



BEDFORD
TECHNOLOGY

BARFORCE®
HTP PLASTIC LUMBER PRODUCTS
TECHNICAL MANUAL

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Updated 5/02/11



BARFORCE® PRODUCT OVERVIEW

BarForce® recycled plastic lumber is a high strength structural product. BarForce® is made of HDPE (High Density Polyethylene) and fiberglass additive that encapsulates full length fiber reinforced polymer rebar. Color stabilizers and UV inhibitors are also added to protect color fade over time.

BarForce® is available in primarily larger profiles due to the strength characteristics. BarForce® is resistant to marine borers, termites, fungus, salt and oils so replacement due to these elements is nearly nonexistent.

BarForce® is proven for use in structural applications where a wider span, dimensional stability, increased strength or stiffness is required. Due to the increase strength and resistance to environmental elements, BarForce® is well suited for exterior applications where structural support or load bearing is required. Examples of applications are; support joints, marine fenders, and heavy retaining walls, bridge & pier systems, Wales and pile applications.

Chemical Resistance










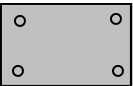

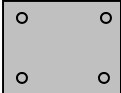
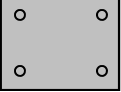
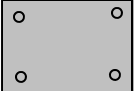

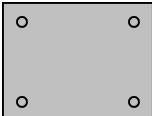
High-density polyethylene has a high resistance to most acids and chemicals. Bedford Plastic Lumber is not affected by exposure to most substances.

Ultraviolet Weathering

An ultraviolet stabilizer is incorporated at the time of manufacture. It protects the plastic from ultraviolet light degradation and ensures that the outside of the product will not degrade in exterior applications.

BARFORCE® RECYCLED PLASTIC LUMBER

SIZE CHART

| SHAPE | LUMBER SIZE | REBAR SIZE & QUANTITY | ACTUAL DIMENSIONS | LONGEST LENGTHS AVAILABLE FEET | WEIGHT LBS PER FOOT |
|-------------------------------------------------------------------------------------|-------------|-----------------------|-------------------|--------------------------------|---------------------|
|  | 3"x10" | 2-3/4" | 2 1/2" X 9 3/8" | 16 | 10 |
|  | 3"x12" | 2-3/4" | 2 1/2" x 11 1/4" | 16 | 12 |
|  | 4"x4" | 4-1/2" | 3 1/2" x 3 1/2" | 16 | 5 |
|  | 4"x12" | 2-3/4" | 3 1/2" x 11 1/4" | 20 | 16.5 |
|  | 6"x6" | 4-1/2" | 5 1/2" x 5 1/2" | 20 | 12.6 |
|  | 10" Round | 6-1" | 9.9" | 16 | 32 |
|  | 10" Round | 6-1.25" | 9.9" | 16 | 32 |
|  | 8"x8" | 4-1" | 7.5" x 7.5" | 16 | 24 |
|  | 8"x8" | 4-1.25" | 7.5" x 11.375" | 16 | 36 |
|  | 8"x12" | 4-1" | 7.5" x 11.375" | 16 | 36 |
|  | 8"x12" | 4-1.25" | 7.5" x 11.375" | 16 | 24 |
|  | 10"x10" | 4-1" | 9.75" x 9.75" | 16 | 42 |
|  | 10"x10" | 4-1.25" | 9.75" x 9.75" | 16 | 42 |
|  | 10"x12" | 4-1" | 9.9" x 11.9" | 24 | 50 |
|  | 12"x12" | 4-1" | 11.9" x 11.9" | 16 | 60 |
|  | 12" x 12" | 4-1.25" | 11.9" x 11.9" | 16 | 60 |

**BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER
3X10 WITH 2 3/4" FIBERGLASS BARS**

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|--------------|--------|-------------------------------------------|
| MOR | D6109-97 | 4900 | PSI |
| Flexural Modulus | D6109-97 | 540000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 12/14/09

Actual size of product is 9 3/8" x 2 1/2"
Values are Calculated from tests of other size boards.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER 3X12 WITH 2 3/4" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|--------------|--------|-------------------------------------------|
| MOR | D6109-97 | 6400 | PSI |
| Flexural Modulus | D6109-97 | 702000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 03/06/09

