

NBI 009614

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.

DATE	10/25/11
INVOICE NO.	440545
BILL OF LADING	41842
CUSTOMER NO.	0829
CUSTOMER P.O.	4500081820

NUCOR-YAMATO STEEL CO.

P.O. BOX 1228 • BLYTHEVILLE, AR 72316

SHIP TO
FORTACERO C/O GULF PORT MARINE
PORT OF BROWNSVILLE
BROWNSVILLE, TX

SPECIFICATIONS

ASTM A992/A992M-06a A572/A572M GR50-07
ASTM A709/A709M-09 GR50 (345)
ASTM A709/A709M-09 GR50S (345S)
ASTM A6/A6M-09

SOLD TO
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	PSI		TEMP	IMPACT ENERGY														
					MPa	MPa		*F	FT-LBS														
			%	*C	JOULES																		
1	W18 40' x177.0 12.192 M	23	373191	.77	57000	74000	28					.07	1.25	.024	.022	.22	.26	.11	.11	.03	.02	.010	.33
	W460 x177.0 12.192 M			.76	57000	75000	28													.01	.17		
2	W18 40' x177.0 12.192 M	30	373194	.77	56000	73000	29					.08	1.25	.019	.024	.24	.27	.10	.09	.03	.02	.010	.34
	W460 x177.0 12.192 M			.78	57000	73000	28													.01	.18		
3	W18 40' x177.0 12.192 M	9	373196	.78	56000	72000	29					.08	1.25	.020	.023	.24	.26	.10	.09	.03	.02	.010	.34
	W460 x177.0 12.192 M			.78	56000	72000	29													.01	.18		
4	W18 40' x177.0 12.192 M	1	373200	.78	56000	72000	29					.07	1.27	.015	.027	.29	.27	.11	.09	.03	.02	.010	.34
	W460 x177.0 12.192 M			.78	56000	72000	29													.01	.17		
5	W18 40' x177.0 12.192 M	1	373365	.76	54000	71000	29					.07	1.14	.018	.028	.26	.26	.10	.11	.03	.00	.019	.31
	W460 x177.0 12.192 M			.77	55000	71000	30													.01	.16		
6	W21 40' x150.0 12.192 M	2	373232	.78	58000	74000	27					.07	1.25	.016	.020	.26	.29	.12	.09	.03	.02	.009	.34
	W530 x150.0 12.192 M			.78	58000	74000	26													.01	.17		
7	W21 40' x150.0 12.192 M	18	373239	.76	55000	72000	27					.07	1.00	.023	.022	.25	.27	.11	.11	.03	.00	.021	.30
	W530 x150.0 12.192 M			.77	55000	71000	26													.01	.15		
8	W21 40' x150.0 12.192 M	47	373242	.77	54000	70000	26					.07	1.00	.020	.028	.23	.27	.10	.10	.03	.00	.019	.29
	W530 x150.0 12.192 M			.78	54000	69000	26													.01	.15		
9	W21 40' x150.0 12.192 M	37	373246	.78	56000	72000	26					.08	1.10	.015	.026	.26	.26	.11	.09	.03	.00	.018	.30
	W530 x150.0 12.192 M			.78	56000	72000	26													.01	.17		

W = %C + %Si + %Mn + %Cu + %Ni + %Cr + %Mo + %V + %Nb + %Ti + %Al + %N
 CARRON EQUIVALENT: CE = CE(HW) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15
 Corrosion Index: CI = 26.01(%Cu) + 3.88(%Ni) + 1.20(%Cr) + 1.48(%Nb) + 17.28(%P) + 7.25(%Cu)(%Ni) + 8.10(%Ni)(%P) + 33.38(%Cu)²
 Material 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 Linnell
QUALITY ASSURANCE

STATE OF ARKANSAS COUNTY OF MISSISSIPPI
SWORN TO AND SUBSCRIBED BEFORE ME THIS
25 Day of 10/11
Charlene Wallis NOTARY PUBLIC
MY COMMISSION EXPIRES 10/21/2018
CHARLENE WALLIS
MY Comm. Exp 10-21-2018
PUBLIC NOTARY
ARIZONA

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