

## TECHNICAL SPECIFICATIONS

### GABLE STYLE 2" - 3" - 4" ULTRA-LITE BUILDINGS

#### 1. GENERAL

- 1.1 The building shall be a standard manufactured panelized type as manufactured by Elite Buildings, Van Alstyne, TX.
- 1.2 The building shall be supplied complete with all necessary component parts and accessories to form a complete building system that will minimize field erection. All parts shall be new and free from all defects and imperfections.
- 1.3 The building width and length shall be measured from the inside surface of the wall panels (I.D. dimensions). The nominal building sidewall height shall be the distance measured from the bottom surface of the base angle to the interior juncture of the roof and sidewall panels, or as specifically noted otherwise on the drawings.
- 1.4 A complete set of building erection drawings showing a construction sequence for the erection of the building shall be prepared specifically for the building covered by the following specifications showing all roof and wall components and anchor bolt locations required.

#### 2. DESIGN

- 2.1 The building shall be designed in accordance with the latest edition of the following standards:
  - A. American Institute of Steel Construction (AISC) *Specification for Structural Steel Buildings*
  - B. American Iron and Steel Institute (AISI) *North American Specification for the Design of Cold-Formed Steel Structural Members*
- 2.2 The building shall be designed to withstand the following minimum loading conditions:
  - A. The vertical Live Load of the building shall not be less than twenty pounds per square foot (20 psf or \_\_\_\_ ) applied on the horizontal projection of the roof.

- B. The Ground Snow Load of the building shall not be less than twenty pounds per square foot (20 psf or \_\_\_\_ ) applied on the horizontal projection of the roof.
- C. The horizontal Wind Load of the building shall not be less than Ninety miles per hour (90 MPH or \_\_\_\_ ) and shall be distributed and applied in accordance with the applicable sections of the latest edition of the *International Building Code* published by the International Code Council.
- D. The building shall meet or exceed seismic criteria as specified in the applicable sections of the latest edition of the American Society of Civil Engineers (ASCE) *Standard 7-05*.

### 3. STRUCTURE

- 3.1 The building shall have a gable style roof consisting of separate structural insulated panels. The roof panels shall be continuous in length from ridge to eave with no splices or joints.
  - A. For buildings with a roof slope of 1/2:12, the panel roof system shall span the entire width of the building while at the same time forming a horizontal flat interior ceiling.
  - B. For buildings with a roof slope of 2:12 or greater, the panel roof system shall require a ridge cap assembly centered at the building peak, running the full length of the building.
  - C. The panel roof system shall be designed to utilize the building sidewall panels as its primary structural support.
  - D. The exterior siding of the roof shall extend a minimum of four inches (4") over the sidewall panels of the building.
  - E. The roof panels shall be furnished complete with exterior trim, accessory trim, and TEK screws for the attachment of the trim.
- 3.2 The building shall be fabricated using wall and roof panels that have been factory pre-assembled. The structural roof and wall panels are formed into a complete unit by chemically bonding sixteen gauge (16 ga.) "U-shaped" cold-formed channels, an interior and exterior metal siding, and polyurethane foam insulation together.
- 3.3 The building wall and roof panels shall be interlocked together by overlapping the exterior and interior metal sidings. The exterior lap will be fastened together the entire length of the panel with 1/4" x 3/4" Lap TEK

screws with a neoprene washer. The interior lap will be fastened together the entire length of the panel with galvanized #10 x 3/4" Self Driller TEK screws with a neoprene washer.

A. The building wall and roof panels shall form a tight metal-to-metal seal with the adjoining panels. Each panel joint shall be sealed with a good quality silicone sealant prior to installation.

3.4 Wall panels shall be fastened at the interior base perimeter of the building with galvanized #14 x 3/4" Self Driller TEK screws with a neoprene washer.

3.5 The wall panels shall be furnished complete with base interior trim, accessory trim, and TEK screws for fastening.

3.6 Weather sealing shall be provided to prevent leaks in and around the entire edge of the roof and wall panels.

A. High quality silicone caulk shall be applied to all panel frame work prior to installation.

3.7 For buildings erected on concrete, Hilti HVA Adhesive anchors or equivalent shall be used for fastening wall panels to the concrete foundation. This will allow the foundation to be poured prior to delivery of the building without the need for preset anchor bolts.

#### 4. PANEL DESIGN

4.1 Structural panels shall be thirty-six inches (36") or forty eight (48") wide unless otherwise required to meet building dimension criteria.

A. Each wall panel frame work shall consist of a two inch (2") or three inch (3") or four inch (4") deep "U-shaped" cold-formed channel made from 16 gauge (16 ga.) G90 A527 galvanized material. The channel will be used to create a lock-forming frame around the perimeter of each panel.

B. Each roof panel frame work shall consist of a two inch (2") or three inch (3") or four inch (4") deep "U-shaped" cold-formed channel made from 16 gauge (16 ga.) G90 A527 galvanized material. The channel will be used to create a lock-forming frame around the perimeter of each panel.

4.2 Panels shall have interior and exterior sidings of a minimum of 29 (26, 24 or 22) gauge steel conforming with ASTM A-653 specifications with a galvanized coating conforming to G90 (1.25 oz. commercial) standards.

(Interior Options: Plywood and/or FRP as well as custom paneling)

A. The interior and exterior metal sidings shall have a four coat metal protection consisting of 1) Hot Dip Galvanizing, 2) Zinc Phosphate Coating, 3) Primer Paint, and 4) Silicified Polyester Paint.

a. Panels shall meet the following performance standards after 10 years of continuous exposure in normal atmospheric conditions not containing corrosive fumes such as chemical fumes or salt spray:

Exterior color coatings shall show no evidence of blistering, peeling, or chipping; Panels shall not show surface chalking in excess of the No. 8 rating D659 as established by the American Society of Testing Materials (ASTM); After cleaning, panels shall not show color change in excess of five (5) NBS units when measured in accordance with the ASTM D-2244 standard.

The above performance standards shall not apply where panels have been damaged by fire, radiation or other physical damage.

4.3 The entire core of the panels shall have poured in place polyurethane foam yielding an insulation of R-7 per inch of panel thickness.

A. The polyurethane foam shall be comprised of 50% type "A" (isocyanate) and 50% type "B" (polyol) chemicals forming a rigid closed cell structured matrix with two pounds per cubic foot (2 pcf) uniform density.

B. The total insulating value of each two inch (2") thick wall panel shall be a minimum R-12 and the total insulating value of each two inch (2") thick roof panel shall be a minimum R-14.

C. The total insulating value of each three inch (3") thick wall panel shall be a minimum R-21 and the total insulating value of each three inch (3") thick roof panel shall be a minimum R-24.

D. The total insulating value of each four inch (4") thick panel shall be a minimum R-28 and the total insulating value of each four inch (4") thick roof panel shall be a minimum R-30

## 5. TRIM AND ACCESSORIES

5.1 The following trim and accessory items shall be furnished as part of the building:

A. Ridge cap trim

B. Gable end trim (End caps if required)

C. Corner trim

D. Eave trim (End caps if required)

E. Single and/or double leaf doors with associated accessories and trim.