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER 4x4 WITH 4 1/2" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|------------------|--------------|-------------------------------------------|
| MOR | D6109-97 | 9500 | PSI |
| Flexural Modulus 1% strain | D6109-97 | 557000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 06/09

Actual size of product is 3 1/2" x 3 1/2"

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

4x6 WITH 4 1/2" FIBERGLASS BARS

| TEST METHODS | | WEAK AXIS Y-Y | STRONG AXIS X-X | |
|-------------------------------------|--------------|---------------------|-----------------------|-------------------------------------------|
| TEST | ASTM TEST | VALUE | VALUE | ENGLISH UNITS |
| MOR | D6109-97 | 5900 | 8500 | PSI |
| Flexural Modulus 1% strain | D6109-97 | 450000 | 650000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | g/cc |
| Flash Point | | 340 | 340 | Deg C |
| Moisture Absorption | | 0.06 | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | |
| Flame Spread | E84(03a) | 62 | 62 | |
| Flame Spread Classification | E84(03a) | 60 | 60 | |
| Smoke Developed | E84(03a) | 230 | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | |
| Tensile Test (skin) | D638 | 3623 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours |

Test date 8/12/10

Actual size of product is 5 1/2" x 3 1/2"
 Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

4x10 WITH 2 3/4" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|--------------|--------|-------------------------------------------|
| MOR | D6109-97 | 4650 | PSI |
| Flexural Modulus –Joist Mode | D6109-97 | 515000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 03/06/09

Values are calculated from tests of other size boards.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER 4x12 WITH 2 3/4" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|------------------|--------------|-------------------------------------------|
| MOR | D6109-97 | 5487 | PSI |
| Flexural Modulus | D6109-97 | 603000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 03/06/09

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER 6x6 WITH 4 1/2" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|--------------|--------|-------------------------------------------|
| MOR | D6109-97 | 8400 | PSI |
| Flexural Modulus 1% strain | D6109-97 | 650000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 06/09

Actual size of products is 5 1/2" x 5 1/2"

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

6x10 WITH 4 3/4" FIBERGLASS BARS

| TEST METHODS | | WEAK AXIS Y-Y | STRONG AXIS X-X | |
|-------------------------------------|--------------|---------------------|-----------------------|-------------------------------------------|
| TEST | ASTM TEST | VALUE | VALUE | ENGLISH UNITS |
| MOR | D6109-97 | 4900 | 3900 | PSI |
| Flexural Modulus | D6109-97 | 380000 | 430000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | g/cc |
| Flash Point | | 340 | 340 | Deg C |
| Moisture Absorption | | 0.06 | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | |
| Flame Spread | E84(03a) | 62 | 62 | |
| Flame Spread Classification | E84(03a) | 60 | 60 | |
| Smoke Developed | E84(03a) | 230 | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | |
| Tensile Test (skin) | D638 | 3623 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours |

Test date 9/7/10

Actual size of products is 9 3/8" x 5 3/8"
 Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

6x12 WITH 4 1" FIBERGLASS BARS

| TEST METHODS | ASTM TEST | WEAK | STRONG | ENGLISH UNITS |
|-------------------------------------|--------------|-------------|-------------|-------------------------------------------|
| | | AXIS Y-Y | AXIS X-X | |
| TEST | ASTM TEST | VALUE | VALUE | ENGLISH UNITS |
| MOR | D6109-97 | 3640 | 5290 | PSI |
| Flexural Modulus | D6109-97 | 271000 | 515000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | g/cc |
| Flash Point | | 340 | 340 | Deg C |
| Moisture Absorption | | 0.06 | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | |
| Flame Spread | E84(03a) | 62 | 62 | |
| Flame Spread Classification | E84(03a) | 60 | 60 | |
| Smoke Developed | E84(03a) | 230 | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | |
| Tensile Test (skin) | D638 | 3623 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours |

Test date 12/02/09

Actual size of products is 11 3/8" X 5 3/8"
 Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER 8 X 8 WITH 4 1” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|--------------|--------|-------------------------------------------|
| MOR | D6109-97 | 3200 | PSI |
| Flexural Modulus | D6109-97 | 350000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Compression Strength—Parallel | D6108-97 | 2340 | PSI |
| Compression Modulus– Parallel | D6108-97 | 140000 | PSI |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 3/06/09

Actual size of products is 7 3/8" X 7 3/8"

