

DATE	3/30/13
INVOICE NO.	544964
BILL OF LADING	104652
CUSTOMER NO.	0829
CUSTOMER P.O.	FORTACERO

**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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FORTACERO C/O GULF STREAM MARINE  
PORT OF BROWNSVILLE  
  
BROWNSVILLE, TX

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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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FORTACERO S.A. DE CV  
BLVD CARLOS SALINAS DE GORTARI  
KM 8.8  
APODACA, N.L. MEXICO 66600

ITEM #	ITEM DESCRIPTION	QTY	HEAT #	MECHANICAL PROPERTIES							CHEMICAL PROPERTIES											
				YIELD TO TENSILE RATIO	YIELD STRENGTH	TENSILE STRENGTH	ELONG	CHARPY IMPACT		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	CE	
					PSI	MPa		%	TEMP													IMPACT ENERGY
					MPa	MPa		%	°F													FT-LBS
1	W27 -161.0 40' W690 x240.0 12.192 M	1	402010	.77	53000	69000	30				.07	1.11	.015	.024	.21	.25	.11	.15	.04	.01	.019	.32
				.77	54000	70000	28												.01	.16		
						365	476	30														
						372	483	28														
2	W27 -161.0 40' W690 x240.0 12.192 M	2	402014	.77	54000	70000	30				.07	1.10	.015	.025	.24	.28	.11	.14	.03	.01	.019	.32
				.79	55000	70000	32												.01	.16		
						372	483	30														
						379	483	32														
3	W30 - 90.0 40' W760 x134.0 12.192 M	13	402042	.79	56000	71000	28				.07	1.00	.014	.024	.24	.28	.12	.12	.04	.01	.021	.30
				.79	56000	71000	27												.01	.16		
						386	490	28														
						386	490	27														
4	W30 - 90.0 40' W760 x134.0 12.192 M	5	402043	.79	58000	73000	27				.07	1.00	.014	.024	.24	.30	.11	.13	.04	.01	.022	.31
				.81	57000	70000	28												.01	.16		
						400	503	27														
						393	483	28														
5	W30 - 90.0 40' W760 x134.0 12.192 M	12	402049	.79	55000	70000	26				.07	1.00	.016	.026	.26	.24	.11	.18	.04	.01	.019	.31
				.77	55000	71000	28												.01	.16		
						379	483	26														
						379	490	28														
6	W30 - 90.0 40' W760 x134.0 12.192 M	43	402050	.79	56000	71000	27				.07	1.00	.017	.025	.26	.27	.11	.17	.04	.01	.021	.31
				.77	55000	71000	26												.01	.16		
						386	490	27														
						379	490	26														
7	W30 - 90.0 40' W760 x134.0 12.192 M	55	402052	.81	60000	74000	26				.07	1.03	.015	.025	.23	.29	.11	.13	.04	.01	.021	.31
				.82	58000	71000	26												.01	.16		
						414	510	26														
						400	490	26														
8	W30 - 90.0 40' W760 x134.0 12.192 M	10	402053	.77	55000	71000	27				.07	1.00	.014	.020	.27	.26	.11	.13	.04	.01	.021	.30
				.79	56000	71000	27												.01	.16		
						379	490	27														
						386	490	27														

Formula:  $CE = C + \frac{Mn}{6} + \frac{(Cr+Mo+V)}{5} + \frac{(Ni+Cu)}{15}$  Corrosion Index:  $CI = 26.01(\%Cu) + 3.88(\%Ni) + 1.26(\%Cr) + 1.48(\%Mo) + 17.28(\%P) + 7.25(\%Cu) + 6.10(\%Ni) + 33.33(\%Cu)$   
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.

*Ray Lennell*  
QUALITY ASSURANCE

CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI  
SWORN TO AND SUBSCRIBED BEFORE ME THIS  
1 Day of 04/13  
*Charlene Wallis* NOTARY PUBLIC  
MY COMMISSION EXPIRES 10/21/2011

