

MDSI Perimeter Extrusion Series 32

Installation Guidelines

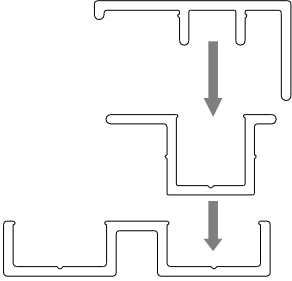


**METAL
DESIGN
SYSTEMS**

DESIGNED FOR
A PERFECT FIT.

Metal Design Systems is pleased to offer an Installer's EDGE training course at our home office in Cedar Rapids, Iowa. This class is offered once a month, free of charge to the installer. If you are interested in attending, please contact MDSI via email at tech@crmdsi.com.

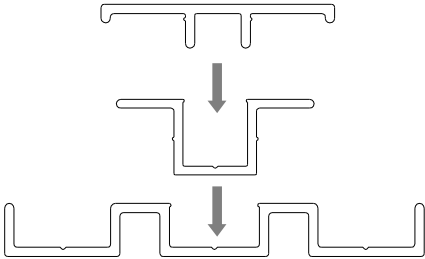
Metal Design System, Inc.
SERIES 32
Installation Guidelines



3203 – Perimeter Cover

3202 – Perimeter Retainer

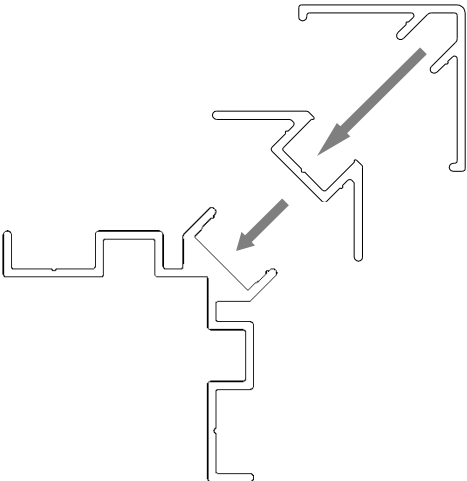
3201 – Perimeter Base



3206 – Field Joint Cover

3205 – Field Joint Retainer

3204- Field Joint Base



3209 – OSC Cover

3208 – OSC Retainer

3207 – OSC Base

Required Equipment:

Forklift:

Typically crates are shipped directly to the job site from our fabrication facility via LTL carrier. This means the crates will arrive in an enclosed trailer which will require either a dock and a fork lift, or an extended reach forklift in order to unload the crates. The average crate size is 4' x 10', but they can be up to 5' x 16'. Large shipments can be delivered on flat bed trucks if prior arrangements are made.

Man-lift/Scaffolding/Ladders:

The terrain, accessibility, quantity of work on each area, and height of work will typically determine the type of lift equipment required to complete each project. The preferred option will usually be an all terrain scissor lift because they offer a larger platform allowing for more work space and fewer moves.

Work Table:

You will need a work surface to prep the panels for installation, cut penetrations, or make field modifications. The table should be large enough to safely support the largest panels on the project, and be covered with a long pile carpet to protect the panels from damage. Some installers prefer to build tables on site using the crating materials. This is perfectly acceptable provided that they are constructed in a sturdy fashion.

Power Tools:

10" or 12" miter saw with 80 tooth non-ferrous metal cutting blade for cutting extrusions; jig saw with plywood cutting blade for cutting penetrations in panels; circular saw with 60 tooth, carbide tip, non-ferrous metal cutting blade; drill and various sized drill bits; screw gun with 5/16" hex head driver and #2 Phillips bit.

Hand Tools:

Pop-Rivet gun, rubber mallet, single-cut metal file, countersink bit, hole saw kit for penetrations, caulk gun, utility knife, single edge razor blades, tin snips, flat blade screw

driver, tape measure, 4 foot level, torpedo level, (a laser or sight level can be very helpful for layout depending upon the complexity of the project), chalk line, safety glasses, work gloves, and hearing protection.

Supplies:

Always have an ample supply of fasteners in various sizes; plastic horseshoe shims in 1/4", 1/8", and 1/16" thicknesses; silicone sealant in the appropriate color; waterproof tarps to cover the crates; and shop rags.

Crew Size:

A crew size of three typically works best in most cases. This allows for two in the lift, handling and installing the panels on the wall; and one on the ground prepping panels, cutting and drilling extrusions, and for general ground support.

Unloading:

Prior to unloading the crates from the delivery truck inspect the crates for damage.

Note: Report any damage to the carrier and note the damage on the shipping tickets. The receiver must make all claims for damage through the carrier upon receipt. Metal Design Systems, Inc. is not responsible for any damage after the product leaves the factory.

Unload the material one crate at a time, know and follow all safety rules. Use the proper equipment for the weight being unloaded. If unloading with an overhead crane, use a spreader bar and nylon slings, do not "choke" the crates. Do not attempt to lift the crates by hand, drag, drop, or stack the crates.

Inspection and Inventory:

Shipping damage should be noted on the Bill of Lading and then reported to Metal Design Systems, Inc.