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER 8 X 8 WITH 4 1 1/4" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|------------------|--------------|-------------------------------------------|
| MOR | D6109-97 | 3700 | PSI |
| Flexural Modulus | D6109-97 | 390000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Compression Strength—Parallel | D6108-97 | 2500 | PSI |
| Compression Modulus– Parallel | D6108-97 | 190000 | PSI |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 3/06/09

Actual size of products is 7 3/8" X 7 3/8"

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

8 X 12 WITH 4- 1" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | WEAK AXIS | | STRONG AXIS | | WEAK AXIS | | STRONG AXIS | |
|-------------------------------------|--------------|---------------|---------------|-------------------------------------------|--------------|--------------|--------------------|-------------|--|
| | | ENGLISH VALUE | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC VALUE | METRIC UNITS | | |
| MOR | D6109-97 | 3450 | 3900 | PSI | 1931 | MPa | MPa | | |
| Flexural Modulus | D6109-97 | 280000 | 400000 | PSI | 23.6 | 26.9 | MPa | | |
| Moment of Inertia, I | | 385 | 914 | Inch ⁴ | 0.0001602 | 0.0003803 | M ⁴ | | |
| Stiffness, EI | | 1.08E+08 | 3.65E+07 | LB-IN ² | 309 | 105 | KN-M ²⁵ | | |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc | | |
| Flash Point | | 340 | 340 | | | | Deg/C | | |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg | | |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa | | |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm | | |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | | | |

Test date 02/17/11

Actual size of products is 7 3/8" X 11 3/8" Values are calculated from tests of other size bars.
 This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER **8 X 12 WITH 4- 1 1/4" FIBERGLASS BARS**

TEST METHODS

| TEST | ASTM TEST | WEAK | STRONG | ENGLISH UNITS | WEAK | STRONG | METRIC UNITS |
|-------------------------------------|--------------|---------------|---------------|-------------------------------------------|--------------|--------------|--------------------|
| | | AXIS | AXIS | | AXIS | AXIS | |
| | | ENGLISH VALUE | ENGLISH VALUE | | METRIC VALUE | METRIC VALUE | |
| MOR | D6109-97 | 4300 | 5100 | PSI | 29.6 | 35.2 | MPa |
| Flexural Modulus | D6109-97 | 300000 | 490000 | PSI | 207 | 3378 | MPa |
| Moment of Inertia, I | | 385 | 914 | Inch ⁴ | 0.0001602 | 0.0003803 | M ⁴ |
| Stiffness, EI | | 1.15E+07 | 4.48E+08 | LB-IN ² | 33 | 1285 | KN-M ²⁵ |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc |
| Flash Point | | 340 | 340 | | | | Deg/C |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | |

Test date 02/17/11

Actual size of products is 7 3/8" X 11 3/8" Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

RR 7

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

8 X 12 WITH 4- 1 1/2" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | WEAK | STRONG | ENGLISH UNITS | WEAK | STRONG | METRIC UNITS |
|-------------------------------------|--------------|---------------|---------------|-------------------------------------------|--------------|--------------|--------------------|
| | | AXIS | AXIS | | AXIS | AXIS | |
| | | ENGLISH VALUE | ENGLISH VALUE | | METRIC VALUE | METRIC VALUE | |
| MOR | D6109-97 | 5600 | 6800 | PSI | 38.6 | 46.9 | MPa |
| Flexural Modulus | D6109-97 | 390000 | 645000 | PSI | 2689 | 4447 | MPa |
| Moment of Inertia, I | | 385 | 914 | Inch ⁴ | 0.0001602 | 0.0003803 | M ⁴ |
| Stiffness, EI | | 1.50E+08 | 5.89E+08 | LB-IN ² | 431 | 1691 | KN-M ²⁵ |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc |
| Flash Point | | 340 | 340 | | | | Deg/C |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | |

Test date 02/17/11

Actual size of products is 7 3/8" X 11 3/8" Values are calculated from tests of other size bars.
This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

