

20 Ft Wide Enclosure Assembly Guide



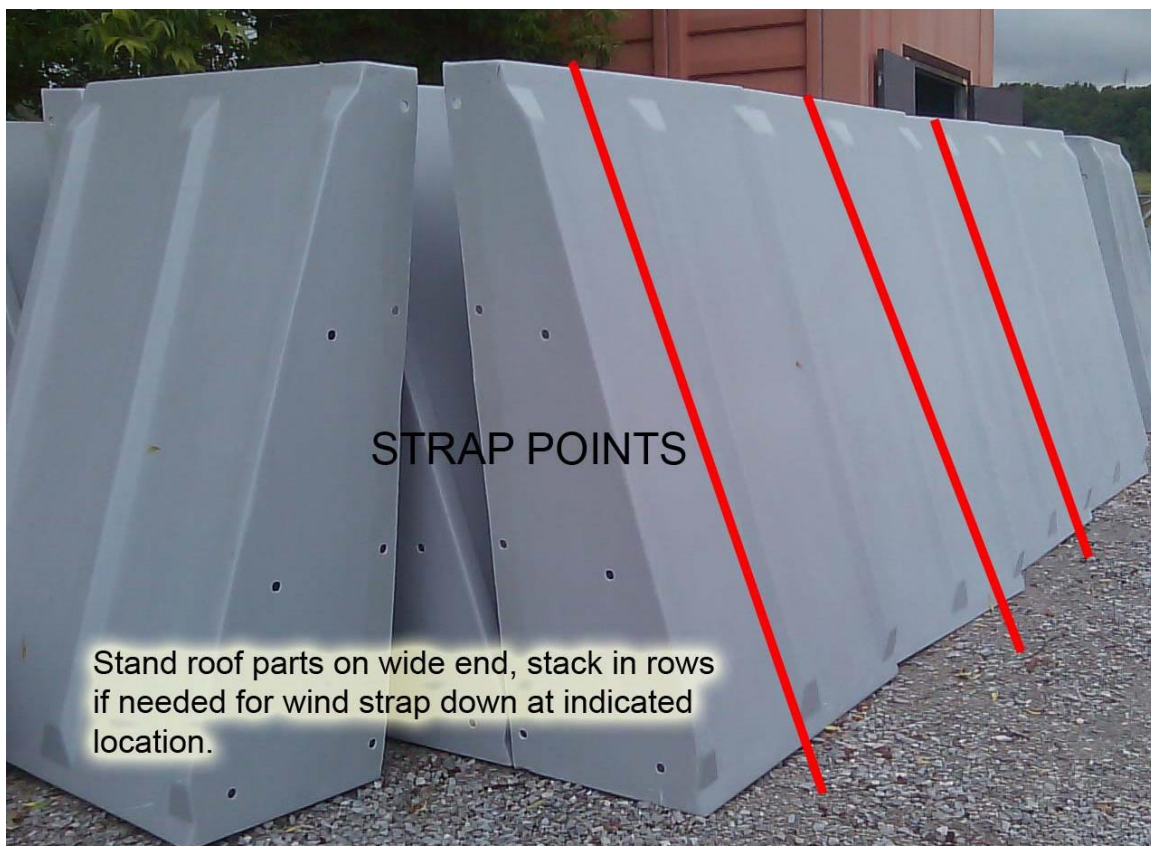
EntraBOX

Secure Modular Buildings

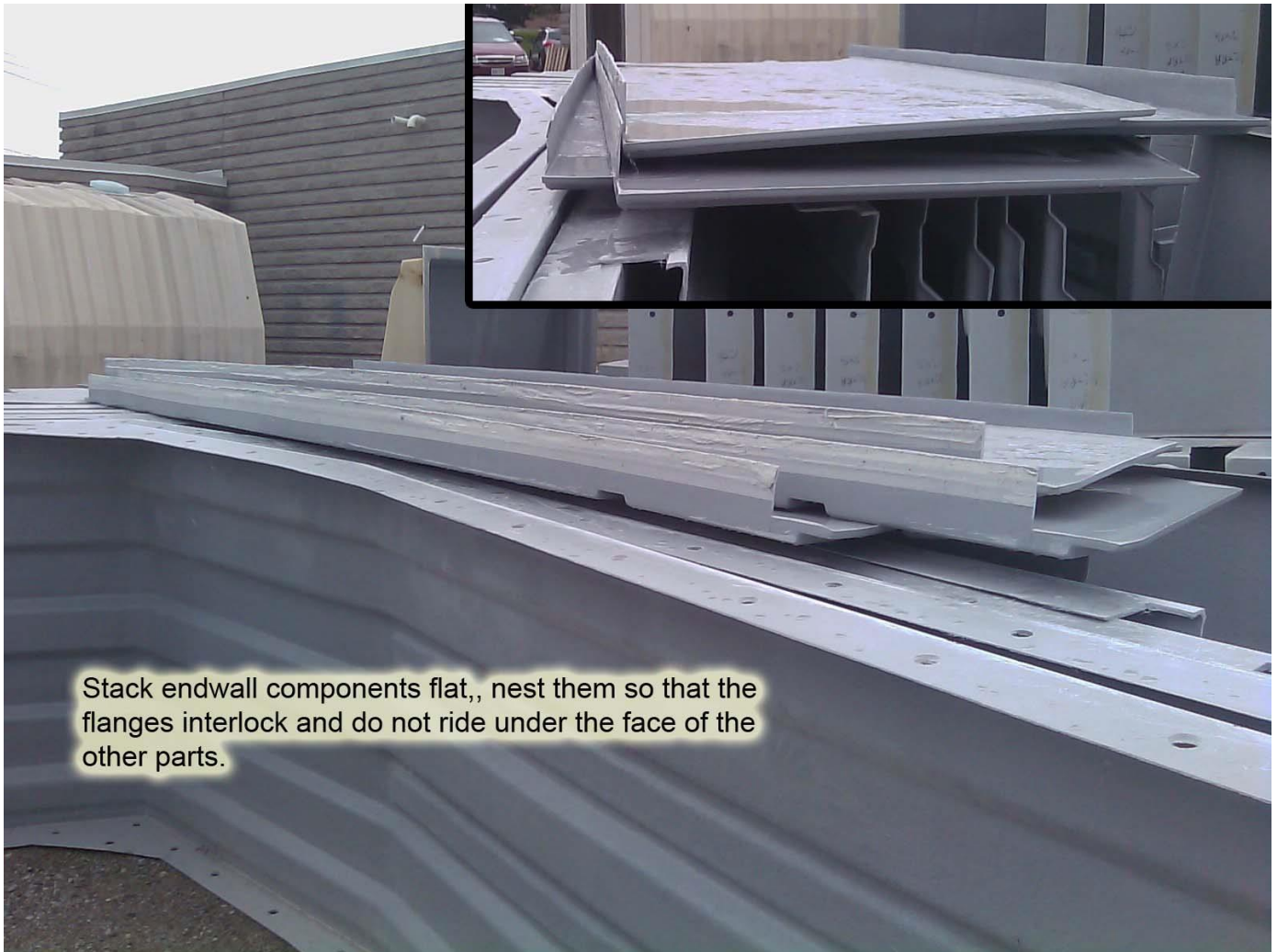
Handling and Storage



Handling and Storage:



Handling and Storage:



Be sure to read this manual before you begin assembly. Feel free to contact TURNSTILES.us if you wish to arrange a conference call with an assembly consultant.

Parts List: Size 20' wide



Side wall



Roof Panels



End panel set



Expander panel



Gable



Complete end wall

Tools List:

- 1x extension cord(may require more based on distance to power supply)
- 2x variable speed 3/8" drills (one cordless is a good option)
- 1x 1/2" drill bit with 3/8" shank
- 3x 5/16" drill bits for steel (not speed bore wood bits)
- 1x adapter for drill to accept sockets or electric impact gun
- 3x 3/4" deep socket
- 2x 7/16" deep socket
- 3x 1/2" deep socket
- 1x large 825 mil caulking gun
- 1x regular 300 mil caulking gun
- 2x 7' step ladders (taller ladders required for buildings over 9' high)
- 1x tape measure
- 1x 48" level (larger buildings may require a transit level)
- 3x 36" pry bars
- 6x large vise grip "C" clamps
- 1x double high set of scaffold
- 2x dead blow hammer
- 1x extendable fork lift
- 2x 20' x 3" slings
- 1x 4' sling with hook

To Speed Things Up:

- 1 electric man lift in place of scaffolding
- 1 electric or pneumatic impact wrench for tightening hardware
- 1 cordless drills for drilling small holes and installing smaller hardware

General Man Power Requirements:

On buildings 8'-10' wide, a minimum of 2 people would be required.