Note: The customer is responsible for filing a claim for freight damage with the shipping company within 24 hours of receipt. Failure to do so may result in forfeiture of the right to receive corrective action.

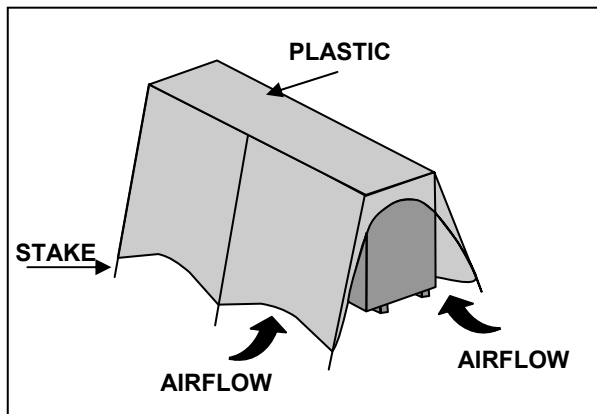
After verifying the condition of the product, inventory the panels and miscellaneous items and compare against the packing slip to ensure that all material is received.

Note: Notify Metal Design Systems, Inc. immediately if the quantities received do not match the packing list. Failure to do so may result in forfeiture of the right to receive corrective action.

Storage:

Store crates in a clean dry place. If the crates are to be stored outside, cover the crates to protect from the elements and ventilate to minimize heat build up (Figure 1). At the end of each work day, place loose panels back into the open crates, secure the panels, and cover the crate.

Figure 1



Shake Out:

Crate #1 will have a set of shop drawings indicating general panel layout/seam locations. Each panel will be field cut to fit the precise field conditions. Each crate will have a packing slip indicating the quantities of sheets and extrusions. At this time it may be beneficial to boldly write the contents of each crate on the outside for future reference. If possible,

strategically place each crate in a location convenient to the final destination of its contents.

Handling Individual Sheets:

When removing sheets from the crate, always take care to lift and clear other sheets and sidewalls of the crate (Figure 2). Never slide or drag sheets out of their location. When carrying the material, always carry it “on edge” and never flat (Figure 3). Always be aware of your surroundings and take special care when handling to prevent damage. Do not place the sheets in any position that will cause the material face or edges to come into contact with any surface that will cause damage to the protective film or sheets finish. The protective film is designed to prevent minor abrasions. Extreme care should still be taken to avoid dents and scratches.

Figure 2

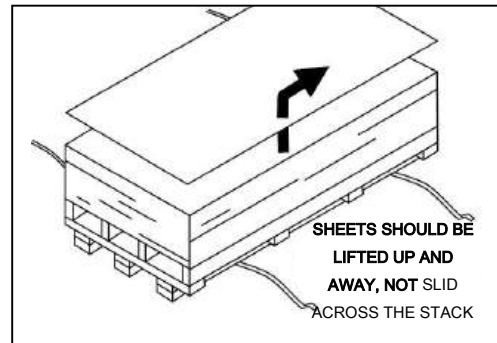
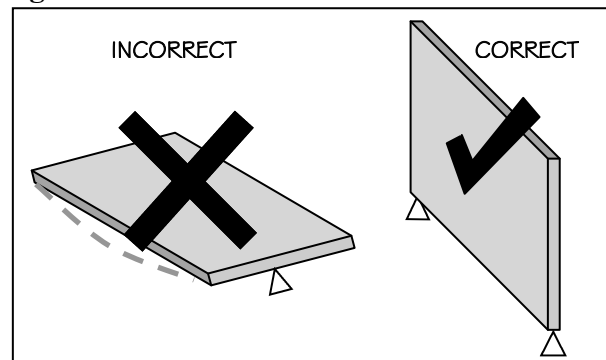


Figure 3



Substrate/ Job Inspection:

Inspect the area that is to receive the panels to ensure that all work is complete and satisfactory. All substrates, weather barriers, penetrations, doors, windows, and any other

adjacent materials should be in place and cleaned prior to proceeding with panel installation.

Note: Acid wash used for cleaning masonry will cause permanent damage to the panels.

Ensure that all surfaces are plumb, level, square, true, dry, and free from defects. Do not begin installation until all unsatisfactory conditions have been corrected.

Installing Flashing and Weather Barrier:

Install flashing using standard sheet metal practices and procedures, ensuring that all joints and seams are weather lapped and sealed. For weather barrier, follow manufactures written instructions for proper installation. Integrate weather barrier and flashing to allow proper drainage of any moisture that may enter or accumulate within the panel system.

