

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.

DATE	8/31/11
INVOICE NO.	431110
BILL OF LADING	36449
CUSTOMER NO.	5446
CUSTOMER P.O.	600165

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

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

45090

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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	PSI		TEMP	IMPACT ENERGY																								
					MPa	MPa		° F	FT-LBS																								
			%	° C	JOULES																												
2	W27 - 84.0	2	371362	.80	55000	69000	28			.07	.92	.014	.026	.23	.30	.10	.08	.03	.00	.015	.27												
	40'			.78	53000	68000		28																									
	W690 x125.0																																
2	W27 - 84.0	6	371363	.77	55000	71000	28			.07	.90	.013	.028	.24	.27	.11	.07	.03	.00	.015	.27												
	40'			.76	55000	72000		29																									
	W690 x125.0																																
3	W27 - 84.0	19	371364	.79	56000	71000	29			.07	.93	.013	.028	.24	.27	.11	.08	.03	.00	.015	.28												
	40'			.77	55000	71000		29																									
	W690 x125.0																																
4	W27 - 84.0	15	371365	.77	53000	69000	27			.08	.90	.015	.019	.22	.25	.10	.09	.03	.00	.017	.27												
	40'			.77	53000	69000		28																									
	W690 x125.0																																
5	W27 - 84.0	6	371366	.78	53000	68000	26			.08	.95	.017	.027	.22	.24	.08	.09	.03	.00	.015	.28												
	40'			.78	53000	68000		28																									
	W690 x125.0																																

Pcm = C + $\frac{Si}{30}$ + $\frac{Mn}{20}$ + $\frac{Cu}{20}$ + $\frac{Ni}{60}$ + $\frac{Nb}{15}$ + $\frac{V}{10}$ + 5 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(%Mn) + (%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.

Gay Lennell
QUALITY ASSURANCE

CUSTOMER COPY

STATE OF ARKANSAS COUNTY OF MISSISSIPPI
SWORN TO AND SUBSCRIBED BEFORE ME THIS
31 Day of 08/11
Charlene Wallis NOTARY PUBLIC
MY COMMISSION EXPIRES 10/21/2013