On buildings 12'-14' wide, a minimum of 3 people would be required.

On buildings 16' to 20' wide and buildings taller than 9' high, a minimum of 4 people would be required.

New hardware list page:



Use for bolting **end panel** internal flanges together. 1/4-20 x 1" hex cap bolt and 1/4-20 serrated flange nut.



Use for bolting **side wall panel** internal flanges together. 1/2-13x2" hex cap bolt, 1/2" ID x 2" OD washer(2) and 1/2-13 hex nut.



Use for bolting **end panels to side walls**. 1/4-20 x 1-1/2" carriage bolt and 1/4-20 serrated flange nut.



Use for bolting **side walls to fiberglass angle**. 1/4-20 x 2-1/2" carriage bolt, 5/16" ID x 1-1/2" OD washer and 1/4-20 serrated flange nut.

Maintenance:

EntraBOX fiberglass modular structures are VIRTUALLY MAINTENANCE FREE! However VIRTUALLY does not equal COMPLETELY.

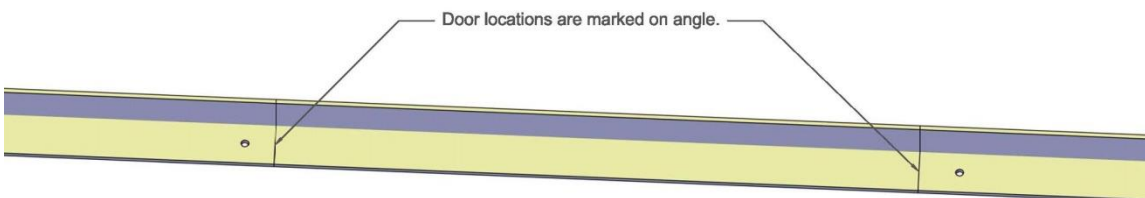
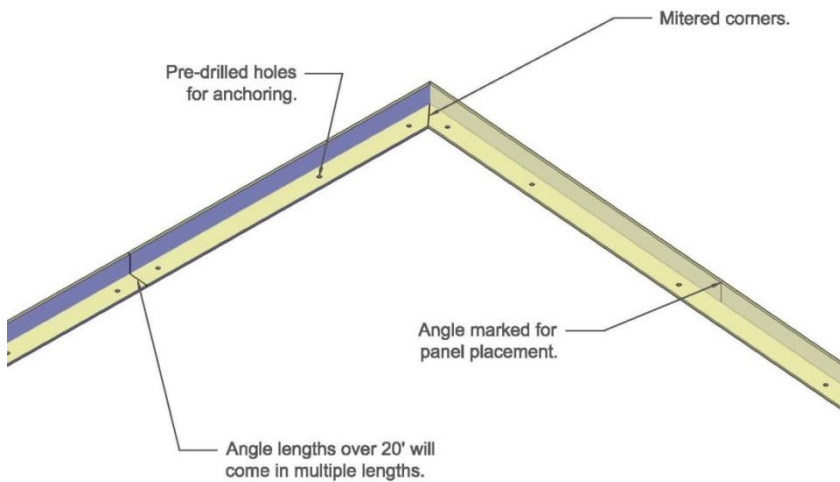
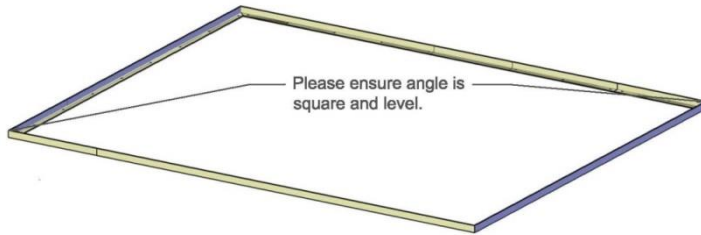
To ensure that the fiberglass modular structure lasts its lifetime follow these few steps:

Step 1: In case of heavy snow load or large amount of snow followed by a quick freeze, removing excess snow from the fiberglass building is recommended. The building is engineered to meet snow loads of 100 lbs per square foot. That's a great deal of snow, however there are times in areas of northern US and Canada where snow falls will exceed the 100 lbs per square foot and it is important to take the time to prevent excess snow build-up.

