



SERIAL NUMBER: N-258  
N-259 COOK DATE: \_\_\_\_\_

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

ORDER DATE 26 AUG 18 SHIP DATE: 31 AUG 18 PO 594930

SIZE 2.25 X 1.75 TYPE SXDS FOR SLB

THREAD 1/2 NAT Fin OTHER 2 1/16 X 1.75 WP 24"

NOTES \_\_\_\_\_

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

MATRIX (S) 2022 WEIGHT \_\_\_\_\_

BINDER 23679 WEIGHT \_\_\_\_\_

BLANK \_\_\_\_\_ TJ thier

BILLET MM12104734 TUBE 30884/1

WELD BY AH MPI BY AH MPI PIC AH

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

FINAL DIAMOND GRIND SIZE 2.25 X 1.75

LENGTH TO WELD 24" , 24"

FINISHED PIC TAKEN BY AH SHIPPED BY JM DATE: 8-31-18

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



# Certificate of Conformance

Serial Number	Size	Type	Steel or Matrix	Shank Diameter	Bore
N-258, N-259	2.25 x 1.75	SXDS	Steel		
Component	Material	Vender	Lot or Heat Number		
Blank	4140 Steel	RHW	M12104734		
Hard Powder					
Soft Capping Powder	W2	HWP	2022		
Tool Joint					
MIG Weld					
WP Tube	N80 Steel	Red Wing	308894/1		
Inspection					
Diamond Grinding To Size					
Weld MPI					
Thread Gaging					
Signed By: <i>P. Beggs</i>			date: <i>8/31/2018</i>		

Document Number:	F-Q-018
Revision:	Orig.
Date of Origin:	8/12/2012
Manual:	P-Q-001
Page:	PAGE 1 OF 1
Title:	MATERIAL PROPERTIES CERTIFICATION



CUSTOMER:	SHORT BITS
CUSTOMER PO#:	6000959
ITEM ID:	PWCTPM002
ITEM DESCRIPTION	CTPM CRYSTALLINE W 80 X 325 MESH
ITEM LOT #	MPW2022
DATE	7/13/18
WEIGHT	100.0 LB.

**CHEMICAL COMPOSITION  
(Weight Percent)**

Element	Minimum	Maximum	RESULT
Tungsten (T)			99.90

**PRODUCT SIZING  
(Weight Percent)**

Sieve	Minimum	Maximum	RESULT
(U.S. Standard Mesh per ASTM B214)			
+80	-	5.0	0.9
-80 + 325	-	-	98.4
-325	-	10.00	0.6

**PHYSICAL PROPERTIES**

Testing Procedure	Minimum	Maximum	RESULT
Apparent Density ASTM B212 (g/cc)	7.2	8.1	7.7
Tap Density ASTM B527 (g/cc)	9.2	10.4	10.4
Hall Flow Rate ASTM B213 (sec/50g)		Must Flow	11.5
			-
			-



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

## Certificate of Analysis

July 27, 2018

To: Short Bits & Tool  
225 Gold Street  
Garland, TX 750426648 USA

Customer Order No: Phone/Vicki

Customer ID: SHORTC

Sales Order No: 31363

Material: 4483D

BELMONT *Virgin Grade Binder Alloy*

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

Packaging: 250 Lb. Drums

Lot: 23679

Copper (Cu)	47.68
Manganese (Mn)	23.60
Nickel (Ni)	20.06
Zinc (Zn)	8.18
Boron (B)	0.19
Iron (Fe)	0.07
Silicon (Si)	0.17
Lead (Pb)	< 0.05
Tin (Sn)	< 0.05

BELMONT METALS, INC.

Nasir Naseer

QC Administrat

BELMONT



METALS

Sold To:

Ship To:

Customer P.O.	67661	Sales Order	119997.1
Product Group	Special Bar Quality	Part Number	30003500252MTS0
Grade	8620; TD-PUR-407	Lot #	MM1210473404
Size	3-1/2" (3.5000) Round	Heat #	MM12104734
Product	3-1/2" (3.5000) Round 21' 8620-C2R7	B.L. Number	G1-240249
Description	8620-C2R7	Load Number	G1-126306
Customer Spec		Customer Part #	

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.

