

Each building shall be supplied complete with all necessary components to form a complete building system, and all parts shall be new and free from all defects or imperfections.

The building width ____ and length ____ shall be measured from the outside of the building wall panels, and the height of the building shall be the distance measured from the bottom surface of the base channel to the exterior juncture of the roof and side wall panels.

Design Criteria

All buildings shall be designed in accordance with the applicable sections of the latest edition of the AISC "Specifications for Structural Steel Buildings" and the AISI "Specification for the Design of Cold-Formed Steel Structural Members".

Each building shall be designed for the following loads.

1. The vertical Live Load of the building shall not be less than 40 pounds per square foot applied on the horizontal projection of the roof.
2. The Ground Snow Load of the building shall not less than pounds per square foot applied on the Horizontal projection of the roof.
3. The horizontal Wind Load of the building shall not be less than 150 MPH and shall be distributed and applied in accordance with the applicable edition of the International Building Code" published by the International Code Council.
4. The building and portion there of shall be designed to resist the effects of seismic ground motions that might be expected in seismic zones.

All combining and distributing of auxiliary equipment loads imposed on the building system shall be done in accordance with the applicable section of the 2000 edition of the "International Building Code" published by the International Code Council

Upon request, the selected building manufacturer shall provide the building purchaser with complete design certification signed and sealed by a registered professional engineer.

Roof Panel Design

Roof panels shall be supplied in a single continuous length from eave line to ridgeline and shall be designed to tightly interlock, so that no fasteners are required at intermediate points along the panel side laps.

Roof panels shall be 16" or 12" wide with a smooth surface between the interlocking side ribs. The interlocking ribs shall be a minimum 3" high and shall be turned upward. All roof panels shall be factory punched for connection at the eave line of the building.

There shall be no fastener penetrations through the roof covering, except at eave lines, ridgelines, and roof accessory openings such as skylights and ventilators.

Roof panels shall be minimum of 20 gauge galvanized steel conforming to ASTM A-653 specifications with the galvanized coating conforming to G90 (1.25 oz. Commercial) standards. Minimum yield strength of the panel material shall be 50,000 PSI.

Roof panels shall receive a roller-applied paint coating having an exterior coating thickness of 0.8 to 1.2 mils of dry film thickness.

The roof panel color coating shall carry a low fire hazard rating equal to a Class 1 material as defined by Factory Mutual. The panel coating shall have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E-84 test procedures.

The finish coat shall be a white siliconized polyester formulation that shall meet the following performance standards after 10 years continuous exposure to "normal" atmospheric conditions not containing corrosive fumes such as chemicals or salt spray.

1. Panels shall show no evidence of blistering, peeling, or chipping.
2. Panels shall not show surface chalking in excess of the No. 4 rating D659 as established by the American Society of Testing Materials (ASTM).
3. Panels, after cleaning, shall not show color change in excess of 7 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.

Wall Panel Design

Exterior wall panels of the building shall be a single continuous length from the base channel to the roofline of the building, except where interrupted by wall openings.

Wall panels shall be 16" wide with a 3" deep inward turned interlocking side rib. Wall panels shall contain two 3/4" deep by 3-1/8" wide fluted recesses, each starting 2-7/16" from the panel edge.

Wall panels shall be fastened internally to the base channel and eave cap of the building with 3/8" diameter electro-galvanized machine bolts placed within the panel interlock. The fastening system shall be designed so that no wall fasteners are exposed on the exterior surface of the walls.

Wall panels shall be nominal 24 gauge galvanized steel conforming to ASTM A-653 specifications with the galvanized coating conforming to G90 (1.25 oz. commercial) standards.

Minimum yield strength of panel material shall be 40,000 PSI. Panel material shall be embossed with a random pattern pebble emboss of approximately .007 - .008 depth.

All exterior surfaces of the galvanized steel wall covering and exterior trim shall receive a roller applied paint coating having an exterior coating thickness of 0.8 to 1.2 mils of dry film thickness. The finish coat for wall panels shall be a siliconized polyester formulation of one of the following Parkline colors: Twilight Blue, Desert Tan, Laurel Green, Arctic White, Shell Gray, or Roman Bronze.

The wall panel color coating shall carry a low fire hazard rating equal to a Class I material as defined by Factory Mutual. The panel coating shall have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E-84 test procedures.

Exterior color coatings shall meet the following performance standards after 10 years continuous exposure in normal atmospheric conditions not containing corrosive fumes such as chemical fumes or salt spray.

1. Panels shall show no evidence of blistering, peeling, or chipping.
2. Panels shall not show surface chalking in excess of the No. 8 rating D659 as established by the American Society of Testing Materials (ASTM).
3. Panels, after cleaning, 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.

Wall Insulation

The cavity of the exterior wall panels shall be insulated with 16" wide, 3 1/2" thick, R 13, un-faced fiberglass insulation with a continuous interior layer of 1 1/2" thick (R 9.8) polyisocyanurate foam board insulation.

The thickness of the insulated wall (without interior liner) is 4.75"

The system shall have a "U" value of 0.069 (R 14.5) when calculated in accordance with the ASHRAE zone method.

