



STEEL SHELTER SPECIFICATIONS

Structure as furnished by:

Cedar Forest Products
P.O. Box 145, West Olive, MI 49460, USA
800.552.9495

DIVISION 107300

SPECIALTIES MANUFACTURERS OF PROTECTIVE COVERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. [Building type][size] with [secondary roof] over [primary roof].

BUILDING STRUCTURE AS FURNISHED BY CEDAR FOREST PRODUCTS COMPANY, P.O. BOX 145, WEST OLIVE, MICHIGAN, 49460, USA, 800-552-9495.

1.2 REFERENCES

- A. REFERENCE STANDARDS:
1. AISC - American Institute of Steel Construction Manual of Steel Construction.
 2. ASTM - American Society for Testing and Materials.
 3. AWS - American Welding Society.
 4. LEED - Leadership in Energy and Environmental Design.
 5. OSHA - Occupational Safety and Health Administration Steel Erection Standard 29 CFR 1926 Subpart R-Steel Erection.
 6. PCI - Powder Coating Institute.
 7. SSPC - Steel Structures Painting Council.

1.3 SUBMITTALS

- A. GENERAL SUBMITTAL:
Submit [] sets of submittal drawings and [] sets of calc books, both signed and sealed by a Professional Engineer licensed in the State of [].
- B. PRODUCT DESIGN LOADS:
The building shall be designed to meet the governing building code with the following design loads:
1. Building Code: []
 2. Ground Snow Load (Pg): [] pounds per square foot.
 3. Basic Wind Speed (V): [] miles per hour.
 4. Seismic Design: as required for site specific conditions.
- C. SUBMITTAL REQUIREMENTS:
Calculations and Submittal drawings shall include, at a minimum:
1. Calculations:
 - a. References to building codes and design manuals used for calculations.
 - b. Identification of lateral force resisting system.
 - c. Formulas used for determining snow, wind, and seismic loads to specific project location.
 - d. Three dimensional modeling input, model geometry, and analysis results.
 - e. Member design results and controlling load combinations.
 - f. Connection design for structural bolts, welds, plate thicknesses, and anchorage to the foundation.
 - g. Foundation designs must include the required combinations of gravity and lateral loads.

2. Submittal Drawings:
 - a. Anchor bolt layout.
 - b. Foundation design.
 - c. Three dimensional views of frame.
 - d. Member sizes and locations.
 - e. Structural connection details, including bolt sizes and plate thicknesses.
 - f. Roof trim and connection details.

D. FOUNDATION DESIGN:

1. The shelter shall be set on foundations designed by manufacturer.
2. Foundation materials shall be provided by contractor.
3. Owner shall provide manufacturer with complete information about the site including soil bearing capacity and lateral load capacity.
4. If soil data are not provided, foundations will be designed to the minimum values identified in the governing building code.

E. ANCHOR BOLTS:

Anchor bolts shall be provided by manufacturer.

1.4 QUALITY ASSURANCE

A. FABRICATOR QUALIFICATIONS:

1. Minimum of 10 years in the shelter construction industry.
2. Full time on-staff Quality Assurance Manager.
3. All welders AWS Certified.
4. Annual audit of Quality System by Third Party Agency.
5. Annual audit of powder coat finish system by Third Party Agency (PCI).

B. FABRICATOR CERTIFICATIONS:

1. City of Houston, TX Approved Steel Fabricator.
2. San Bernardino County, CA Approved Steel Fabricator.
3. Clark County, NV Approved Steel Fabricator.

1.5 STORAGE AND HANDLING

A. STORAGE AND HANDLING REQUIREMENTS:

1. Installer shall store product in a dry place or covered if out in the weather and keep product out of direct sun.
2. Installer shall store product elevated from soils to allow air circulation and to not introduce mold, fungi decay or insects to the product.
3. Product must be handled with protective straps or padded forks if lifting with mechanical equipment. Use of chain or cable to lift product into place will not be accepted.