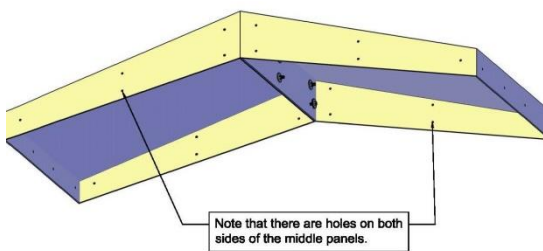
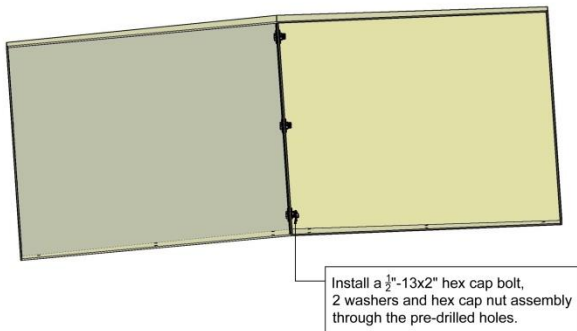
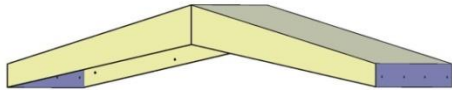
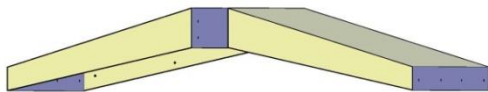
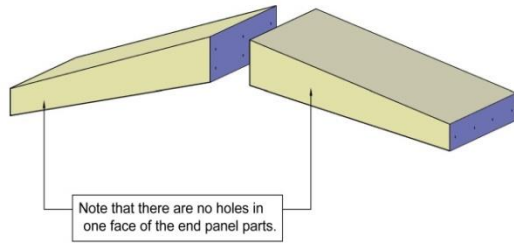
Step 2: If damage to the building occurs that reveals a crack, dent or buckle of any of the panels, it is important to repair the panel. Cracks and dents in the fiberglass can affect the overall integrity of the building making it less able to withstand the wind and snow loads it was engineered for. Repairs are inexpensive and easy to do, for more information or to purchase a repair kit, contact us.

Step 3: Door maintenance, please refer to the DBCI roll-up door guide for ongoing maintenance of the roll-up door.

Fiberglass angle base:



Panel Assembly: Roof Sections:



Assembling Roof Sections:

The first step is to locate the 4'x 6' roof panels. Locate the end panels first. There will be four panels in total. Two left panels and 2 right panels. The ends are unique in the fact that there are no bolt holes drilled on one face of the parts.

Group the panels into pairs. The end section will consist of a left and right panel. Align these so that the faces with no holes are on the same side when fastening.

Clamp the two parts together. **MAKE SURE THE OUTSIDE SURFACE OF THE PARTS IS FLUSH.**

Install a $\frac{1}{2}$ "-13x2" hex cap bolt, washers and nut assembly through the 6 pre-drilled holes of the flange.

All roof sections will be assembled in this manner.

IMPORTANT: MAKE SURE ALL SECTIONS ARE FLUSH AND SECURE.

See page 12 for more details.

Panel Assembly: Roof Sections:



Assembling Roof Sections:

Step 1:

Line up 2 roof sections. BE SURE TO HAVE THE DRILLED HOLES OF THE ROOF SECTION FACING DOWN. There will be no holes in the side facing up.

Step 2:

Clamp the roof section together. KEEP THE OUTSIDE SURFACE FLUSH.

