ACL 009712 (Aceros de Grado)

DATE	9/08/11
INVOICE NO.	432445
BILL OF LADING	37243
CUSTOMER NO.	4829
CUSTOMER P.O.	4500078552

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.

SHIP TO
ACEROS DE GRADO C/O GULF STREAM MAR
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
ACEROS DE GRADO, SA DE CV
AV FELIX U GOMEZ 2828 NTE COL MODER
RFC AGR0811247V9
MONTERREY, NL CP 64530

ITEM #	ITEM DESCRIPTION	QTY	HEAT #	MECHANICAL PROPERTIES: YIELD TO TENSILE RATIO	YIELD STRENGTH PSI / MPa	TENSILE STRENGTH PSI / MPa	ELONG % / %	CHARPY IMPACT TEMP °F / °C	IMPACT ENERGY FT-LBS / JOULES			CHEMICAL PROPERTIES: C	Mn	P	S	Si	Cu	Ni	Cr	Mo / Sn	V / Pcm	Cb	CE / CI
1	W24 - 68.0	1	367101	.82	63000	77000	24					.08	1.35	.011	.020	.28	.28	.09	.09	.03	.06	.002	.37
	40'			.83	65000	78000	23													.01	.19		
	W610 x101.0				434	531	24																
	12.192 M				448	538	23																
2	W24 - 68.0	2	367103	.81	60000	74000	24					.08	1.35	.014	.024	.29	.28	.09	.10	.03	.06	.002	.37
	40'			.83	62000	75000	25													.01	.19		
	W610 x101.0				414	510	24																
	12.192 M				427	517	25																
3	W24 - 68.0	3	369501	.78	52000	67000	27					.07	.94	.009	.023	.23	.25	.08	.08	.02	.00	.017	.27
	40'			.78	52000	67000	28													.03	.15		
	W610 x101.0				359	462	27																
	12.192 M				359	462	28																
4	W24 - 68.0	44	369545	.81	56000	69000	25					.07	1.00	.014	.024	.21	.27	.10	.08	.03	[illegible]	.019	.28
	40'			.81	56000	69000	25													.01	.15		
	W610 x101.0				386	476	25																
	12.192 M				386	476	25																
5	W24 - 68.0	66	369547	.81	57000	70000	26					.07	1.02	.012	.028	.22	.27	.09	.07	.03	.00	.022	.28
	40'			.81	57000	70000	26													.03	.15		
	W610 x101.0				393	483	26																
	12.192 M				393	483	26																
6	W24 - 68.0	87	369549	.79	53000	67000	26					.07	.92	.010	.023	.23	.26	.10	.06	.03	.00	.017	[illegible]
	40'			.80	53000	66000	28													.01	.15		
	W610 x101.0				365	462	26																
	12.192 M				365	455	28																
7	W24 - 68.0	39	369551	.78	53000	68000	24					.08	.90	.014	.024	.22	.26	.11	.08	.04	[illegible]	[illegible]	
	40'			.78	53000	68000	25													.01	[illegible]		
	W610 x101.0				365	469	24																
	12.192 M				365	469	25																
8	W24 - 68.0	1	369553	.79	53000	67000	26					.07	.93	.012	.025	.22	.27	.11	.08	.03	[illegible]	[illegible]	
	40'			.80	53000	66000	26													.01	.15		
	W610 x101.0				365	462	26																
	12.192 M				365	455	26																

$Pcm = C + \frac{Si}{30} + \frac{Mn}{20} + \frac{Cu}{20} + \frac{Ni}{60} + \frac{Cr}{20} + \frac{Mo}{15} + \frac{V}{10} + 5B$ B=Approx..0005

CARBON EQUIVALENT: $CE = CE(IIW) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$
Mercury has not been used in the direct manufacturing of this material.

Corrosion Index: $CI = 26.01(\%Cu) + 3.88(\%Ni) + 1.20(\%Cr) + 1.49(\%Si) + 17.28(\%P) - 7.29(\%Cu)(\%Ni) - 9.10(\%Ni)(\%P) - 33.39(\%Cu)^2$

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.

Gary Lemmell

QUALITY ASSURANCE

CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI
SWORN TO AND SUBSCRIBED BEFORE ME THIS
8 Day of 09/11

Charlene Wallis NOTARY PUBLIC

MY COMMISSION EXPIRES 10/21/2013

CHARLENE WALLIS
MY Comm. Exp. 10-21-2013
NOTARY PUBLIC
MISSISSIPPI CO. ARKANSAS