

Definition

Weather tight enclosures, walk-in or non walk-in, are pre-fabricated modular units designed to contain NEMA 1 style electrical distribution equipment. The enclosure provides resistance to rain, sleet, snow, & other related weather conditions. Standard design provides resistance to 100 MPH wind loading & 30 lbs/sq. ft. snow loading. All units are water & weather tight & corrosion resistant as defined by National Electrical Manufacturers Association (NEMA). Special enclosures can be designed to meet seismic Zone 4 requirements, 150 MPH wind resistance, corrosive environment conditions, & higher snow loading requirements.

Integration

Each enclosure is custom designed & integrated to be a completely assembled unit ready for installation. All electrical distribution equipment is factory installed, electrically connected & tested. The entire unit is UL classified as a complete assembly. End use or load connections can be made from the underside, side, or top of the enclosure. All connection provisions are inherent in the specific design. Enclosures can be provided with several other features such as interior & exterior lighting, heating & ventilation, & duplex receptacles. Enclosures can also be provided with air conditioning, humidity control, & pressurization/purge systems.



Advantages

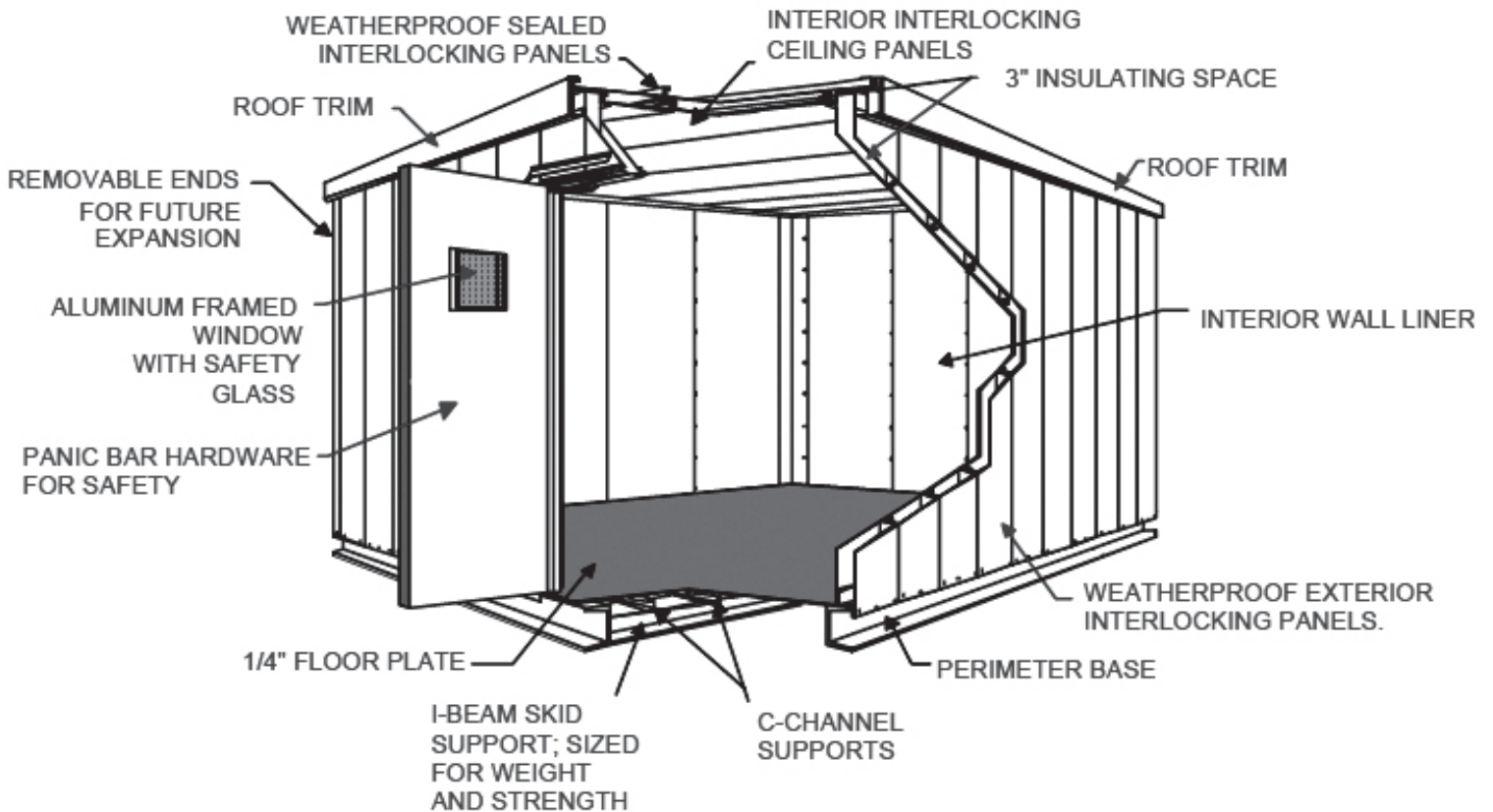
- **Equipment Installation**
All electrical distribution & control equipment is installed in the enclosure, connected/wired & tested.
- **Sourcing**
Each unit is manufactured as a complete unit ready for installation.
- **Design & Engineering**
Each unit is completely designed & engineered per specific customer specifications.
- **Construction**
The enclosure can be manufactured from a variety of different materials to suit site-specific conditions.
- **Foundation**
Since the entire enclosure is self-supporting & integrated as one unit, job site foundation requirements are minimized.
- **Enclosure Base**
Since the enclosure is a self-supporting structure, all equipment is factory level & fastened to the base.
- **Internal Wiring**
All equipment & other enclosure peripherals are pre-wired complete & provided with schematic diagrams.
- **Equipment Connections**
All internal equipment connections are preformed & tested as part of the turn-key solution.
- **External Connections**
Each Unit can be configured to accommodate a variety of incoming & load connections per specific job site requirements.
- **Receiving, Handling & Storage**
The enclosure arrives as one single unit & typically can be unloaded in 1 hour & stored outside.
- **Installation**
The installation of the enclosure involves a minimum number of crafts as a result of complete factory integration & design.