RR 7

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

8 X 12 WITH 4- 1 3/8" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | WEAK | STRONG | ENGLISH UNITS | WEAK | STRONG | METRIC UNITS |
|-------------------------------------|--------------|---------------|---------------|-------------------------------------------|--------------|--------------|--------------------|
| | | AXIS | AXIS | | AXIS | AXIS | |
| | | ENGLISH VALUE | ENGLISH VALUE | | METRIC VALUE | METRIC VALUE | |
| MOR | D6109-97 | 4892 | 5870 | PSI | 33.7 | 40.5 | MPa |
| Flexural Modulus | D6109-97 | 341000 | 552000 | PSI | 2351 | 3805 | MPa |
| Moment of Inertia, I | | 385 | 914 | Inch ⁴ | 0.0001602 | 0.0003803 | M ⁴ |
| Stiffness, EI | | | | LB-IN ² | | | KN-M ²⁵ |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc |
| Flash Point | | 340 | 340 | | | | Deg/C |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | |

Test date 02/17/11

Actual size of products is 7 3/8" X 11 3/8" Values are calculated from tests of other size bars.
This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

RR 7

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

8 X 12 WITH 4- 1 5/8" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | WEAK | STRONG | ENGLISH UNITS | WEAK | STRONG | METRIC UNITS |
|-------------------------------------|--------------|---------------|---------------|-------------------------------------------|--------------|--------------|--------------------|
| | | AXIS | AXIS | | AXIS | AXIS | |
| | | ENGLISH VALUE | ENGLISH VALUE | | METRIC VALUE | METRIC VALUE | |
| MOR | D6109-97 | 6200 | 7600 | PSI | 42.7 | 52.4 | MPa |
| Flexural Modulus | D6109-97 | 430000 | 725000 | PSI | 2965 | 4999 | MPa |
| Moment of Inertia, I | | 385 | 914 | Inch ⁴ | 0.0001602 | 0.0003803 | M ⁴ |
| Stiffness, EI | | 1.66E+08 | 6.62E+08 | LB-IN ² | 475 | 1901 | KN-M ²⁵ |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc |
| Flash Point | | 340 | 340 | | | | Deg/C |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | |

Test date 02/17/11

Actual size of products is 7 3/8" X 11 3/8" Values are calculated from tests of other size bars.
This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 X 10 WITH 4- 1” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 3704 | PSI | 25.5 | MPa |
| Flexural Modulus | D6109-97 | 353105 | PSI | 2435 | MPa |
| Moment of Inertia, I | | 753 | Inch ⁴ | 0.0003135 | M ⁴ |
| Stiffness, EI | | 2.66E+08 | LB-In ² | 763 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Modulus-Parallel | D6108-97 | 187000 | PSI | 1289 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 X 10 WITH 4- 1 1/4” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 4872 | PSI | 33.6 | MPa |
| Flexural Modulus | D6109-97 | 477170 | PSI | 3290 | MPa |
| Moment of Inertia, I | | 753 | Inch ⁴ | 0.0003135 | M ⁴ |
| Stiffness, EI | | 3.59E+08 | LB-In ² | 1031 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Modulus-Parallel | D6108-97 | 253000 | PSI | 1744 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 X 10 WITH 4- 1 3/8” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 5140 | PSI | 35.4 | MPa |
| Flexural Modulus | D6109-97 | 495000 | PSI | 3412 | MPa |
| Moment of Inertia, I | | 753 | Inch ⁴ | 0.0003135 | M ⁴ |
| Stiffness, EI | | 3.73E+08 | LB-In ² | 1070 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Modulus-Parallel | D6108-97 | 253000 | PSI | 1744 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 X 10 WITH 4- 1 1/2” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 5400 | PSI | 37.2 | MPa |
| Flexural Modulus | D6109-97 | 530000 | PSI | 3654 | MPa |
| Moment of Inertia, I | | 753 | Inch ⁴ | 0.0003135 | M ⁴ |
| Stiffness, EI | | 3.99E+08 | LB-In ² | 1145 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Modulus-Parallel | D6108-97 | 253000 | PSI | 1744 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 X 10 WITH 4- 1 5/8” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 5400 | PSI | 37.2 | MPa |
| Flexural Modulus | D6109-97 | 550000 | PSI | 3792 | MPa |
| Moment of Inertia, I | | 753 | Inch ⁴ | 0.0003135 | M ⁴ |
| Stiffness, EI | | 4.14E+08 | LB-In ² | 1189 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Modulus-Parallel | D6108-97 | 253000 | PSI | 1744 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10" ROUND WITH 6 - 1" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|--------------|--------|-------------------------------------------|
| MOR | D6109-97 | 42500 | PSI |
| Flexural Modulus | D6109-97 | 435000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Compression Strength—Parallel | D6108-97 | 2340 | PSI |
| Compression Modulus– Parallel | D6108-97 | 220000 | PSI |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 03/06/09