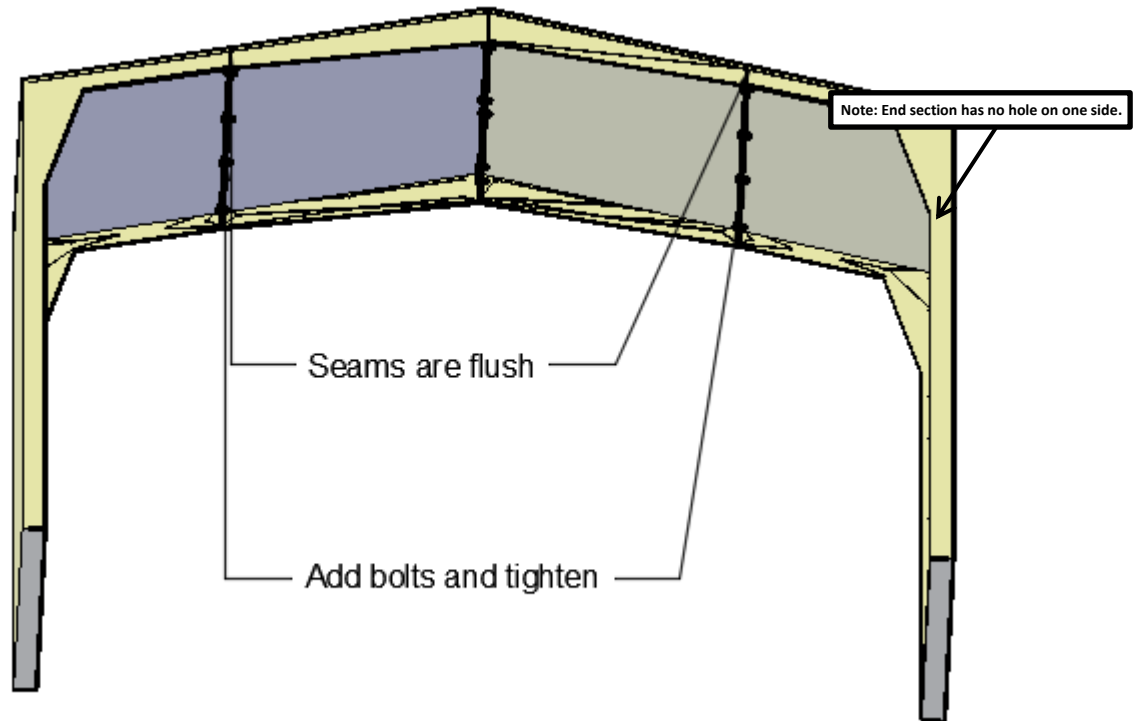
Step 3:

Use a dead-blow hammer to square up the panels, making sure that the panels are flush.

Panel Assembly: First Section: End Section:

Start with the end section. This will be the section with no holes on the one side.

Line up the roof and side wall panels. Remember to keep everything flush.



Once the side panel is lined up with the roof panel, clamp it into place and install a ½" - 13x2" hex cap bolt assembly through each of the pre-drilled holes between the two parts.

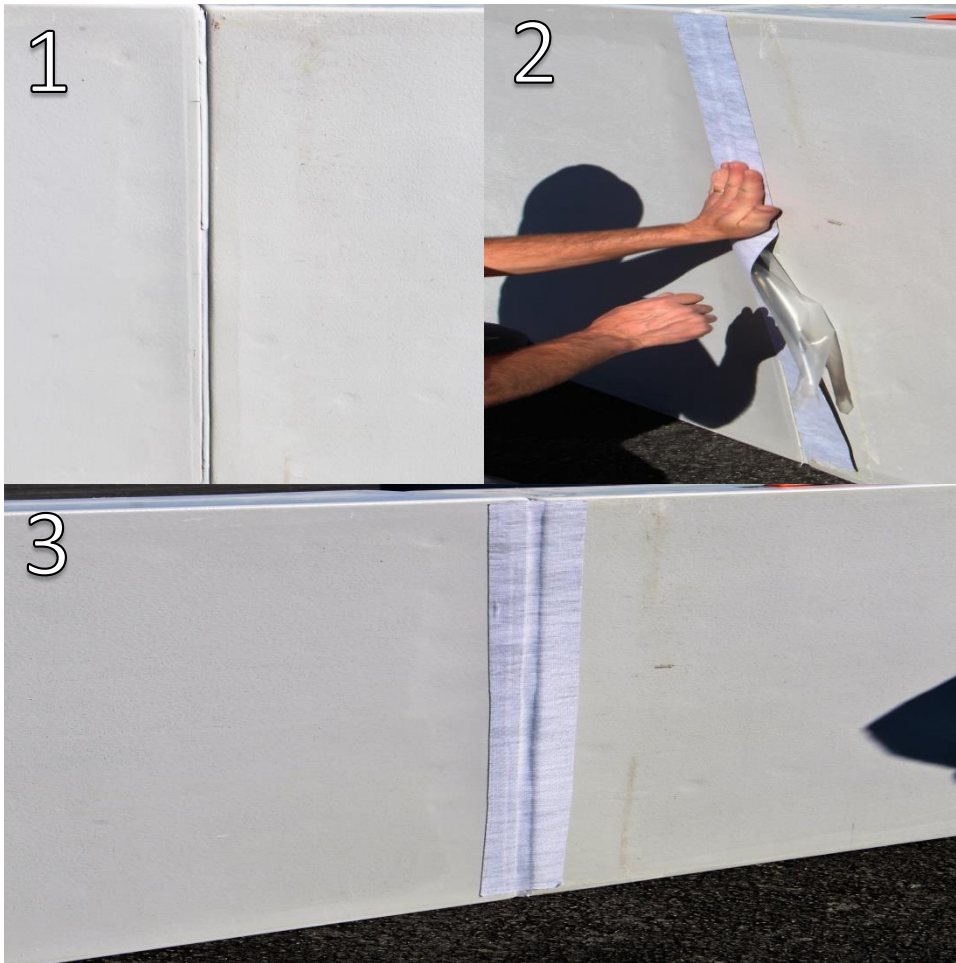
Repeat this process for the side wall on the opposite side of the building.

