

DATE	5/24/13
INVOICE NO.	555217
BILL OF LADING	110534
CUSTOMER NO.	5446
CUSTOMER P.O.	600675

**NUCOR-YAMATO STEEL CO.**  
P.O. BOX 1228 • BLYTHEVILLE, AR 72316

**CERTIFIED MILL TEST REPORT**

100% MELTED AND MANUFACTURED IN U.S.A.  
All shapes produced by Nucor-Yamato Steel are cast and rolled to a fully killed and fine grain practice.

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FB C/O JORGE MIGUEL MEDRANO SANCHEZ  
HIDALGO 3530 PAT 4100  
FINAL: SAN LUIS POTOSI, SLP MX  
NUEVO LAREDO, TM 88000

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ASTM A992/A992M-11 A572/A572M GR50-07  
ASTM A709/A709M-11 GR50 (345)  
ASTM A709/A709M-11 GR50S (345S)  
ASTM A6/A6M-12

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FERRE BARNIEDO, SA DE CV  
AV REVOLUCION #81 COL SAN CRISTOBAL  
ECATEPEC DE MORELOS  
EDO, MEXICO CP 55000

49477

ITEM #	ITEM DESCRIPTION	QTY	HEAT #	MECHANICAL PROPERTIES						CHEMICAL PROPERTIES												
				YIELD TO TENSILE RATIO	YIELD STRENGTH	TENSILE STRENGTH	ELONG	CHARTY IMPACT TEMP	IMPACT ENERGY	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	CE	
					PSI	PSI																%
	- 76.0	1	404837	.81	58000	72000	27				.07	1.10	.016	.023	.22	.30	.13	.17	.04	.01	.019	.33
	W460 x113.0			.79	57000	72000	27												.01	.16		
	12.192 M				400	496	27															
2	W18 - 76.0	8	404839	.77	57000	74000	28				.08	1.11	.013	.023	.22	.30	.12	.15	.04	.01	.018	.33
	40'			.78	57000	73000	26												.01	.17		
	W460 x113.0				393	510	26															
	12.192 M				393	503	26															
3	W18 - 76.0	12	404841	.77	57000	74000	28				.08	1.10	.017	.020	.21	.29	.13	.20	.07	.01	.018	.35
	40'			.78	57000	74000	26												.01	.18		
	W460 x113.0				393	510	27															
	12.192 M				393	510	26															
4	W18 - 76.0	17	404842	.78	58000	74000	26				.07	1.10	.015	.022	.23	.28	.14	.15	.04	.01	.020	.32
	40'			.78	56000	72000	26												.01	.16		
	W460 x113.0				400	510	26															
	12.192 M				386	496	26															
5	W18 - 76.0	5	404844	.78	57000	73000	28				.08	1.12	.015	.024	.21	.28	.12	.16	.05	.01	.018	.34
	40'			.77	56000	73000	28												.01	.17		
	W460 x113.0				393	503	28															
	12.192 M				386	503	28															
6	W18 - 76.0	5	404846	.79	57000	72000	27				.07	1.10	.014	.022	.25	.29	.16	.16	.05	.01	.020	.33
	40'			.78	57000	73000	27												.01	.17		
	W460 x113.0				393	496	27															
	12.192 M				393	503	27															
7	W18 - 76.0	2	404847	.78	57000	73000	26				.07	1.11	.014	.023	.20	.31	.15	.14	.05	.01	.018	.33
	40'			.79	58000	73000	25												.01	.16		
	W460 x113.0				393	503	26															
	12.192 M				400	503	25															
8	W18 - 76.0	2	404992	.77	55000	71000	27				.07	1.10	.014	.019	.26	.27	.09	.11	.03	.01	.019	.31
	40'			.78	56000	72000	27												.01	.16		
	W460 x113.0				379	490	27															
	12.192 M				386	496	27															
9	W18 - 76.0	2	404993	.82	61000	74000	28				.08	1.12	.015	.023	.23	.26	.11	.12	.03	.01	.023	.32
	40'			.78	58000	74000	28												.01	.17		
	W460 x113.0				421	510	28															
	12.192 M				400	510	28															

Fe=C+Si+Mn+Cu+Ni+Cr+Mo+V+5B B=Approx.0005 CARBON EQUIVALENT: CE = CE(IIW) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15  
Corrosion Index: DI=26.01(%Cu)+3.28(%Ni)+1.20(%Cr)+1.44(%Mo)+17.25(%P)+7.22(%Cu)+10.10(%Mn)+33.33(%V)<sup>2</sup>  
Mercury has not been used in the direct manufacturing of this material.

ELONGATION BASED ON 8.00 INCH GAUGE LENGTH

I hereby certify that the contents of this report are accurate and correct. All test results and operations performed by this material manufacturer are in compliance with the requirements of the material specifications listed in the Specifications Block above.

*Doug Linnell*  
QUALITY ASSURANCE

CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI  
SWORN TO AND SUBSCRIBED BEFORE ME THIS  
24 Day of 05/13  
*Charlene Wallis* NOTARY PUBLIC  
MY COMMISSION EXPIRES 10/21/2015  
Charlene Wallis  
NOTARY PUBLIC  
10-21-2015  
MISSISSIPPI CO. ARKANSAS