DATE	2/21/13
INVOICE NO.	537692
BILL OF LADING	100157
CUSTOMER NO.	5446
CUSTOMER P.O.	600629

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

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

48782

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

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
	:4 - 68.0	31	400550	.77	55000	71000	26			.07	1.00	.012	.025	.25	.30	.13	.11	.03	.00	.021	.30
	40'			.77	55000	71000	25											.01	.16		
	W610 x101.0				379	490	26														
	12.192 M				379	490	25														
2	W24 - 68.0	15	400552	.79	57000	72000	25			.08	1.01	.015	.028	.25	.31	.11	.12	.03	.00	.020	.31
	40'			.79	56000	71000	27											.01	.17		
	W610 x101.0				393	496	25														
	12.192 M				386	490	27														
3	W24 - 68.0	16	400555	.79	56000	71000	27			.07	1.02	.012	.028	.26	.31	.11	.10	.03	.00	.018	.30
	40'			.79	56000	71000	28											.01	.16		
	W610 x101.0				386	490	27														
	12.192 M				386	490	28														
4	W24 - 68.0	1	400557	.79	57000	72000	26			.07	1.00	.016	.022	.24	.31	.11	.11	.03	.01	.021	.30
	40'			.78	56000	72000	25											.01	.16		
	W610 x101.0				393	496	26														
	12.192 M				386	496	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: $CE = CE(IIW) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$

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

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.

Gary Lemmell
QUALITY ASSURANCE

CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI
SWORN TO AND SUBSCRIBED BEFORE ME THIS 21 Day of 02/13

Charlene Wallis NOTARY PUBLIC

MY COMMISSION EXPIRES 10/21/2013

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

FERRE BARNIEDO, S.A. DE C.V.
ORIGINAL DE NUESTROS ARCHIVOS
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FECHA 5-8-2013
ventas@ferrebarniedo.com.mx