



6600 South Harlem Avenue
Argo, IL 60501-1930

WELDBEND CORPORATION
PO Box 2388
Sulphur, LA
PO: P0230242-01

Material Test Report

| | | | | | | | | | | | | | | | | | | | | | |
|-----------------|---|----------------------------------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|----------|-----------|--------------|--------------|--------------|------------|------------|-------------|
| | | <u>Heat Treatment Info</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Heat Code</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Product</u> | | | | | | | | | | | | | | | | | | | |
| | | 6" x 3" Std Concentric Reducer | | | | | | | | | | | | | | | | | | | |
| | | 613Bn | | | | | | | | | | | | | | | | | | | |
| | | US STEEL | | | | | | | | | | | | | | | | | | | |
| | | A 234-18 WPB | | | | | | | | | | | | | | | | | | | |
| | | Dimensional Specification: B16.9 | | | | | | | | | | | | | | | | | | | |
| | | WPB | | | | | | | | | | | | | | | | | | | |
| | | Heat Treat: Normalized | | | | | | | | | | | | | | | | | | | |
| <u>Quantity</u> | | <u>C</u> | <u>Mn</u> | <u>P</u> | <u>S</u> | <u>Si</u> | <u>Cu</u> | <u>Ni</u> | <u>Cr</u> | <u>Mo</u> | <u>V</u> | <u>Al</u> | <u>Ti</u> | <u>B</u> | <u>Cb</u> | <u>Tens.</u> | <u>Yield</u> | <u>Elong</u> | <u>ROA</u> | <u>BHN</u> | <u>BHN2</u> |
| | 6 | 0.21 | 0.95 | 0.007 | 0.006 | 0.22 | 0.15 | 0.05 | 0.09 | 0.030 | 0.00 | 0.040 | 0.001 | 0.0001 | 0.010 | 74,500 | 39,900 | 31.00 | - | 150 | 152 |
| | | CE (IIV): 0.406 | | | | | | | | | | | | | | | | | | | |
| | | CE (PCM): 0.280 | | | | | | | | | | | | | | | | | | | |

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|-----------------|----|-----------------------------------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|----------|-----------|--------------|--------------|--------------|------------|------------|-------------|
| | | <u>Heat Treatment Info</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Heat Code</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Product</u> | | | | | | | | | | | | | | | | | | | |
| | | 2" x 1 1/2" XS Concentric Reducer | | | | | | | | | | | | | | | | | | | |
| | | 11595 | | | | | | | | | | | | | | | | | | | |
| | | BENTELER | | | | | | | | | | | | | | | | | | | |
| | | A 234-18 WPB | | | | | | | | | | | | | | | | | | | |
| | | Dimensional Specification: B16.9 | | | | | | | | | | | | | | | | | | | |
| | | WPB | | | | | | | | | | | | | | | | | | | |
| | | Heat Treat: Normalized | | | | | | | | | | | | | | | | | | | |
| <u>Quantity</u> | | <u>C</u> | <u>Mn</u> | <u>P</u> | <u>S</u> | <u>Si</u> | <u>Cu</u> | <u>Ni</u> | <u>Cr</u> | <u>Mo</u> | <u>V</u> | <u>Al</u> | <u>Ti</u> | <u>B</u> | <u>Cb</u> | <u>Tens.</u> | <u>Yield</u> | <u>Elong</u> | <u>ROA</u> | <u>BHN</u> | <u>BHN2</u> |
| | 12 | 0.17 | 0.96 | 0.011 | 0.003 | 0.24 | 0.14 | 0.06 | 0.12 | 0.020 | 0.00 | - | 0.001 | 0.0002 | 0.002 | 71,500 | 39,900 | 35.00 | - | 156 | 147 |
| | | CE (IIV): 0.372 | | | | | | | | | | | | | | | | | | | |
| | | CE (PCM): 0.243 | | | | | | | | | | | | | | | | | | | |