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Al	B
0.22%	0.82%	0.013%	0.023%	0.25%	0.24%	0.49%	0.52%	0.20%	0.004%	0.025%	0.0004%
Sn	Tl	Cb	Co	Ca	Pb	As	H				
0.010%	0.0010%	0.002%	0.0451%	0.0007%	0.0002%	0.005%	1.1 ppm				

Austenitic fine grain by chemical analysis per the latest revision of ASTM A29

DI value: 2.29

**Simulated Hardenability Band**

J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14	J15	J16	J18	J20	J22	J24	J26	J28	J30	J32
46	46	43	38	33	29	27	26	25	24		21		21		20	19	18		17		16		16

Brinell Converted Mid-Radius: 190.0bhn      Tensile 1: 91,900psi (634MPa)      Yield 1: 60,100psi (414MPa)  
 Elongation: 23.9% in 2"(in 50.8mm)      Reduction of Area: 43.78%      Reduction Ratio 15 :1

**ASTM E381**  
 Surface: 1 Mid Radius: 1 Center: 1

**ASTM E45 Method A**  
 Sulfides: T: 1.5 H: 1.3 Alumina: T: 0.0 H: 0.0 Silicates: T: 0.0 H: 0.0 Globular: T: 1.3 H: 0.5

Specification Comments: EAF, LMF, VACUUM DEGASSED, CONTINUOUSLY CAST MATERIAL IS IN CONFORMANCE TO EN 10204 3.1 MATERIAL CONFORMS TO ASTM A29; ASTM A322 A304

- All manufacturing processes, including melting have been performed in the U.S.A.
- No mercury, mercury compounds or mercury containing devices came into contact with this product.
- Welding or weld repair was not performed on this material.
- This material conforms to the specifications described on this document and may not be reproduced except in full, without written approval of Nucor Corporation.
- This product is NAFTA certified under Paragraph "B" of the NAFTA rule of origin.
- Material is Free of Radioactive Contamination.
- This document is in compliance with EN 10204 "type 3.1"

*Drew Kofahl*

Drew Kofahl  
 Division Metallurgist



**TUBOS REUNIDOS INDUSTRIAL, S.L.U**  
Barrio Sagarribai, 2 - 01470 AMURRIO (Spain)



EN 10204:2004 / 3.1

**CERTIFICADO DE CALIDAD  
MILL TEST CERTIFICATE**

PAG. 1 / 2

**N° 0000308894/1 Rev. 000**

<b>CLIENTE:</b> CUSTOMER		<b>PEDIDO / PARTIDA:</b> P.ORDER / ITEM	P.O. 4389
<b>PRODUCTO:</b> ARTICLE	TUBERÍA SIN SOLDADURA LAMINADA EN CALIENTE HOT FINISHED SEAMLESS TUBES	<b>REF. FABRICA:</b> WORK ORDER	300013230 000010
<b>EXTREMOS:</b> ENDS	LISOS A ESCUADRA SQUARE CUT PLAIN END	<b>PROTECCIÓN SUPERF:</b> EXT. COATING	LACA SECA EXTERIOR OD DRY LACQUERED
<b>NORMA / GRADO:</b> APL-STANDARD AND GRADE	API 5CT 9TH EDITION, JULY 2011 N80 TYPE 1, PSL1	<b>PROCESO FUSION:</b> MELTING PROCESS	HORNO ELECTRICO ACERO TOTALMENTE CALMADO ELECTRIC FURNACE // FULLY KILLED
<b>ESPEC. ADICIONALES:</b> ADDITIONAL SPECS.		<b>FAB. DE PALANQUILLA:</b> BILLETS MANUFACTURE	COLADA CONTINUA CONTINUOUS CASTING
<b>DIMENSIONES:</b> DIMENSIONS	2.063" OD X 0.156" X 33-35 FT.		
<b>MARCAS:</b> MARKING	<b>ESTAMPADO:</b> DIE STAMPING	SPAIN	
	<b>PINTADO:</b> STENCILLED	TRI API 5CT 5CT-0013 (SELLO API) (MM/AA) PE 2.063 " 3.18 NI S P 3000.0 PSI D HN (COLADA)	
	<b>CODIGO COLOR:</b> COLOUR CODE		
<b>TRAT. TERMICO:</b> HEAT TREATMENT	NORM. BRUTO LAM. ENFR. AL AIRE / AS ROLLED COOLED IN STILL AIR 920 °C		