See page 14 for more detail.

Panel Assembly: First Section:End Section:



Panel Assembly: First Section:End Section:



Caulking and Taping:

Once the roof and side panels are fastened together, do the following:

1. Caulk the joints where the panels meet.
2. Tape the joints where the panels meet.
3. Leave approximately a 1" untapped area on both ends of the panels.

NOTE: DO NOT tape completely to the top and bottom.

Predrill holes:



The measurement points are 4" from the end, 16" from this point, 16" from point and 4" from the end.

Next step:

Drill the holes for the fastening that will be used for attaching the side panels to the angle base.

Installing Safety Hooks:

Safety hooks are installed approximately every 3rd section. Review your drawings to assure they are installed at the proper locations.



Installing Safety Hooks:

Line up and clamp the safety hook roof sections together.

Drill a 5/16" hole through the safety hook and one roof panel. Use a carriage bolt to secure safety hook while securing the roof sections together.

The 1" hole on the safety hook should line up with the pre-drilled hole in the roof flange.

Panel Assembly: First Section:End Section:

Preparing for lifting:



Prepare for Lifting:

Once the side panels and roof panels are fastened together.

Attach a 2"x 4" wood spreader bar that is $\frac{1}{2}$ " longer than the width of the building. Example. a 20' wide building, the spreader bar should be 20'0-1/2". It should be attached so that it is flush with the outside of the side panels. This assures that the section will be stable and wider than the base. This allows for ease of placing the section onto the base.



Panel Assembly: First Section: End Section:



Lifting with Forklift:

When lifting the section with an extendable fork lift, you must position the slings on your panels in the right position.

It is very important that the right length of sling is used and the right attachment cable is used.

Required: 2x 20' x 3" slings
1x 4' sling with hook

The positioning of the slings is very important so as not to damage any of the components.

Panel Assembly: First Section: End Section:



Setting the Sections on the base:

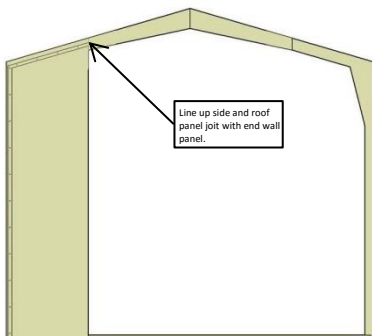
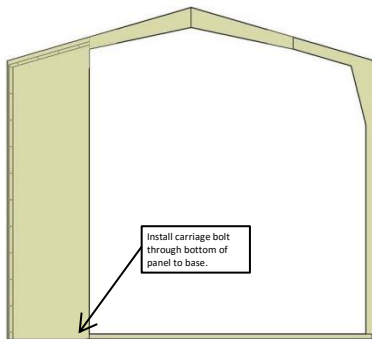
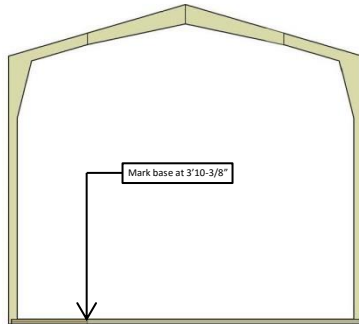
When sitting the first section on the base, it is crucial that the **flange sits on the line that is marked on the base**. Note: Every sections flange must sit on the line or the buildings final section will not fit on the base.