Actual size of product is 9.8" diameter.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10” ROUND WITH 6 - 1 1/4” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|-------------------------------------|--------------|--------|-------------------------------------------|
| MOR | D6109-97 | 5700 | PSI |
| Flexural Modulus | D6109-97 | 595000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Compression Strength—Parallel | D6108-97 | 2700 | PSI |
| Compression Modulus– Parallel | D6108-97 | 298000 | PSI |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 03/06/09

Actual size of product is 9.8” diameter.

This data represents average values NOT Minimums. Safety factors must be added in to the design.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 x 12 WITH 4 - 1" FIBERGLASS BARS

| TEST METHODS | ASTM TEST | WEAK | STRONG | ENGLISH UNITS | WEAK | STRONG | METRIC UNITS |
|-------------------------------------|--------------|----------|----------|-------------------------------------------|-----------|-----------|--------------------|
| | | AXIS | AXIS | | AXIS | AXIS | |
| MOR | D6109-97 | 3500 | 3400 | PSI | 24.1 | 23.4 | MPa |
| Flexural Modulus | D6109-97 | 340000 | 330000 | PSI | 2344 | 2275 | MPa |
| Moment of Inertia, I | | 962 | 1390 | Inch ⁴ | 0.0004005 | 0.0005787 | M ⁴ |
| Stiffness, EI | | 3.27E+08 | 4.59E+08 | LB-IN ² | 939 | 1317 | KN-M ²⁵ |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc |
| Compressive Strength- Parallel | D6108-97 | 3700 | 3700 | PSI | 25.5 | 25.5 | MPa |
| Compressive Modulus-Parallel | D6108-97 | 190000 | 190000 | PSI | 1309 | 1309 | MPa |
| Flash Point | | 340 | 340 | | | | Deg/C |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | |

Actual size of products is 9 7/8" x 11 7/8" Values are calculated from tests of other size bars.

Test date 02/17/11

This data represents average values NOT Minimums. Safety factors must be added in to the design. Data is not from actual tests it is calculated from 10x10 actual tests.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

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BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 x 12 WITH 4 - 1 1/4" FIBERGLASS BARS

| TEST METHODS | ASTM TEST | WEAK | STRONG | ENGLISH UNITS | WEAK | STRONG | METRIC UNITS |
|-------------------------------------|--------------|---------------|---------------|-------------------------------------------|--------------|--------------|--------------------|
| | | AXIS | AXIS | | AXIS | AXIS | |
| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC VALUE | METRIC UNITS |
| MOR | D6109-97 | 4141 | 3900 | PSI | 28.6 | 26.9 | MPa |
| Flexural Modulus | D6109-97 | 405500 | 380000 | PSI | 2796 | 2620 | MPa |
| Moment of Inertia, I | | 962 | 1390 | Inch ⁴ | 0.0004005 | 0.0005787 | M ⁴ |
| Stiffness, EI | | 3.90e+08 | 5.28e+08 | LB-IN ² | 1120 | 1516 | KN-M ²⁵ |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc |
| Compressive Strength– Parallel | D6108-97 | 4185 | 4185 | PSI | 28.8 | 28.8 | MPa |
| Compressive Modulus-Parallel | D6108-97 | 210833 | 210833 | PSI | 1453 | 1453 | MPa |
| Flash Point | | 340 | 340 | | | | Deg/C |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | |

Actual size of products is 9 7/8" x 11 7/8" Values are calculated from tests of other size bars.