Construction

All enclosures are designed & manufactured using the interlocking wall panel concept. The interlocking panel design inherently provides a barrier against water entering the enclosure by providing two 90° bends at the seams between the exterior & interior of the enclosure. After assembly of the wall system, all seams are sealed with industrial grade silicone sealant. Roof sealing putty is used at all wall to roof joints & at joints on peaked roof enclosures. All roof panels are also individually sealed with silicone sealant. All panels are fabricated from ASTM A-527 galvanized sheet steel, & are either powder coated or painted with epoxy paint to provide superior resistance to chemicals, moisture, & abrasion. The coating is also resistant to the deteriorating effects of many acids, alkalis, solvents, greases, oils & other active chemicals. The perimeter frame is fabricated from ASTM A-36 structural steel & welded per AWS D1.1.

After the fabrication the base frame is sandblasted, primed, & painted using epoxy paint, & undercoated with mastic. Alternate structural construction can be provided by means of fabricated sheet metal frame members, which in turn can provide an overall lighter & more economical structure.

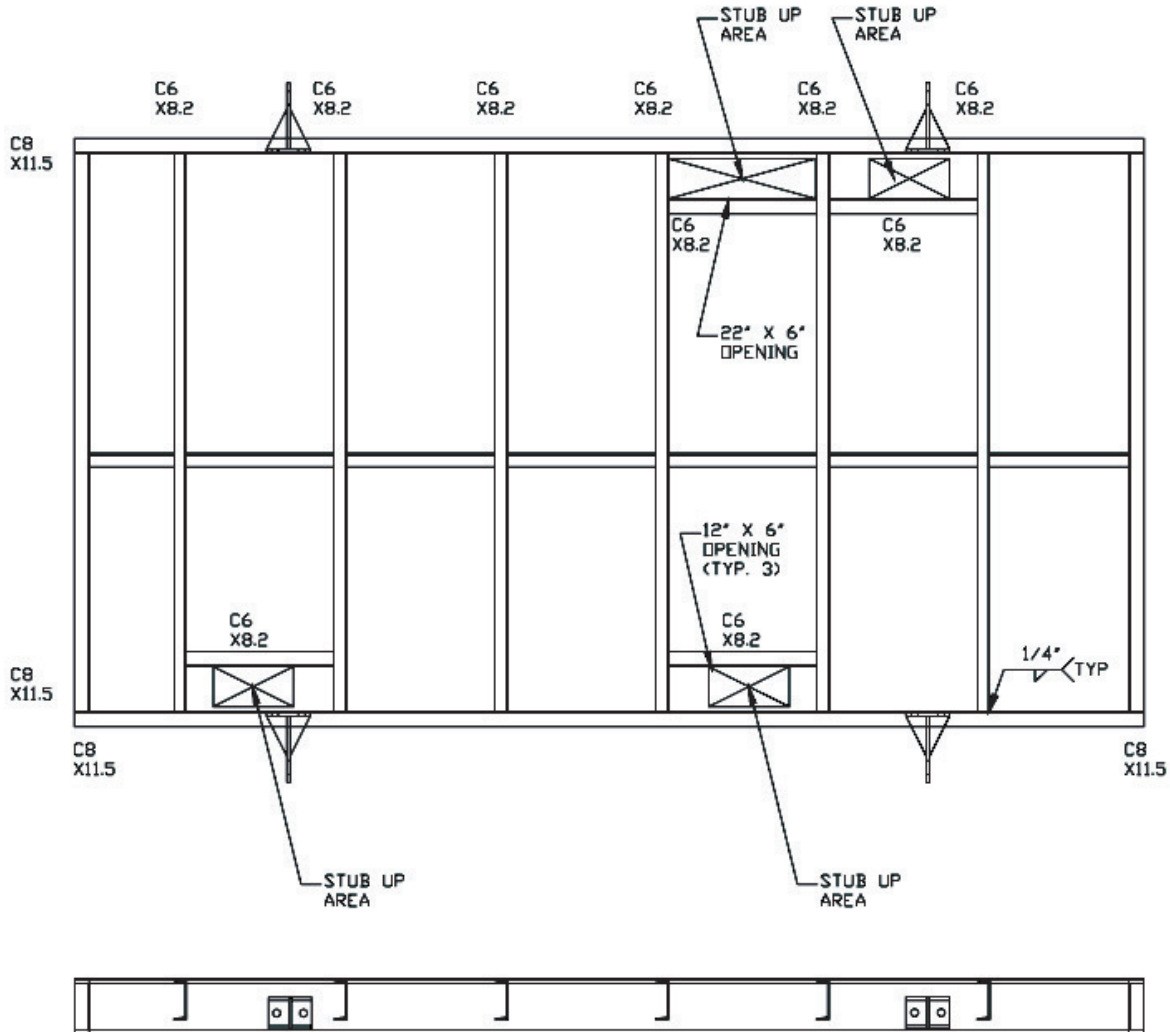
The resulting enclosure can be designed for extreme ambient temperature & humidity environments, ranging from -40° C to +50° C while allowing the use of lower cost indoor types of electrical distribution equipment. Enclosures are typically insulated to a minimum of R-11 & can be provided with HVAC/pressurization systems. For special environments the enclosure can be fabricated from aluminum or stainless steel.



SECTION VIEW: INTEGRATED POWER CENTER

Base Structure

The steel supporting skid is fabricated from standard AISC shapes using ASTM A-36 steel. Provisions are made for lifting the building for shipping & erection. The floor plate is ASTM A-36 material or fire retardant plywood. All structural framing members are cleaned by sandblasting & then painted with protective coating. The base of the building is typically structural steel members rigidly braced with structural steel cross-members for a variety of placement applications.