Interior Wall Liner Formed Wall Liner

The interior of the building shall be lined with 32" wide, nominal 26 gauge galvanized steel panels, pre-painted Arctic White with 1/4" high by 1" wide flutes on 8" centers. The liner system shall be designed so that damaged panels may be removed and replaced without removing the adjacent panels. The liner system shall be furnished complete with White trim at accessories and ceiling.

Building Type

Each building shall have an interlocking panel roof system with a 1/4" in 12" slope. Roof panels shall be attached to the wall cap through factory punched holes, with #14 corrosion resistant fasteners.

The roof system shall include a gutter and downspout system at the low sidewall, eave trim at the high sidewall, and matching rake trim at the building end walls. All gutters and trim shall be galvanized steel prepainted Arctic White or Roman Bronze.

Transmission of horizontal wind loads across the building shall be made through the panel roof system and no separate roof or wall diagonal bracing shall be required.

Where required for proper transmission of lateral wind loads, structural frame wind bents shall be installed. Wind bents shall consist of a prime painted column and rafter bolted assembly of steel conforming to ASTM A-36 specifications.

Ceiling

The metal ceiling system shall consist of 3" deep 16" wide interlocking panels of nominal 24 gauge embossed galvanized steel, factory painted Arctic White. The ceiling system shall be supported at its perimeter by concealed angles or channels. The ceiling system shall be furnished complete with all necessary connectors and fasteners.

The ceiling shall be insulated with a 1/4" layer of continuous, reflective, polyethylene insulation laid on top of the ceiling panel ribs and three layers of 16" wide by 3-1/2" thick, R-13, un-faced fiberglass insulation.

One layer of fiberglass shall be installed in the ceiling panel void and the other layers will be placed on top of the polyethylene, turning each layer 90 degrees to the layer below.

The system shall have a "U" value of 0.038 (R 26.5) when calculated in accordance with the ASHRAE zone method. (Uses 8 inches of available clear height.)

Hollow Metal Doors

All doors shall be 1-3/4" thick flush type. Door panels shall be nominal 18 gauge galvanized steel reinforced by laminating to a honeycomb core enclosed with 16 gauge end channel. The hinge reinforcements shall be nominal 7 gauge and the lock reinforcements shall be nominal 16 gauge. Doorframes shall be 3" deep double rabbeted type of nominal 16 gauge galvanized steel.

Doors and frames shall be painted with one coat of baked on primer. All doors shall be pre-assembled in their frames and hardware installed and tested. Field installation of single leaf door units shall not require any frame assembly, or door hanging.

Door Hardware

Door hardware shall consist of:

3 - 4-1/2" x 4-1/2" standard weight, plain bearing hinges per ANSI A5133 630 Satin Stainless Finish with non-rising pins.

3-5/16" wide x 7/8" high extruded aluminum threshold. (Out Swing)

Polyprene/aluminum rigid rubber weather-stripping.

Mortise lockset per ANSI A156.13, Series 1000, Grade 1, Function F13, 626 Satin Chrome Finish (Levers both sides.)

Exhaust Fan

Exhaust Fan shall consist of shutter, fan assembly, wall sleeve, and rear guard. Fan shall have a 115-volt, 1/6 HP direct totally enclosed motor for continuous duty with thermal overload protection built in. Rear guard shall conform to OSHA specifications.

A/C Motor Operator Louver (Temperature Activated)

Louvers shall be O flanged self -framing design. The louver frame shall be of nominal 14 gauge formed aluminum, and the louver blades shall be nominal 12 gauge extruded aluminum. Finish shall be natural mill finish and shall not require field painting.

Blades shall be pivoted on 1/2" diameter aluminum pivot pins through nylon flanged bearings and operated by means of a pull bar-operating handle connected to solenoid. All louvers shall be complete with an 18 - 14 aluminum mesh insect screen.

The motor activator provides true spring return operation for reliable fail-safe application and positive close off on dampers. The actuator provides 95 degrees of rotation and is provided with a graduated position indicator showing 0 to 90 degrees. The activator may be installed anywhere in its normal rotation without the need of mechanical end switches.

Heater

Heater has an advanced pull-through airflow design that draws air across the heating element during operation. The unit heater is equipped with a built-in thermostat capable of maintaining a minimum inside temperature of 40 deg. F Heater wattage varies from 3KW to 15KW depending mainly on the building size, ambient outside temperature & desired temperature in the building.

Mini Power Zone

This is a general purpose 460 volts to 230/120 volts transformer for supplying power via double pole/single pole circuit breakers to electrical components in the building rated at different voltages. The transformer & the circuit breakers are housed in a rugged NEMA 3R enclosure.

Wireway with Distribution Block

The distribution block is housed in a NEMA 3R rated enclosure. The distribution block splits the customer supplied single source power (typically 3 phase 460 volts) to supply the electric controllers (same voltage rating as the customer supply) & feeds the Mini Power zone for supplying to equipment rated at different voltages.

Other Electrical Components in Building

4' interior fluorescent ceiling lights (operates on single-phase 120 volts)

LED exterior lights above the door (operates on single phase 120 volts)

Wall mounted GFCI receptacles (operates on single-phase 120 volts)

LED Emergency lights, for A/C power failure; inside building (operates on 12V batteries)

Sprinkler System (when required)

Building to have its own sprinkler system designed & installed per NFPA 13. Sprinkler heads to be rated for 155 degrees F & would have a minimum sprinkling capacity of 0.20 gpm/sq. feet.