



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

MOLD SIZE _____ BY _____ PO HARRIS

ORDER DATE 17MAY23 SHIP DATE: 19MAY23

FOR: WFR

SIZE 2.175 x 1.6 TYPE 5XDS

THREAD BLANK OTHER Their Fed Ex & 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. Beys</i>		date: <i>5/19/2023</i>			



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 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

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

BELMONT



METALS

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 : Al 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)	Coq	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
Calc'd Metric	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	50			
	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

Grainsize

Macrostructure (ASTM E381)

Magnetic Particle Inspection

Depth	% of Diameter	Austenitic	Ferritic	S	R	C	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: *[Date]*
 Job # *[Job #]*
 Vendor: *[Vendor]*

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
SWS 1240