Lista de Bultos / 120416  
Packing List

		<u>DESCRIPCION SUMINISTRO / DESCRIPTION OF DELIVERY (I)</u>				
ITEM FAB. T.R. ITEM	ITEM CLI. CLIENTS ITEM	LONG.INDIV (F) INDIVIDUAL LENGTH	COLADA CAST NO.	N° TUBOS QUANTITY	LONG. TOTAL (F) LENGTH	PESO(KG) WEIGHT
000010		33,000 - 35,000	109965	207	6.917,979	10.131
<b>TOTAL</b>				207	6.917,979	10.131

**ENSAYOS NO DESTRUCTIVOS / N.D.T**

ENSAYO / TEST	%CONTROL / TEST RATE(%)	REQUISITOS / REQUIREMENTS	RESULTADO / RESULT
VISUAL Y DIMENSIONAL/ VISUAL & DIMENSIONAL INSP.	100%		O.K.

TUBOS REUNIDOS INDUSTRIAL GARANTIZA QUE TODAS LOS TUBOS CUBIERTOS POR ESTE CERTIFICADO CUMPLEN LOS REQUISITOS DEL PEDIDO Y CON LAS ESPECIFICACIONES ARRIBA MENCIONADAS.  
TUBOS REUNIDOS INDUSTRIAL CERTIFY THAT ALL THE TUBES COVERED BY THIS CERTIFICATE COMPLY WITH ORDER REQUIREMENTS AND ABOVE MENTIONED SPECIFICATIONS.

AMURRIO 07.05.2012

CONTROL DE CALIDAD DE TUBOS REUNIDOS  
INDUSTRIAL  
TUBOS REUNIDOS INDUSTRIAL QUALITY CONTROL

AMURRIO

P.O. :



EN 10204:2004 / 3.1

**CERTIFICADO DE CALIDAD**  
**MILL TEST CERTIFICATE**

PAG. 2 / 2

N° 0000308894/1 Rev. 000

ENSAYO / TEST	ENSAYOS NO DESTRUCTIVOS / NDT		RESULTADO / RESULT
	%CONTROL / TEST RATE(S)	REQUISITOS / REQUIREMENTS	
P.HIDROSTATICA/ HYDROTEST	100%	3.000,0 PSI 5 SEC.	O.K.
ENSAYO DRIFT/ DRIFT TEST	100%	API SCT	O.K.

  

ANALISIS DE COLADA / CAST ANALYSIS														
	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Al	Sn	Ti	Nb
MIN.				0,030	0,030									
MAX.														
109965	0,40	1,57	0,22	0,013	0,001	0,070	0,090	0,140	0,250	0,003	0,021	0,013	0,029	0,001
														0,0001 0,73

  

ANALISIS DE PRODUCTO / PRODUCT ANALYSIS														
	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Al	Sn	Ti	Nb
MIN.				0,030	0,030									
MAX.														
109965	0,40	1,56	0,24	0,011	0,001	0,080	0,100	0,130	0,260	0,005	0,022	0,012	0,019	0,004
109965	0,40	1,56	0,24	0,011	0,001	0,080	0,100	0,130	0,260	0,005	0,022	0,012	0,019	0,004
														0,0003 0,73

ENSAYOS DE TRACCIÓN							
TENSILE TEST							
COLADA CAST	L/T (1)	T/P (2)	DIMENSION (Inches)	L.ELAST. YIELD POINT (Psi) (3)	R.TRACC. T.STRENGTH (Psi) (3)	ALARG. ELONG. (%) (4)	DUREZA HARDNESS ( )
				80.100	99.900		
				109.900			
109965	L	P	0,768 x 0,185	90.147	118.564	20	
109965	L	P	0,764 x 0,181	89.870	122.960	20	

- (1) : L = LONGITUDINAL // T = TRANSVERSAL
- (2) : T = Full size tube // P = Strip specimen
- (3) : yield point (0.5%)
- (4) : Lo = 2" (50,8 mm)

**ANEXOS / ANNEX**

" BILLETS ARE PRODUCED AT OUR AMURRIO STEEL PLANT, WHICH IS ALSO CERTIFIED TO ISO 9001, THE SAME AS OUR TUBE PLANT "

" NO WELD REPAIR "

" MERCURY FREE "

AMURRIO 07.05.2012

CONTROL DE CALIDAD DE TUBOS REUNIDOS  
INDUSTRIAL  
TUBOS REUNIDOS INDUSTRIAL QUALITY CONTROL

*[Signature]*

P.O. :