1.6 FIELD OR SITE CONDITIONS

- A. Foundations shall be at the same elevation unless specifically noted otherwise on the drawings.

1.7 MANUFACTURER WARRANTY

- A. Shelter must have a 10-year limited warranty on steel frame members
- B. Shelter must have a 10-year limited warranty on paint system.
- C. Pass through warranty of metal roof manufacturer to be provided upon request.

PART 2 - PRODUCTS

2.1 SHELTER SYSTEM AND MATERIALS

A. MANUFACTURERS:

1. Acceptable Manufacturer: Cedar Forest Products, P.O. Box 145., West Olive, MI 49460; 800-552-9495; E-mail: info@cedarforestproducts.com; www.cedarforestproducts.com. Receive pricing from [First Name] [Last Name] at [Phone].
- B. SUBSTITUTION LIMITATIONS:
1. Substitutions must be approved a minimum of ten (10) days before bid. All approved manufacturers shall be notified in writing before the bid date and shall not be allowed to bid without written notification.
 2. Alternate suppliers must meet the qualifications and provide proof of certifications listed under section 1.4 QUALITY ASSURANCE.
 3. Alternate suppliers must provide an equivalent paint system to Cedar Forest Products listed under Section 2.1 D. 8. FINISHES.
- C. DESCRIPTION OF PRODUCT:
1. MODEL NUMBER: [MODEL ID].
 2. DESCRIPTION AND SIZE: [Shelter Name] [Shelter Size].
 3. ROOF SLOPE: [Roof Slope].
 4. EAVE HEIGHT: [in feet] Clearance height from finish grade to the underside of the perimeter beam.
 5. ADDITIONAL OPTIONS: (If any, describe what has been added beyond standard).
- D. PRODUCT REQUIREMENTS AND MATERIALS:
1. GENERAL: The pre-engineered package shall be pre-cut unless otherwise noted and pre-fabricated which will include all parts necessary to field construct the shelter. The shelter shall be shipped knocked to minimize shipping expenses. Field labor will be kept to a minimum by pre-manufactured parts. Onsite welding is not necessary.
 2. REINFORCED CONCRETE:
 - a. Concrete shall have minimum 28-day compressive strength of 3,000 psi and slump of 4" (+/- 1"), unless otherwise noted on the drawings.
 - b. Reinforcing shall be ASTM A615, grade 60.
 3. STEEL COLUMNS:
 - a. Hollow structural steel tube minimum ASTM A500 grade B with a minimum wall thickness of 1/8".
 - b. Unless columns are direct buried columns shall be anchored directly to concrete foundation with a minimum of four anchor rods to meet OSHA requirement 1926.755(a)(1).
 4. STRUCTURAL FRAMING:

Hollow Structural Steel tube minimum ASTM500 grade B. "I" beams, tapered columns, or open channels shall not be accepted for primary beams.
 5. COMPRESSION MEMBERS:

Compression rings of welded plate minimum ASTM A36 or compression tubes or structural steel tube minimum ASTM A500 grade B shall only be used.
 6. CONNECTIONS:

Connection Requirements:

 - a. Anchor bolts shall be ASTM F1554 (Grade 36) unless otherwise noted.
 - b. Structural fasteners shall be zinc plated ASTM A325 high strength bolts and high strength nuts.
 - c. All structural fasteners shall be hidden within framing members.
 - d. No field welding shall be required to construct the shelter.
 - e. All welds shall be free of burrs and inconsistencies.
 - f. All exposed fasteners shall be painted by manufacturer prior to shipment to match frame or roof colors as applicable.
 - g. Manufacturer shall provide extra structural and roofing fasteners.
 7. ROOFING MATERIALS:

*****OPTIONAL ROOF DECK UNDERLAYMENT***** (Delete if not applicable)

 - a. ROOF DECK UNDERLAYMENT OF TONGUE AND GROOVE (T&G):
 - 1) T&G shall be of 2x6 tongue and groove, southern yellow pine, kiln dried #1 grade or better, edge V'd bottom side.
 - 2) Manufacturer shall supply 30 pound felt and drip edge if both primary and secondary roofs are being supplied by the manufacturer.