Once the flange is sitting on the mark, then drill a hole through the predrilled hole on the side panel and through the fiberglass angle then bolt in place. Undo the 2" x 4" spreader to fasten the other side panel to the base.

NOTE: Hardware used is the ¼-20" x 2-1/2" stainless steel carriage bolts, 5/16" x 1-1/2" stainless washer and serrated flange nut.

Panel Assembly: Installing End Walls

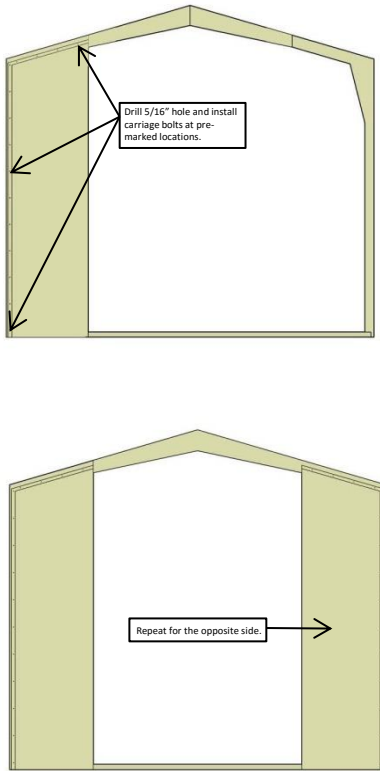
Now that the end section is up, the end walls, expanders and gables are installed. When these components are fastened, the section will be rigid and ready for the remainder sections.



Installing the end walls:

1. Place a mark on the angle base at 3'10-3/8". This is measured **from the outside of the base not the building**. This mark will be to position the bolt flange of the end wall.
2. Line up the bolt flange of the end wall with this mark on the base. Install a 2-1/2" carriage bolt through the bottom of the panel into the base.
- 3 Next, move the side wall and roof assembly so the edge of the end wall panel lines up where the roof and side panel join at the top.

Panel Assembly: End Wall



Installing end walls:

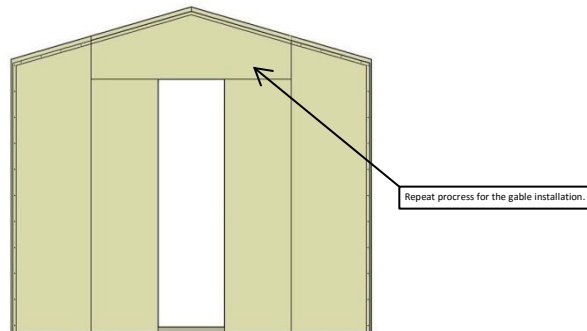
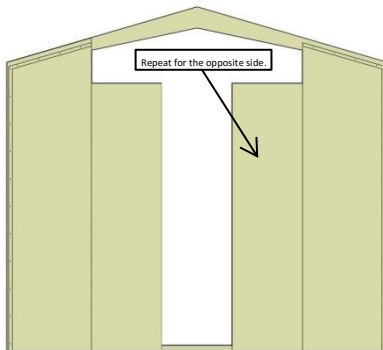
4. Drill a 5/16" hole through the bolt flange and sidewall panel at the pre-marked locations. Once the holes are drilled, install a 1/4"-20x1-1/2" carriage bolt through each hole and tighten with a 1/4"-20 serrated flange nut on the inside.
5. Repeat steps 1-4 on the other side.

Panel Assembly: Expanders:



Installing expanders and gable:

1. Set one of the expander panels in place; align so it is flush with the installed end panel using a dead blow hammer.
2. Clamp in place.
3. Drill the bolt flange approximately every 16" with a 5/16" hole.
4. Install a 1/4"-20x1" hexcap bolt and nut.
5. Repeat on opposite side.
6. Install gable in the same manner. This panel will also have pre-marked indents to fasten to roof panel.



Panel Assembly: Middle Sections



Setting the Middle Sections:

When the end section and the end wall have been installed, the middle sections will be put in place. These sections have the predrilled holes on all flanges.

Prepare for lifting the middle section the same as the end section. Note the location of your safety hooks so you set that section in the right location.

Lifting and fastening the middle section to the base is the same as the first section, **MAKE SURE** that before you fasten the side panel that the flange is on the proper mark on the base.