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|-----------------|---|----------------------------------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|----------|-----------|--------------|--------------|--------------|------------|------------|-------------|
| | | <u>Heat Treatment Info</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Heat Code</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Product</u> | | | | | | | | | | | | | | | | | | | |
| | | 6" x 4" XS Concentric Reducer | | | | | | | | | | | | | | | | | | | |
| | | 623Bn | | | | | | | | | | | | | | | | | | | |
| | | US STEEL | | | | | | | | | | | | | | | | | | | |
| | | A 234-18 WPB | | | | | | | | | | | | | | | | | | | |
| | | Dimensional Specification: B16.9 | | | | | | | | | | | | | | | | | | | |
| | | WPB | | | | | | | | | | | | | | | | | | | |
| | | Heat Treat: Normalized | | | | | | | | | | | | | | | | | | | |
| <u>Quantity</u> | | <u>C</u> | <u>Mn</u> | <u>P</u> | <u>S</u> | <u>Si</u> | <u>Cu</u> | <u>Ni</u> | <u>Cr</u> | <u>Mo</u> | <u>V</u> | <u>Al</u> | <u>Ti</u> | <u>B</u> | <u>Cb</u> | <u>Tens.</u> | <u>Yield</u> | <u>Elong</u> | <u>ROA</u> | <u>BHN</u> | <u>BHN2</u> |
| | 6 | 0.21 | 0.92 | 0.011 | 0.004 | 0.22 | 0.16 | 0.04 | 0.09 | 0.040 | 0.00 | 0.046 | 0.002 | 0.0005 | 0.000 | 75,500 | 39,900 | 34.00 | - | 149 | 154 |
| | | CE (IIV): 0.403 | | | | | | | | | | | | | | | | | | | |
| | | CE (PCM): 0.282 | | | | | | | | | | | | | | | | | | | |

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|-----------------|---|-----------------------------------|-----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|----------|-----------|--------------|--------------|--------------|------------|------------|-------------|
| | | <u>Heat Treatment Info</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Heat Code</u> | | | | | | | | | | | | | | | | | | | |
| | | <u>Product</u> | | | | | | | | | | | | | | | | | | | |
| | | 3" Class 150 Welding Neck StdB RF | | | | | | | | | | | | | | | | | | | |
| | | 3DD73 | | | | | | | | | | | | | | | | | | | |
| | | RIVA | | | | | | | | | | | | | | | | | | | |
| | | A 105-18 | | | | | | | | | | | | | | | | | | | |
| | | Dimensional Specification: B16.5 | | | | | | | | | | | | | | | | | | | |
| | | A | | | | | | | | | | 105 | | | | | | | | | |
| | | Hot Formed | | | | | | | | | | | | | | | | | | | |
| <u>Quantity</u> | | <u>C</u> | <u>Mn</u> | <u>P</u> | <u>S</u> | <u>Si</u> | <u>Cu</u> | <u>Ni</u> | <u>Cr</u> | <u>Mo</u> | <u>V</u> | <u>Al</u> | <u>Ti</u> | <u>B</u> | <u>Cb</u> | <u>Tens.</u> | <u>Yield</u> | <u>Elong</u> | <u>ROA</u> | <u>BHN</u> | <u>BHN2</u> |
| | 8 | 0.19 | 1.07 | 0.009 | 0.010 | 0.24 | 0.12 | 0.07 | 0.13 | 0.020 | 0.00 | 0.030 | 0.020 | 0.0003 | 0.001 | 73,000 | 39,900 | 30.00 | 70.00 | 144 | 143 |
| | | CE (IIV): 0.406 | | | | | | | | | | | | | | | | | | | |
| | | CE (PCM): 0.263 | | | | | | | | | | | | | | | | | | | |

We hereby certify that the material meets the following:
 • All fittings and flanges meet NACE MRO-175/ISO 15156-Latest Revision.
 • All fittings and flanges meet NACE MRO-103 - Latest Revision.
 • All non high-yield fittings meet the requirements of ASTM A-234 WPB (AND SA-234).
 • All fittings are seamless except as noted.
 • All non-high yield flanges meet the requirements of ASTM A-105 (AND SA-105)
 • Starting Material Seamless Pipe for elbows, tees and reducers.
 • Plate for caps and welded fittings.
 • Bars, Billets or Blooms for flanges and certain caps and tees.
 • Ladle chemistry reported.
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Richard Purpura

Richard Purpura
Quality Assurance Department
1/14/2022

We hereby certify that the material meets the following:
 • ISO 9001:2015 CERTIFIED MANUFACTURER
 • Test Results herein are correct as contained in test records retained by the company in accordance with EN 10 204 Para 3.1 in accordance with PED Annex 1, Paragraph 4.3 of 2014/68/EU
 • No Weld Repair Performed. No Lead Content. No Mercury Content.
 • Knowingly making false, fictitious, or fraudulent statements on a MTR may result in legal liability.
 • Material has been manufactured/supplied and tested in accordance with the most current version of the Weldbend Quality System Program

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