

SECTION 32 31 25
WOOD COMPOSITE FENCES AND GATES

[Specifications below marked in yellow may be modified based on project parameters. Documents referred to below highlighted in green, may be excluded from specification.)

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Wood composite fences.
 2. [Wood composite gates.]
 3. Excavation for posts.
 4. Concrete post foundations.

1.2 REFERENCES

- A. ASTM International (ASTM):
1. C94 - Standard Specification for Ready-Mixed Concrete.
 2. C177-04 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
 3. D143-94(2000) - Standard Test Methods for Small Clear Specimens of Timber.
 4. D198-05 - Standard Test Methods of Static Tests of Lumber in Structural Sizes.
 5. D1037-06 - Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle
 6. Panel Materials.
 7. D1413-05 - Standard Test Method for Wood Preservatives by Laboratory Soil-Block Cultures.
 8. D1761-06 - Standard Test Methods for Mechanical Fasteners in Wood.
 9. D1929-96(2001) - Standard Test Method for Determining Ignition Temperature of Plastics.
 10. D2047-04 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring
 11. Surfaces as Measured by the James Machine.
 12. D2394-05 - Standard Methods for Simulated Service Testing of Wood and Wood-Base Finish
 13. Flooring.
 14. D2395-06 - Standard Test Methods for Specific Gravity of Wood and Wood-Based Materials.
 15. D4761-05 - Standard Test Methods for Mechanical Properties of Lumber and Wood-Base
 16. Structural Material.
 17. E84-07 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 18. F1679-04 Standard Test Method for Using a Variable Incidence Tribometer (VIT).
 - 19.
- B. American Wood Preservers Association (AWPA) E1-06 - Standard Method for Laboratory Evaluation to Determine Resistance to Subterranean Termites.

1.3 SYSTEM DESCRIPTION

- A. Design Requirements: Design fence system to withstand Miami/Dade County 110 MPH steady wind and 130 MPH gusting wind tests.

1.4 SUBMITTALS

- A. Submittals for Review:
1. Product Data: Indicate sizes, profiles, surface finishes, and performance characteristics.
 2. Samples: [12] [] inch long samples illustrating each size, profile, color, and surface finish.

B. Sustainable Design Submittals:

1. Recycled Content
2. Regional Materials

C. Closeout Submittals:

1. Maintenance Data: Manufacturer's instructions on care and cleaning of wood composite products.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle wood composite in accordance with manufacturer's instructions.
- B. Do not stack wood composite over 12 feet high.
- C. Cover wood composite with waterproof covering, vented to prevent moisture buildup.

1.6 WARRANTIES

- A. Furnish manufacturer's 25 year residential warranty / 10 year commercial warranty providing coverage against checking, splitting, splintering, rotting, structural damage from termites, and fungal decay of wood composite.

PART 2 - PRODUCTS

2.1 WARRANTIES

- A. Contract Documents are based on products by Trex Company, Inc.
- B. Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 MATERIALS

