



SECTION 13126 TIMBER DOMES

Western Wood Structures, Inc. (WWS), is uniquely qualified to offer VARAX timber dome design, engineering and construction. Utilizing curved glulam timbers and our patented steel hubs, a VARAX timber dome can accommodate any shape, from a pure spherical shape to an ellipsoidal, rectangular or a free-form shape. Using cost-effective techniques, including ground-level construction, the building process minimizes interior scaffolding, allowing other trades to work as the dome is being constructed. The result is a highly aesthetic dome structure of tremendous strength that spans from 80 feet up to 600 feet, and is suitable for all climates.



Top: Tacoma Dome interior, showing movable seating configured for an NBA game **Left:** 530 ft span Tacoma Dome; Tacoma Washington
Center: Belledune Coal Storage Dome; New Brunswick, Canada **Right:** Bijie Dome; Guiyang, China

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1.0 GENERAL REQUIREMENTS

1.1 Description: This section includes the design, fabrication, and supply of the pre-engineered VARAX Dome as shown and described on the contract drawings. The framing members are to be of glulam construction and the supplier shall furnish all materials, including connecting steel and hardware, and labor for a complete installation.

1.2 Design Criteria:

Dead Load: _____ psf Dome Diameter: _____ ft

Live Load: _____ psf Dome Rise: _____ ft

Snow Load: _____ psf

Suspended loads as required.

Wind and seismic loads per local building code.

1.3 Qualifications: The dome supplier must be a company specializing in the design, fabrication and installation of domes with a minimum of five (5) years documented experience.

Approved suppliers include:

Western Wood Structures, Inc.
PO Box 130 Tualatin,
Oregon 97062-0130
(800) 547-5411

1.4 Submittals:

1.4.1 Submit shop drawings and product data under the provisions of Section 01300. Shop drawings shall include: general framing plan, beam profiles, loads, and fabrication details for all wood members and steel assemblies. Also indicate dimensions, wood grades, drilled holes, fasteners and cambers.

1.4.2 Submit design calculations stamped by a registered engineer, licensed to practice in the state where the dome is being constructed.

1.4.3 Furnish an APA-EWS Certificate of Conformance stating that the glulams conform to the specifications.

1.4.4 Furnish Letter of Conformance stating sawn decking conforms to the specifications.

1.4.5 Furnish material certificates for all steel plate and shapes.

1.4.6 Furnish material certificates for all hardware.

1.4.7 Provide a written warranty against defects in material and workmanship for a period of five (5) years.

2.0 PRODUCTS

2.1 Materials:

2.1.1 Glulam shall be Douglas Fir. Stress grades shall be as required by the design. The appearance shall be Industrial S3S. Adhesive shall be 100% waterproof phenolic resin glue.

2.1.2 Decking shall be 2"x 8" Douglas Fir, #2/btr, S2S, KD, EVIS, Paper Wrap, WC-200.

2.1.3 Steel and Hardware. Steel to be ASTM A-36 and hardware to be ASTM A-307. Welding by certified welders per AWS specifications D1.1. All steel and hardware to be prime coated.

2.2 Fabrication:

2.2.1 The main structural beams are to be fabricated to the fullest extent possible in a plant with facilities for performing work specified. Factory drill all holes using steel as templates.

3.0 EXECUTION

3.1 Delivery, Storage and Handling:

3.1.1 The installer is responsible for the handling and protection of dome framing materials after arrival at destination. All beams shall be unloaded and handled with a forklift or crane using nylon slings.

3.1.2 If the materials are to be stored at the site, they must be placed on a level surface and stickered to prevent warpage and twisting.

3.1.3 Owner to build foundations to layout shown on drawings.

Field verification, location and layout of foundation to be performed by licensed land surveyor. Correct out of tolerance work prior to commencing dome erection.

3.1.4 Dome shall be erected in conformance to erection procedures noted on shop drawings.

4.0 FOUNDATIONS AND TENSION RING

4.1 Dome supplier shall provide live load and dead load reactions, buttress locations, and layout and anchor bolt locations. Owner is responsible for design of foundations and tension ring.

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