Test date 02/17/11

This data represents average values NOT Minimums. Safety factors must be added in to the design. Data is not from actual tests it is calculated from 10x10 actual tests.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

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BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

10 x 12 WITH 4 - 1 5/8" FIBERGLASS BARS

| TEST METHODS | ASTM TEST | WEAK | STRONG | ENGLISH UNITS | WEAK | STRONG | METRIC UNITS |
|-------------------------------------|--------------|----------|----------|-------------------------------------------|-----------|-----------|--------------------|
| | | AXIS | AXIS | | AXIS | AXIS | |
| MOR | D6109-97 | 4900 | 4500 | PSI | 33.8 | 31.0 | MPa |
| Flexural Modulus | D6109-97 | 490000 | 460000 | PSI | 3378 | 3172 | MPa |
| Moment of Inertia, I | | 962 | 1390 | Inch ⁴ | 0.0004005 | 0.0005787 | M ⁴ |
| Stiffness, EI | | 4.71e+08 | 6.40E+08 | LB-IN ² | 1353 | 1835 | KN-M ²⁵ |
| Specific Gravity | D6111-97 | 0.99 | 0.99 | | | | g/cc |
| Compressive Strength– Parallel | D6108-97 | 4900 | 4900 | PSI | 33.7 | 33.7 | MPa |
| Compressive Modulus-Parallel | D6108-97 | 245000 | 245000 | PSI | 1689 | 1689 | MPa |
| Flash Point | | 340 | 340 | | | | Deg/C |
| Moisture Absorption | | 0.06 | 0.06 | | | | % by Weight |
| Average Screw Pull Out | D6117 | 646 | 646 | Lbs | 293 | 293 | Kg |
| Static Coefficient of Friction—Dry | D2394-83(99) | .53 | .53 | | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | .23 | | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | .51 | | | | |
| Flame Spread | E84(03a) | 62 | 62 | | | | |
| Flame Spread Classification | E84(03a) | 60 | 60 | | | | |
| Smoke Developed | E84(03a) | 230 | 230 | | | | |
| Smoke Developed Classification | E84(03a) | 250 | 250 | | | | |
| Tensile test (skin) | D638 | 3623 | 3623 | PSI | 24.9 | 24.9 | MPa |
| Notched impact resistance Method A | D256 | 2.77 | 2.77 | Ft*LB/IN | 15.1 | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | <0.02 | Oz-with 2.2lb sample | | | |
| Ultraviolet (skin) | D4329 | <10 | <10 | % Change in Type D durometer at 500 hours | | | |

Test date 02/17/11

Actual size of products is 9 7/8" x 11 7/8" Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design. Data is not from actual tests it is calculated from 10x10 actual tests.

- For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

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BARFORCE ® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

12 x 12 WITH 4 - 1" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 2815 | PSI | 19.4 | MPa |
| Flexural Modulus | D6109-97 | 274000 | PSI | 1889 | MPa |
| Moment of Inertia, I | | 1671 | Inch ⁴ | 0.0006956 | M ⁴ |
| Stiffness, EI | | 4.58E+08 | LB-In ² | 1314 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Strength-Parallel | D6108-97 | 2880 | PSI | 19.8 | MPa |
| Compression Modulus-Parallel | D6108-97 | 146600 | PSI | 1010 | MPa |
| Compression Strength-Perpendicular | D6108-97 | 702 | PSI | 4.8 | MPa |
| Compression Modulus-Perpendicular | D6108-97 | 100000 | PSI | 689 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design. For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce ® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

12 x 12 WITH 4 - 1 1/4" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 3702 | PSI | 25.5 | MPa |
| Flexural Modulus | D6109-97 | 360450 | PSI | 2485 | MPa |
| Moment of Inertia, I | | 1671 | Inch ⁴ | 0.0006956 | M ⁴ |
| Stiffness, EI | | 6.02E+08 | LB-In ² | 1729 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Strength-Parallel | D6108-97 | 3800 | PSI | 26.1 | MPa |
| Compression Modulus-Parallel | D6108-97 | 193100 | PSI | 1331 | MPa |
| Compression Strength-Perpendicular | D6108-97 | 908 | PSI | 6.2 | MPa |
| Compression Modulus-Perpendicular | D6108-97 | 110000 | PSI | 758 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design. For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

12 x 12 WITH 4 - 1 3/8" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 4100 | PSI | 28.3 | MPa |
| Flexural Modulus | D6109-97 | 375000 | PSI | 2586 | MPa |
| Moment of Inertia, I | | 1671 | Inch ⁴ | 0.0006956 | M ⁴ |
| Stiffness, EI | | 6.27E+08 | LB-In ² | 1789 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Strength-Parallel | D6108-97 | 3800 | PSI | 26.1 | MPa |
| Compression Modulus-Parallel | D6108-97 | 193100 | PSI | 1331 | MPa |
| Compression Strength-Perpendicular | D6108-97 | 908 | PSI | 6.2 | MPa |
| Compression Modulus-Perpendicular | D6108-97 | 110000 | PSI | 758 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design. For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