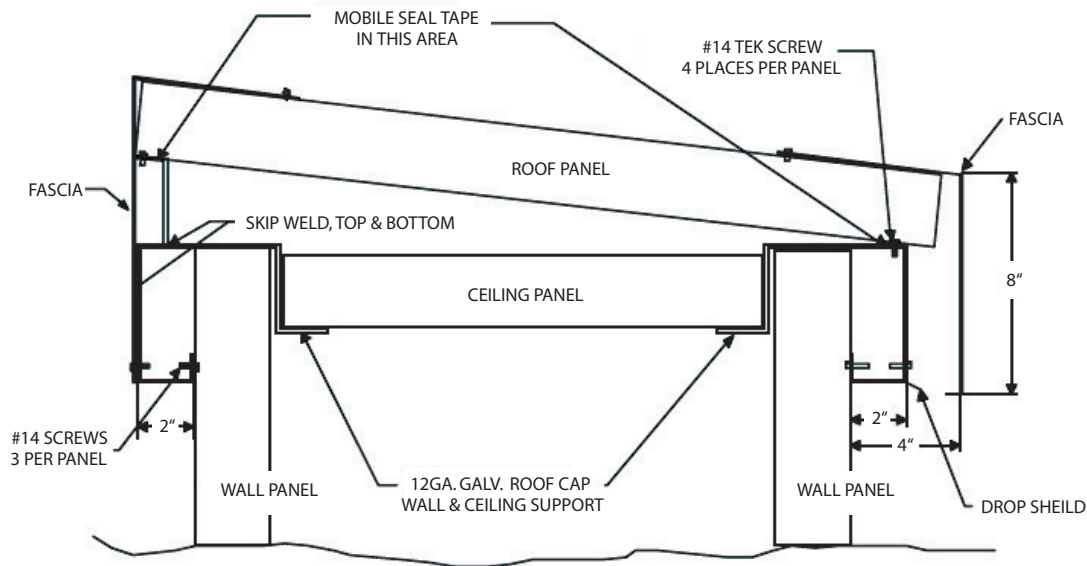


SECTION OF BASE STRUCTURE

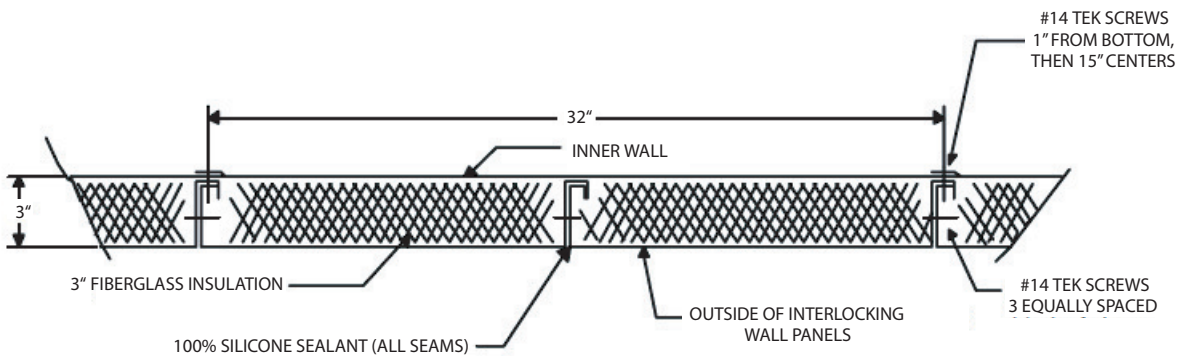
Roof & Wall Systems

Roof panels are typically 18 gauge painted galvanized steel (G90) which are formed to provide an interlocking system. Roof panels are supplied in a single continuous length from eaves lines to ridge line & typically designed for 30 lbs. per sq. ft. loading. Some areas will require a higher loading due to snow loads. Roof structures can also be designed for roof mounted HVAC Units, entrance bushings, & overhead bus supports.

Wall panels are typically 18 gauge painted galvanized steel which are formed to provide an interlocking system. Interlocking 3" exterior wall panels are typically on 16" centers and provide 100MPH allowable wind loading. Higher wind load ratings are provided as well. Interior wall liners & insulation can also be provided.