With one person outside, make sure that the flange is sitting on the line. Another person should be inside installing the ½"-13x2" hex cap bolt, ½" ID x 2" OD washer(x2) and ½"-13 hex nut in the bottom predrilled holes. The person on the outside should then install the carriage bolt and washer through the panel and the base. Repeat for the opposite side.

When this is done the person on the scaffold or man lift should adjust the roof panel with a pry bar so the bottom of the roof is flush with the end section roof that has been installed then install 3 bolts per roof to hold roof in place.

Once the roof panel is adjusted and bolted, the holes on side wall flanges of middle section should be lined up with the holes on the flanges of the end section side. A person on the outside using a blow hammer should be visually lining up the panels. When this is done a small number of bolts are used to fasten the middle section in place with the end section. Please follow bolt pattern indicated.

Don't bolt all predrilled holes until building is up.

Panel Assembly:Finished Look:



Finished look:

The sides should be flush with each other and line up on the roof line.

The fronts should look like this.

And line up like this.

This is how the inside will look.

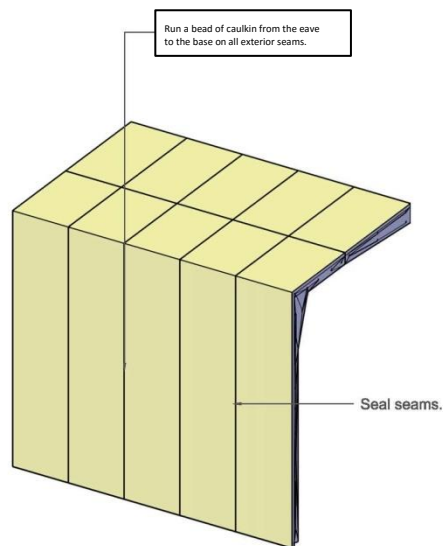
Panel Assembly - Caulking and sealant - Sides Only:



Caulking and Sealant:

Run a bead of caulking from the eave to the base on all seams on the exterior. Make sure the bead is not just sitting on the surface but has penetrated the seams.

**THIS SHOULD BE DONE
BY SOMEONE WITH
EXPERIENCE.**



Panel Assembly – Caulking and Sealant - Roof Only:



*****Where there are larger gaps along the roof panel seams we recommend using spray foam instead of caulking to seal the gaps.*****

This should be done by a experienced person as this is one of the most important tasks

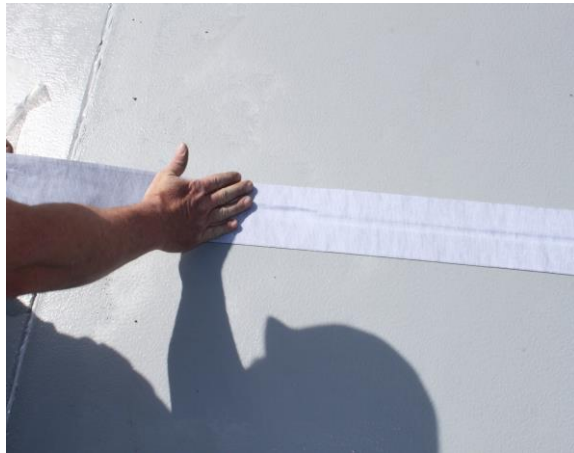
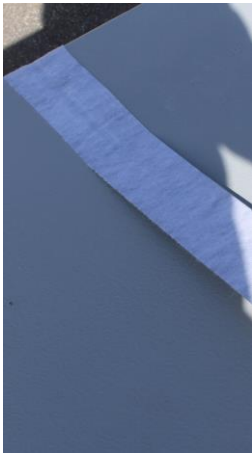
Step 1: Using the caulking supplied run a bead of caulking along all of the roof seams.

Step 2: Adhere the 4" webseal roof tape over the seam with the building seams centered under the tape.

Step 3: Smooth the tape out with your hand to ensure it is secure.

Step 4: Apply with a paint brush the silicone roof sealant over the tape to seal in the seams of the tape. Allow to dry.

NOTE: 4" WEBSEAL ROOF TAPE AND SILICONE ROOF SEALANT ARE FOR THE ROOF SEAMS ONLY.



Installing Doors and Windows:

If you have requested a man door, the doors and hardware will be supplied. If you have requested a rollup door, please refer to the Roll-up door assembly guide for step by step instructions.