12 x 12 WITH 4 - 1 1/2" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 4400 | PSI | 30.3 | MPa |
| Flexural Modulus | D6109-97 | 405000 | PSI | 2792 | MPa |
| Moment of Inertia, I | | 1671 | Inch ⁴ | 0.0006956 | M ⁴ |
| Stiffness, EI | | 6.77E+08 | LB-In ² | 1942 | KN-M ² |
| Specific Gravity | D6111-97 | 0.99 | g/cc | | |
| Compression Strength-Parallel | D6108-97 | 3800 | PSI | 26.1 | MPa |
| Compression Modulus-Parallel | D6108-97 | 180000 | PSI | 1241 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design. For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

12 x 12 WITH 4 - 1 5/8" FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | ENGLISH VALUE | ENGLISH UNITS | METRIC VALUE | METRIC UNITS |
|-------------------------------------|--------------|---------------|-------------------------------------------|--------------|-------------------|
| MOR | D6109-97 | 4900 | PSI | 33.8 | MPa |
| Flexural Modulus | D6109-97 | 450000 | PSI | 3103 | MPa |
| Moment of Inertia, I | | 1671 | Inch ⁴ | 0.0006956 | M ⁴ |
| Stiffness, EI | | 7.52E+08 | LB-In ² | 2158 | KN-M ² |
| Specific Gravity | D6111-97 | 0.80-0.99 | g/cc | | |
| Compression Strength-Parallel | D6108-97 | 4000 | PSI | 27.5 | MPa |
| Compression Modulus-Parallel | D6108-97 | 200000 | PSI | 1378 | MPa |
| Compression Strength- Perpendicular | D6108-97 | 908 | PSI | 6.2 | MPa |
| Compression Modulus- Perpendicular | D6108-97 | 110000 | PSI | 758 | MPa |
| Flash Point | | 340 | Deg C | | |
| Moisture Absorption | | 0.06 | % by Weight | | |
| Average Screw Pull Out | D6117 | 646 | Lbs | 293 | Kg |
| Static Coefficient of Friction –Dry | D2394-83(99) | .53 | | | |
| Static Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Sliding Coefficient of Friction-Dry | D2394-83(99) | .23 | | | |
| Sliding Coefficient of Friction-Wet | D2394-83(99) | .51 | | | |
| Flame Spread | E84(03a) | 62 | | | |
| Flame Spread Classification | E84(03a) | 60 | | | |
| Smoke Developed | E84(03a) | 230 | | | |
| Smoke Developed Classification | E84(03a) | 250 | | | |
| Tensile Test (skin) | D638 | 3623 | PSI | 24.9 | MPa |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN | 15.1 | Kg-cm/cm |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample | | |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours | | |

Test date 02/17/11

Values are calculated from tests of other size bars.

This data represents average values NOT Minimums. Safety factors must be added in to the design. For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

13” ROUND WITH 6 - 1” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|------------------------------------|-----------|--------|-------------------------------------------|
| MOR | D6109-97 | 2700 | PSI |
| Flexural Modulus | D6109-97 | 350000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Compression Strength—Parallel | D6108-97 | 1963 | PSI |
| Compression Modulus– Parallel | D6108-97 | 186000 | PSI |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
| Tensile Test (skin) | D638 | 3623 | PSI |
| Notched impact resistance method A | D256 | 2.77 | Ft*LB/IN |
| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 03/06/09

Actual size of product is 12.8” diameter. Values are calculated from tests of other size bars. This data represents average values NOT Minimums. Safety factors must be added in to the design.