- A. Wood composite:
 1. Reclaimed wood and plastic with integral coloring; free from toxic chemicals and preservatives.
 2. Characteristics:
 - a. Abrasion resistance: 0.01 inch wear per 1000 revolutions, tested to ASTM D2394.
 - b. Hardness: 1124 pounds, tested to ASTM D143.
 - c. Self ignition temperature: 743 degrees F, tested to ASTM D1929.
 - d. Flash ignition temperature: 698 degrees F, tested to ASTM D1929.
 - e. Flame spread rating: 80, tested to ASTM E84.
 - f. Water absorption, 24 hour immersion, tested to ASTM D1037:
 - a) Sanded surface: 4.3 percent.
 - b) Unsanded surface: 1.7 percent.
 - g. Thermal expansion coefficient, 36 inch long samples:
 - a) Width: 35.2×10^{-6} to 42.7×10^{-6} .
 - b) Length: 16.1×10^{-6} to 19.2×10^{-6} .
 - h. Fastener withdrawal, tested to ASTM D1761:
 - a) Nail: 163 pounds per inch.
 - b) Screw: 558 pounds per inch.
 - i. Static coefficient of friction:
 - a) Dry: 0.53 to 0.55, tested to ASTM D2047.
 - b) Dry: 0.59 to 0.70, tested to ASTM F1679.
 - c) Wet: 0.70 to 0.75, tested to ASTM F1679.
 - j. Fungus resistance, white and brown rot: No decay, tested to ASTM D1413.
 - k. Termite resistance: 9.6 rating, tested to AWPA E-1.
 - l. Specific gravity: 0.91 to 0.95, tested to ASTM D2395.
 - m. Compression:
 - a. Parallel: 1806 PSI ultimate, 550 PSI design, tested to ASTM D198.
 - b. Perpendicular: 1944 PSI ultimate, 625 PSI design, tested to ASTM D143.
 - n. Tensile strength: 854 PSI ultimate, 250 PSI design, tested to ASTM D198.
 - o. Shear strength: 561 PSI ultimate, 200 PSI design, tested to ASTM D143.
 - p. Modulus of rupture: 1423 PSI ultimate, 250 PSI design, tested to ASTM D4761.
 - q. Modulus of elasticity: 175,000 PSI ultimate, 100,000 PSI design, tested to ASTM D4761.

- r. Thermal conductivity: 1.57 BTU per inch per hour per square foot at 85 degrees F, tested to ASTM C177.

2.3 COMPONENTS

- A. Fence System: Seclusions Privacy Fence System.
 - 1. Fence height: [4] [6] [8] [10] [12] feet.
 - 2. Components:
 - a. Fence posts.
 - b. Post caps: [pyramid] [flat].
 - c. Top rail
 - d. Aluminum bottom rail inserts.
 - e. Bottom rail covers/Pickets.
 - f. Fence brackets.
 - 3. Surface texture: Smooth.
 - 4. Color: [Saddle.] [Winchester Grey.] [Woodland Brown.]

2.4 ACCESSORIES

- A. Fasteners: 1 5/8" Galvanized or corrosion-resistant coated steel.
- B. Concrete: [ASTM C94;] [Specified in Section 03 3000;] minimum [2500] [] PSI compressive strength at 28 days, [3 to 5] [] to [] inch slump.
- C. Gate Hardware:
 - 1. Two Trex hinges per gate leaf, sized to gate weight and conditions.
 - 2. [Center gate stop and drop rod for double gates.]
 - 3. Latching mechanism [with padlock provisions].

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install fences in accordance with manufacturer's instructions.
- B. Cut and drill wood composite using carbide tipped blades.
- C. Space posts maximum 8 feet on center.
- D. Drill post holes into undisturbed or compacted soil; excavate deeper in soft or loose soils and for posts with heavy lateral loads.
- E. Drill posts to 12 inch diameter. Locate bottom of post [30 inches below grade.] [below frost line.]
- F. Place top of concrete [2 inches below] [flush with] [2 inches above] finished grade.
- G. Screw fence brackets to posts with four 1 5/8" inch long exterior screws.
- H. Cut top and bottom rails and aluminum bottom rails to required lengths.
- I. Slide bottom rail covers over aluminum bottom rail pieces.
- J. Position aluminum bottom rail on fence brackets.
- K. Insert pickets into bottom rail, interlocking adjacent pieces.
- L. Position top rail and screw attach to top brackets with 1 5/8" inch long exterior screws.
- M. Place post caps over post tops and secure with construction adhesive or four finish nails.

3.2 CLEANING

- A. Clean wood composite to remove stains:
 - 1. Mold, mildew, and berry and leaf stains: Clean surfaces with conventional deck wash containing detergent or sodium hypochlorite.
 - 2. Rust and ground-in dirt: Clean surfaces with cleaner containing oxalic or phosphoric acid.
 - 3. Oil and grease: Clean surfaces with detergent containing degreasing agent.

END OF SECTION