

DATE	10/14/11
INVOICE NO.	438381
BILL OF LADING	40608
CUSTOMER NO.	5446
CUSTOMER P.O.	600217

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.

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

S P E C I F I C A T I O N S
 ASTM A992/A992M-06a A572/A572M GR50-07
 ASTM A709/A709M-09 GR50 (345)
 ASTM A709/A709M-09 GR50S (345S)
 ASTM A6/A6M-09
 45460

S O L D
 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					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		PSI	%													TEMP	IMPACT ENERGY
1	5 - 33.9 40' C380 x 50.4 12.192 M	4	363935	.79	55000	70000	26					.08	.90	.019	.034	.24	.31	.11	.14	.03	.00	.016	.29
2	C15 - 33.9 40' C380 x 50.4 12.192 M	3	366972	.80	58000	69000	26					.07	.90	.014	.026	.23	.29	.10	.09	.03	.00	.014	.27
3	C15 - 33.9 40' C380 x 50.4 12.192 M	16	366976	.80	56000	70000	27					.07	.90	.015	.033	.26	.26	.10	.10	.03	.00	.016	.27
4	C15 - 33.9 40' C380 x 50.4 12.192 M	1	366981	.80	57000	71000	26					.07	.90	.020	.035	.20	.33	.10	.14	.03	.00	.015	.28
5	C15 - 33.9 40' C380 x 50.4 12.192 M	12	369702	.78	54000	69000	25					.07	.91	.013	.032	.22	.29	.10	.10	.03	.00	.014	.28
6	C15 - 40.0 380 x 60.0 12.192 M	72	369808	.78	56000	72000	26					.07	1.10	.018	.033	.29	.29	.10	.11	.03	.00	.014	.31

Fe=C+S+Mn+Cu+Ni+Cr+Mo+V+5B lbs/Approx. 1005
 30 20 20 60 20 15 10
 CARBON EQUIVALENT: CE = CE(IIW) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15
 Correction Index: CI = 28.01(%Cu) + 3.68(%Ni) + 1.20(%Cr) + 1.48(%S) + 17.28(%P) - 7.29(%Cu)(%Ni) - 0.10(%Ni)(%P) - 33.38(%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.

Gay Lemell

QUALITY ASSURANCE

CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI
 SWORN TO AND SUBSCRIBED BEFORE ME THIS

14 Day of 10/11

Charlene Wallis NOTARY PUBLIC

MY COMMISSION EXPIRES 10/21/2018