PLAN VIEW OF BASE STRUCTURE



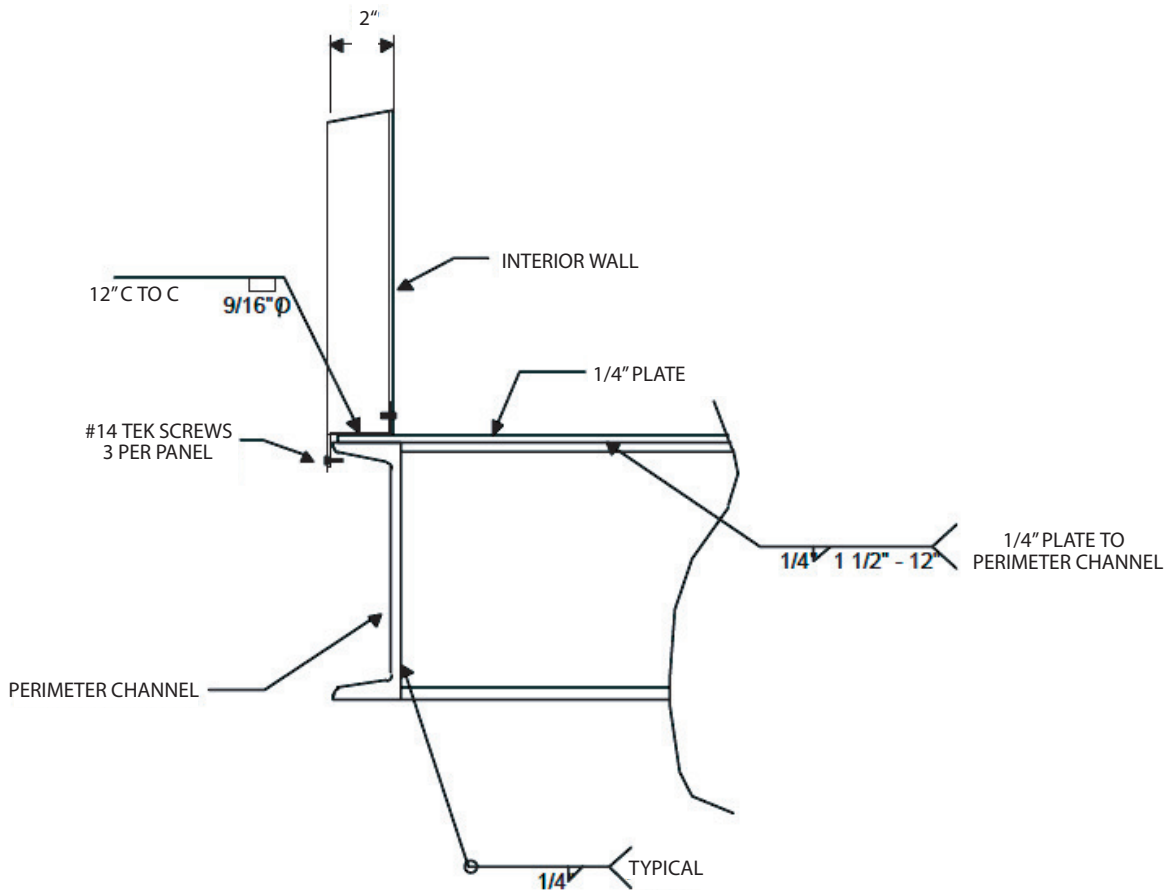
EDGE VIEW OF BASE STRUCTURE

Resistance to Environments

The interlocking panel design inherently provides a barrier against water entering the enclosure by providing two 90° bends at seams between the exterior & interior of the enclosure. Additional weather-proofing is also provided to ensure enclosure integrity. After assembly of the wall system, all seams are sealed with industrial grade silicone sealant. Roof sealing putty is used at all wall-to-roof joints & at joints on peaked-roof enclosures. All roof panels are also individually sealed with silicone sealant.

The paint system consists of surface preparation, primer, underside coatings, finish paint, & sealant. The finish coat is typically epoxy-based, to provide outstanding resistance to chemicals, moisture, & abrasion. The flexible coating is highly resistant to the deteriorating effects of many acids, alkalis, solvents, greases, oils, & other active chemicals.

The resulting enclosure can be designed for extreme ambient temperature & humid environments, ranging from -40° C to +50° C.



TYPICAL WALL-FLOOR CONNECTION

Manufacturing Capabilities

The PCX facility is a 80,000 sq. ft. manufacturing facility located approximately 15 miles southeast of Raleigh, NC. Manufacturing & engineering capabilities include the following:

- Integrated welding shop
- Manual liquid paint system.
- Integrated sheet metal shop.
- Eight assembly lines (electrical integration & building fabrication).
- UL 508A Industrial Controls
- UL 891 Integrated Switchboards
- Poses UL classified on prefabricated electrical distribution centers (UL classified on entire assembly).
- Multiplatform 3D design

The PCX philosophy is not building a product, it is engineering, integrating, & manufacturing solutions. All aspects of a project such as design, procurement of materials, customer coordination, manufacturing & testing are performed in house. This allows PCX to supply the customer with what they want & deliver when they want it.

Listings & Standards

UL-MH26057	Indoor EDCs
UL-MH25303	Outdoor EDCs
UL/cUL-E219142	Industrial Control Panels
ETL-522923	Indoor/Outdoor EDCs
CSA-LR107464-1	Indoor/Outdoor EDCs
ASCE 7-88	Minimum design loads for structures (ANSI A58.1)
NEC	National Electric Code
AWS D1.1	American Welding Society: Structural welding code
AISC	Manual of Steel Construction: Allowable stress design
IBC	Uniform Building Code