- 3) Contractor shall cut T&G down to required lengths and shall seal underside of boards per architect's or owner's recommendations using coating supplier's instructions.

*****OR*****

a. ROOF DECK UNDERLAYMENT BY OTHERS

*****CHOOSE A PRIMARY ROOF*****

b. ROOF SYSTEM OF ASPHALT SHINGLES:

- 1) Asphalt shingles shall be ASTM D3018 Type 1 and ASTM D3462 with a 25-year limited warranty.
- 2) Color chosen from manufacturer's standard color chart: **[ColorName]**.

A roof deck underlayment is required for this option. (*****Note to specifier, always delete*****

*****OR*****

b. ROOF SYSTEM OF "Multi-Rib" PANEL METAL ROOFING:

- 1) Roofing shall be 24 gauge ribbed galvalume steel sheets, with ribs 1 3/16" high and 12" on center.
- 2) Roof surface shall be painted with Kynar 500 to the manufacturer's standard color: **[ColorName]**. Ceiling surface shall be a "wash coat" primer.
- 3) Roof panels shall be factory pre-cut to size and angled to provide ease of one-step installation.
- 4) Metal roofing trim shall match the color of the roof and shall be factory made of 24 gauge Kynar 500 painted steel.
- 5) Trim shall include panel ridge caps, hip caps, eave trim, rake trim, roof peak cap, and corner trim as applicable for model selected. Trim may need to be cut to length and notched. Reference drawings for additional information.
- 6) Ridge, hip, and valley caps shall be pre-formed with a single central bend to match the roof pitch and shall be hemmed on the sides.
- 7) Roof peak cap shall be pre-manufactured.
- 8) Manufacturer must supply painted screws with metal and neoprene washers.

*****OR*****

b. ROOF SYSTEM OF STANDING SEAM METAL ROOFING:

- 1) Standing seam metal roofing to be 24-gauge galvalume 16" wide with ribs 1-3/4" high.
- 2) Roof surface shall be painted with Kynar 500 to the manufacturer's standard color: **[ColorName]**. Ceiling surface shall be a "wash coat" primer.
- 3) Roof panels shall be factory pre-cut to size and angled to provide ease of one-step installation.
- 4) Metal roofing trim shall match the color of the roof and shall be factory made of 24 gauge Kynar 500 painted steel.
- 5) Trim shall include panel ridge caps, hip caps, eave trim, rake trim, roof peak cap, and corner trim as applicable for model selected. Trim may need to be cut to length and notched. Reference drawings for additional information.
- 6) Ridge, hip, and valley caps shall be pre-formed with a single central bend to match the roof pitch and shall be hemmed on the sides.
- 7) Roof peak cap shall be pre-manufactured.
- 8) Manufacturer must supply painted screws with metal and neoprene washers.

*****OR*****

b. SECONDARY ROOF SYSTEM BY OTHERS

8. FINISHES:

***** CHOOSE ALL THE FINISHES BEING USED WITH THE SHELTER*****

a. STANDARD POWDER COAT FINISH:

- 1) Steel shall be cleaned, pretreated, and finished at a facility directly supervised by the manufacturer.
- 2) Steel shall be shot blasted to SSPC-SP10 near-white blast cleaning. SSPC-SP2 hand tool cleaning will not be an acceptable alternative.
- 3) Parts shall be pretreated in a 3 stage iron phosphate or equal washer.
- 4) Epoxy primer powder coat to be applied to parts for superior corrosion protection.
- 5) Top coat of Super Durable TGIC powder coat shall be applied over the epoxy primer.
- 6) Finish shall not have any VOC emissions.
- 7) Sample production parts shall have been tested and meet the following criteria:

