

SECTION 32 3125

COMPOSITE WOOD FENCES

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by one of the following methods:

Microsoft Word: From the pull-down menus select TOOLS, then OPTIONS. Under the tab labeled VIEW, select or deselect the HIDDEN TEXT option.

Corel WordPerfect: From the pull-down menus select VIEW, then select or deselect the HIDDEN TEXT option.

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Composite wood fences.
 - 2. [Composite wood gates.]
 - 3. Excavation for posts.
 - 4. Concrete post foundations.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section [03 3000 - Cast-In-Place Concrete:] [_____ - _____:] Concrete for 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 Panel Materials.
 - 6. D1413-05 - Standard Test Method for Wood Preservatives by Laboratory Soil-Block Cultures.
 - 7. D1761-06 - Standard Test Methods for Mechanical Fasteners in Wood.
 - 8. D1929-96(2001) - Standard Test Method for Determining Ignition Temperature of Plastics.
 - 9. D2047-04 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
 - 10. D2394-05 - Standard Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring.
 - 11. D2395-06 - Standard Test Methods for Specific Gravity of Wood and Wood-Based Materials.
 - 12. D4761-05 - Standard Test Methods for Mechanical Properties of Lumber and Wood-Base Structural Material.
 - 13. E84-07 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 14. F1679-04 Standard Test Method for Using a Variable Incidence Tribometer (VIT).
- 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 composite wood products.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle composite wood in accordance with manufacturer's instructions.
- B. Store composite wood level and flat, off ground or floor, with supports at each end and maximum 24 inches on center.
- C. Do not stack composite wood over 12 feet high.
- D. Cover composite wood with waterproof covering, vented to prevent moisture buildup.

1.6 WARRANTIES

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

2.2 MATERIALS

- A. Composite Wood:
 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:
 - 1) Sanded surface: 4.3 percent.
 - 2) Unsanded surface: 1.7 percent.
 - g. Thermal expansion coefficient, 36 inch long samples:
 - 1) Width: 35.2×10^{-6} to 42.7×10^{-6} .
 - 2) Length: 16.1×10^{-6} to 19.2×10^{-6} .
 - h. Fastener withdrawal, tested to ASTM D1761:
 - 1) Nail: 163 pounds per inch.
 - 2) Screw: 558 pounds per inch.
 - i. Static coefficient of friction:
 - 1) Dry: 0.53 to 0.55, tested to ASTM D2047.
 - 2) Dry: 0.59 to 0.70, tested to ASTM F1679.

- 3) 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:
 - 1) Parallel: 1806 PSI ultimate, 550 PSI design, tested to ASTM D198.
 - 2) 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] feet.
 - 2. Components:
 - a. Top and bottom rails.
 - b. Bottom rail inserts.
 - c. Fence posts.
 - d. Post caps.
 - e. Support brackets.
 - 3. Surface texture: Smooth.
 - 4. Color: [Saddle.] [Winchester Grey.] [Madeira.] [Woodland Brown.]

2.4 ACCESSORIES

- A. Fasteners: 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. Gravel: Crushed stone or river gravel.
- D. Gate Hardware:
 - 1. Two [self-closing] 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 composite wood 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.] Extend bottom of hole 6 inches deeper than bottom of post.
- F. Place 6 inches of gravel in bottom of hole; tamp to compact.

- G. Place concrete around posts in continuous pour, tamp and dome top away from post. Check for vertical and top alignment; brace posts until concrete has set.
- H. Place top of concrete [2 inches below] [flush with] [2 inches above] finished grade.
- I. Position support brackets using assembly tool. Screw to posts with four 2-1/2 inch long drive screws.
- J. Cut top and bottom rails and bottom rail inserts to required lengths. [At slope transitions, cut to match slope of fence.]
- K. Slide bottom rail insert over bottom rail pieces.
- L. Position bottom rail and screw attach to bottom brackets with 1-1/2 inch diameter self-tapping screws.
- M. Insert pickets into bottom rail, interlocking adjacent pieces.
- N. Position top rail and screw attach to top brackets with 1-1/2 inch diameter self-tapping screws.
- O. Place post caps over post tops and secure with four screws.

3.2 CLEANING

- A. Clean composite wood 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