For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE® REBAR REINFORCED STRUCTURAL PLASTIC LUMBER

13” ROUND WITH 6 - 1 1/4” FIBERGLASS BARS

TEST METHODS

| TEST | ASTM TEST | VALUE | ENGLISH UNITS |
|------------------------------------|-----------|--------|-------------------------------------------|
| MOR | D6109-97 | 3500 | PSI |
| Flexural Modulus | D6109-97 | 460000 | PSI |
| Specific Gravity | D6111-97 | 0.99 | g/cc |
| Compression Strength—Parallel | D6108-97 | 1963 | PSI |
| Compression Modulus– Parallel | D6108-97 | 186000 | PSI |
| Flash Point | | 340 | Deg C |
| Moisture Absorption | | 0.06 | % by Weight |
| Average Screw Pull Out | D6117 | 646 | Lbs |
| Flame Spread | E84(03a) | 62 | |
| Flame Spread Classification | E84(03a) | 60 | |
| Smoke Developed | E84(03a) | 230 | |
| Smoke Developed Classification | E84(03a) | 250 | |
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| Abrasion resistance | D4060 | <0.02 | Oz-with 2.2lb sample |
| Ultraviolet (skin) | D4329 | <10 | % Change in Type D durometer at 500 hours |

Test date 03/06/09

Actual size of product is 12.8” diameter. Values are calculated from tests of other size bars. This data represents average values NOT Minimums. Safety factors must be added in to the design.

For information regarding Chemical Resistance & Ultraviolet Weathering please see BarForce® product overview on page 2.

BARFORCE®
120 DEGREE SPAN TABLES
JOIST MODE

| | | |
|------------|----------------------|------------------------------------------------------------------------------------------|
| MASTER DAT | 370000 24 0.05 | TEMPERATURE ADJUSTED MODULUS PSI INCH CENTER DISTANCE FOR JOIST DEFLECTION—IN./FT. |
|------------|----------------------|------------------------------------------------------------------------------------------|

| SIZE | REBAR | ACTUAL SIZE | | MAXIMUM SPAN | | LIVE LOAD LBS / SQ FOOT |
|--------|-----------|-------------|--------|--------------|------|-------------------------------|
| | QTY/ SIZE | WIDTH | HEIGHT | INCHES | FEET | |
| 3 X 12 | 2—3/4" | 2.4 | 11.3 | 141.5 | 11.8 | 60 |
| 3 X 12 | 2—3/4" | 2.4 | 11.3 | 122.2 | 10.2 | 100 |
| 3 X 12 | 2—3/4" | 2.4 | 11.3 | 108.1 | 9.0 | 150 |
| 3 X 12 | 2—3/4" | 2.4 | 11.3 | 98.8 | 8.2 | 200 |

Notes:

1. Designers are to understand table limitations and apply them appropriately.
2. Loads are assumed to be uniformly applied to a simple span condition.
3. Table includes the weight of the beam and 2 x FiberForce® decking in the allowable load values.
4. Table is based on adjusted modulus of elasticity for and temperature.
5. All designs should be reviewed by a professional engineer.
6. Tables are generated from uniform loaded beam formula $y=5WL^4/384EI$

Revised 7/19/07

RRT- 120 3 x 12

BARFORCE®
120 DEGREE SPAN TABLES
JOIST MODE

| | | |
|-------------|----------------------|------------------------------------------------------------------------------------------|
| MASTER DATA | 330000 24 0.05 | TEMPERATURE ADJUSTED MODULUS PSI INCH CENTER DISTANCE FOR JOIST DEFLECTION—IN./FT. |
|-------------|----------------------|------------------------------------------------------------------------------------------|

| SIZE | REBAR | ACTUAL SIZE | | MAXIMUM SPAN | | LIVE LOAD LBS / SQ FOOT |
|--------|-----------|-------------|--------|--------------|------|-------------------------------|
| | QTY/ SIZE | WIDTH | HEIGHT | INCHES | FEET | |
| 4 X 12 | 2—3/4" | 3.4 | 11.3 | 151.6 | 12.6 | 60 |
| 4 X 12 | 2—3/4" | 3.4 | 11.3 | 131.3 | 10.9 | 100 |
| 4 X 12 | 2—3/4" | 3.4 | 11.3 | 116.4 | 9.7 | 150 |
| 4 X 12 | 2—3/4" | 3.4 | 11.3 | 106.5 | 8.9 | 200 |

Notes:

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3. Table includes the weight of the beam and 2 x FiberForce® decking in the allowable load values.
4. Table is based on adjusted modulus of elasticity for and temperature.
5. All designs should be reviewed by a professional engineer.
6. Tables are generated from uniform loaded beam formula $y=5WL^4/384EI$

Revised 11/02/07

RRT- 120 4 x 12



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