- a) Salt spray resistance per ASTM B 117/ ASTM D 1654 to 5,000 hours with no creep from scribe line and rating of 10.
- b) Humidity resistance per ASTM D2247-02 to 3,000 hours with no loss of adhesion or blistering.
- c) Color/UV resistance per ASTM G154-04 to 2,000 hours exposure, alternate cycles with results of no chalking, 75% color retention, color variation maximum 3.0 E variation CIE formula (before and after 2,000 hours exposure).
- 8) The manufacturer shall be PCI 4000 S Certified

*****AND / OR*****

- a. PRIME COAT FINISH:
 - 1) Steel shall be cleaned, pre-treated, and finished at a facility directly supervised by the manufacturer.
 - 2) Steel shall be shot blasted to SSPC- SP10 near-white blasting. SSPC-SP2 hand tool cleaning will not be an acceptable alternative.
 - 3) Frame shall be prime coated with an off gray Super Durable TGIC powder coat.
 - 4) Primer shall not have any VOC emissions.
 - 5) Red oxide primer will not be an acceptable alternative.

*****AND / OR*****

- a. HOT DIP GALVANIZED FINISH:
 - 1) Steel members, fabrications and assemblies shall be galvanized after by the hot dip process in accordance with ASTM A123. The composition of metal in the galvanizing bath shall be no less than 98% zinc.
 - 2) The galvanized coating shall be continuous, adherent, free from any detrimental defect.

*****AND / OR*****

- a. E-COAT BASE COAT FINISH:
 - 1) Entire building under Super Durable Polyester TGIC powder coat shall have an E-Coat Base Coat.
 - 2) Steel shall be shot blasted to SSPC-SP10 near-white blast cleaning prior to adding E-Coat. SSPC-SP2 hand tool cleaning will not be an acceptable alternative.
 - 3) Top powder coat of Super Durable TGIC powder coat shall be applied.

PART 3 - EXECUTION

3.1 INSTALLERS

- A. Protect building products after arrival at destination from weather, sunlight, and damage.
- B. Building products shall be placed on blocks well off the ground and separated with wood strips so that air can circulate around each member.
- C. Cover top and bottom with moisture-resistant paper.
- D. Non-marring slings and/or padded forks shall be used when handling.
- E. Installers are to use proper building practices recognized by OSHA and to have minimum 5 years experience in installing shelters of similar construction. These trades include but are not limited to: masonry work, steel construction, sheet metal work, carpentry, electrical and paint finishing.
- F. Examination of final work is done by verifying that the erection of the structure was done in conformance to the installation instructions provided by Cedar Forest Products and local building codes.

3.2 ERECTION

- A. FOUNDATIONS:

The shelter shall be placed on Cedar Forest Products designed foundations with materials by others. Design approved by the Engineer of Record identified in Section 1.3 D. FOUNDATION DESIGN.

- B. **INSTALLATION:**
Install all components according to manufacturer's installation instructions and these specifications.
- C. **GENERAL CONTRACTOR:**
Interface with other work is to be coordinated by the customer or the customer's agent. Certain designs have electrical or other plumbing requirements that are not supplied by Cedar Forest Products.
- D. **TOLERANCES:**
Tolerances on steel structural members are set according to AISC construction practices, abided in the factory, and cannot be increased. No field slotting or opening of holes will be allowed. It is therefore essential that contractors conform to the tolerances specified on the installation drawings for anchor bolt or column layout details.
- E. **OSHA COMPLIANCE:**
OSHA Compliance to Steel Erection Standard 29CFR 1926 Subpart R-Steel Erection.

3.3 REPAIR

- A. Do not attempt any field repairs without first contacting Cedar Forest Products.

3.4 FIELD OR SITE QUALITY CONTROL

- A. Field or Site Tests and Inspections are not required by Cedar Forest Products but may be required by the customer or by the local building inspector.

END OF SECTION