering Powders

Certified Material Test Report

Company Short Bits

P.O.#: Verbal

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-33937

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: 100%	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 11.00


Sec./50g Apparent Density: 8.20 g/cm3

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

180/80: 0.0	150/100: 3.60	125/120: 11.75	106/140: 14.05
90/170: 13.30	75/200: 19.40	63/230: BAL	53/270: 11.15
45/325: 7.50	38/400: 5.70	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 information 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

9/30/2022

Date

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

Certificate of Analysis

October 21, 2022

Customer Order No:

VERBAL-VICKIE

Customer ID:

SHORTC

Customer Name:

Short Bits & Tool

Sales Order No:

43850

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

BELMONT METALS, INC.

Nasir Naseer

QC Administrator

Certified Material Test Report

Cert #: 305970	Mill Order: 1829293	Heat #: A186643	Issued: 12/13/2018 20:43:21
Work Order: 279207	Sales Order: 213264-1	Customer: Marco Steel and Aluminum	PO #: 106119-1
Load #: 320078	Reference #:	Reference Desc:	End Use:
Size: 3"	Shape: Round	Grade: 8620	Length: 19' 9"
Grain Practice: AI Fine Grain (5-8) per ASTM A29		Reduction Ratio: 20.5 to 1	Disposition: Rolled Prime

Ladle Chemistry Analysis (ASTM A29)

C	Mn	P	S	Si	Al	Cu	Ni	Cr	Mo	Sn	N	V	Cb	B	Ca	W	Ti	DI
0.21	0.82	0.008	0.023	0.23	0.031	0.21	0.46	0.51	0.17	0.009	0.0086	0.002	0.001	0.0003	0.0005	0.001	0.001	1.97
Pb	Co	As	Sb	Zr	Bi	H(ppm)	O(ppm)	Ceq	J-Factor									
0.000	0.007	0.004	0.004	0.000	0.000	1.5		0.53	178									

Product Check Analysis (ASTM A29)

	C	Mn	P	S	Si	Al	Cu	Ni	Cr	Mo	Sn	N	V	Cb	Ti	B	Ca	O
Front																		
Back																		

Jominy (ASTM A255)

	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12	J14	J16	J18	J20	J24	J28	J32
Calc'd Standard	45	44	41	34	29	25	24	23	22	21	19	18	17	17	16	15	14	14
	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	50			
Calc'd Metric																		
	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12	J14	J16	J18	J20	J24	J28	J32
Front																		
Back																		

Microcleanliness (ASTM E45)

Method A								Method C (SAE J422)		Method E	
AT	AH	BT	BH	CT	CH	DT	DH	S	O	SAM "B"	SAM "D"

Microcleanliness (DIN 50602)

K				M	
S	O	Tot		Tot	

Decarb

Depth	% of Diameter
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Grainsize

Austenitic	Ferritic
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Macrostructure (ASTM E381)

S	R	C
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Magnetic Particle Inspection

Frequency	Severity
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Mechanical Properties (ASTM A370)

Tensile Properties					Hardness	
Tensile Strength	0.2% Yield Strength	% Elong (2")	% ROA	0.35% EUL Yield Strength	(MR)	(Surf)

Steel Dynamics - Engineered Bar Products has a quality system in place which has been certified ISO 9001:2015 compliant, including PED certification.

Comments/Specs

ASTM A322-13

Marco Steel & Alum, Inc.
Certifies that this is a true
copy of the original
Mill cert on file
By: *[Signature]*
Date: *[Signature]*
pof: *[Signature]*
Vendor: *[Signature]*

Condition: As-Rolled, Hot-Rolled

I hereby certify that the content of this report is correct and accurate, and that all tests and operations performed on this material were in compliance with applicable material specifications and purchaser designated requirements.

[Signature]
Jason Sawa - Rolling Mill Metallurgist (ES)

Any alteration to this report voids Steel Dynamic's warranting of results. No weld repair has been performed on this material. This material is not radioactive and has not been exposed to radioactivity while under the control of Steel Dynamics. This material has not been exposed to mercury while under the control of Steel Dynamics. Unless otherwise noted, this material was melted, continually cast, and rolled in the USA; w/ all testing performed by Steel Dynamics.

2.175x1.6
SND 1240

