

| | |
|----------------|---------|
| DATE | 5/05/11 |
| INVOICE NO. | 407092 |
| BILL OF LADING | 22220 |
| CUSTOMER NO. | 5446 |
| CUSTOMER P.O. | 600053 |

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.

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

24173

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O
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 | YIELD STRENGTH | TENSILE STRENGTH | ELONG | CHARPY IMPACT | IMPACT ENERGY | C | Mn | P | S | Si | Cu | Ni | Cr | Mo | V | Cb | CE |
| | | | | PSI | MPa | PSI | % | FT-LBS | FT-LBS | | | | | | | | | | | | |
| | | | | MPa | MPa | MPa | % | FT-LBS | FT-LBS | | | | | | | | | | | | |
| 3 | -130.0 | 1 | 365303 | .82 | 59000 | 73000 | 26 | 49 | 49 | .07 | 1.01 | .018 | .023 | .22 | .27 | .10 | .11 | .03 | .00 | .020 | .29 |
| | W840 x193.0 | | | .83 | 59000 | 73000 | 27 | 48 | 48 | | | | | | | | | .01 | .15 | | |
| | 12.192 M | | | | 407 | 490 | 26 | | | | | | | | | | | | | | |
| 2 | W33 -130.0 | 11 | 365305 | .82 | 60000 | 73000 | 25 | 49 | 49 | .08 | 1.00 | .015 | .023 | .24 | .30 | .09 | .10 | .03 | .00 | .022 | .31 |
| | 40' | | | .81 | 59000 | 73000 | 26 | 48 | 48 | | | | | | | | | .01 | .16 | | |
| | W840 x193.0 | | | | 414 | 503 | 25 | | | | | | | | | | | | | | |
| | 12.192 M | | | | 407 | 503 | 26 | | | | | | | | | | | | | | |
| 3 | W33 -130.0 | 10 | 365309 | .80 | 59000 | 74000 | 25 | 48 | 48 | .08 | 1.00 | .014 | .022 | .27 | .30 | .11 | .12 | .03 | .00 | .022 | .31 |
| | 40' | | | .78 | 58000 | 74000 | 26 | 47 | 47 | | | | | | | | | .01 | .17 | | |
| | W840 x193.0 | | | | 407 | 511 | 25 | | | | | | | | | | | | | | |
| | 12.192 M | | | | 400 | 511 | 26 | | | | | | | | | | | | | | |
| 4 | W33 -130.0 | 6 | 365311 | .83 | 59000 | 71000 | 26 | 48 | 48 | .07 | 1.00 | .013 | .022 | .22 | .28 | .11 | .10 | .03 | .00 | .019 | .30 |
| | 40' | | | .80 | 56000 | 70000 | 25 | 47 | 47 | | | | | | | | | .01 | .15 | | |
| | W840 x193.0 | | | | 407 | 490 | 26 | | | | | | | | | | | | | | |
| | 12.192 M | | | | 386 | 483 | 25 | | | | | | | | | | | | | | |
| 5 | W33 -130.0 | 1 | 365328 | .80 | 56000 | 70000 | 26 | 47 | 47 | .07 | 1.01 | .016 | .022 | .22 | .29 | .10 | .09 | .03 | .00 | .021 | .29 |
| | 40' | | | .78 | 54000 | 69000 | 26 | 46 | 46 | | | | | | | | | .01 | .15 | | |
| | W840 x193.0 | | | | 386 | 483 | 25 | | | | | | | | | | | | | | |
| | 12.192 M | | | | 372 | 476 | 26 | | | | | | | | | | | | | | |
| 6 | W33 -130.0 | 1 | 365337 | .79 | 59000 | 75000 | 26 | 47 | 47 | .08 | 1.10 | .017 | .022 | .29 | .28 | .12 | .13 | .03 | .00 | .020 | .32 |
| | 40' | | | .80 | 60000 | 75000 | 26 | 47 | 47 | | | | | | | | | .01 | .17 | | |
| | 10 x193.0 | | | | 407 | 517 | 26 | | | | | | | | | | | | | | |
| | 12.192 M | | | | 414 | 517 | 26 | | | | | | | | | | | | | | |

TEL: 58361000
LA ORIGINAL DE NUESTROS ARCHIVOS,
REMISICION DE NUESTROS ARCHIVOS,
VENTAS@ferrebarniedo.com.mx
COPIA DE FERRE BARNIEDO, S.A. DE C.V.

$Pcm = C + \frac{Si}{30} + \frac{Mn}{20} + \frac{Cu}{60} + \frac{Ni}{20} + \frac{V}{15} + 5B$ Approx. 0.001
CARBON EQUIVALENT: CE = CE(II) = C + Mn% + (Cr+Mo+V)/5 + (Ni+Cu)/15
Mercury has not been used in the direct manufacturing of this material.
Corrosion Index: $CI = 26.01(\%Cu) + 3.82(\%Ni) + 1.20(\%Cr) + 1.49(\%Si) + 17.28(\%P) + 7.29(\%V) + 9.10(\%W) + 33.39(\%Cu)^2$

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.

Dany Lennell
QUALITY ASSURANCE

CUSTOMER COPY

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

5 Day of 05/11

Charlene Wallis NOTARY PUBLIC

MY COMMISSION EXPIRES 10/21/2011