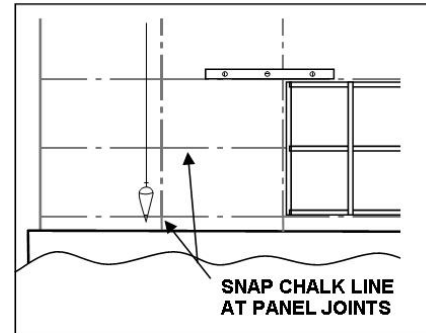
Layout:

Reference the shop drawings and locate key components for panel system alignment (i.e. windows, doors, window mullions, or other items that are critical to joint locations) and begin layout from these locations. Snap chalk lines at the center of each panel joint making sure that all lines are level and plumb (**Figure 4**). This will help to control panel gain or loss over a long run. If the panel system is to be installed over a gypsum board substrate, locate all framing members to ensure that all fasteners engage a structurally sound member. Metal Design Systems, Inc. recommends #25x1-1/2" Self Drilling fasteners for applications into steel or aluminum and #25x1-1/4" Torx Wood fasteners for wood substrates. The recommended maximum spacing is 16" on center. Please reference the project specific details for fastener type and spacing requirements.

If the system is applied over a gypsum sheathing substrate, ensure that the fasteners are of sufficient length to properly engage the structural framing members. Self-drilling/self-

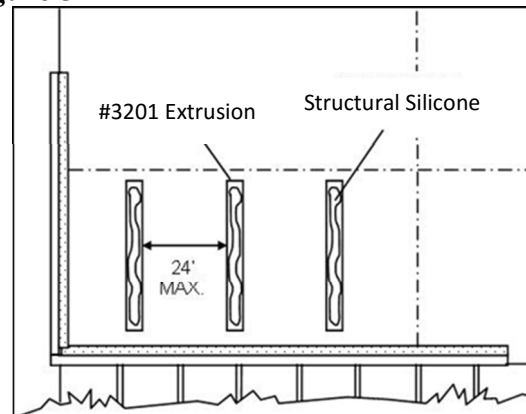
tapping fasteners require a minimum of 3 fully formed threads extending beyond the back of the metal, and wood screws require a minimum of 1" penetration

Figure 4



Larger panels will require panel stiffening to protect the system from permanent deflection. To stiffen a larger panel, attach a Perimeter Base Extrusion (3201) behind the panel by fastening the extrusion to the wall. Then, run a bead of structural silicone down the face of the extrusion so that the silicone will make contact the back of the panel. Make sure the extrusions have a maximum spacing of 24". (**Figure 5**).

Figure 5



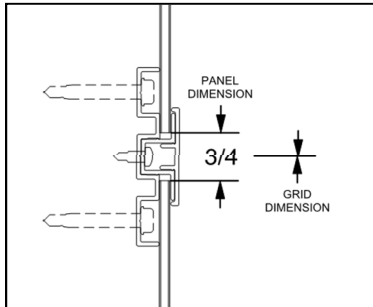
Installing Panels Metal Design Systems Series 32:

General:

Locate work table and miter saw in a safe and convenient location relative to the installation area. The panels must be cut to a size smaller than the nominal joint to joint dimension of the

panel grid. This will typically be 3/4" smaller than the nominal dimension in both the X and Y directions. This is to allow some tolerance as well as thermal expansion of the panels. (Figure 6)

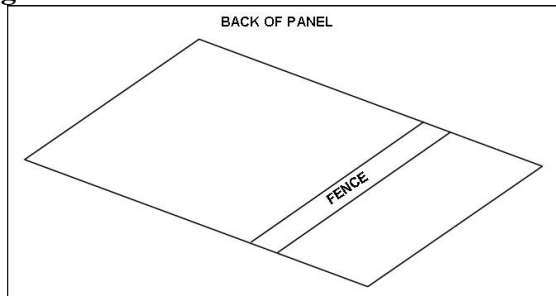
Figure 6



Field Cutting Panels:

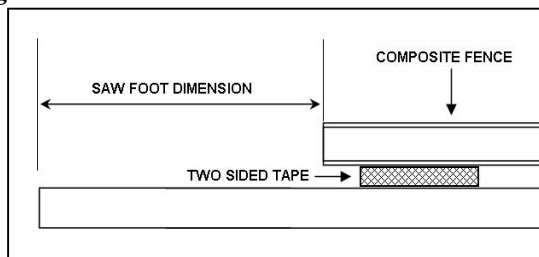
Determine the required nominal dimension of the panel according to the layout and subtract the required distances for clearance and thermal expansion. Cut the panel using a circular saw with a fine tooth carbon tipped blade (Figure 7).

Figure 7



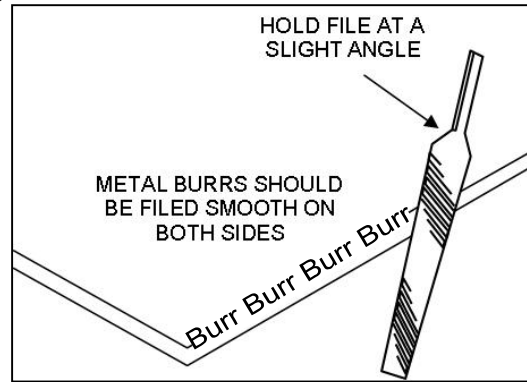
Two sided tape works well to temporarily secure the fence to back of the panel (Figure 8).

Figure 8



After cutting the panel, file the edges smooth. This will ensure a proper fit in the extrusions and could prevent personal injury (Figure 9).

Figure 9

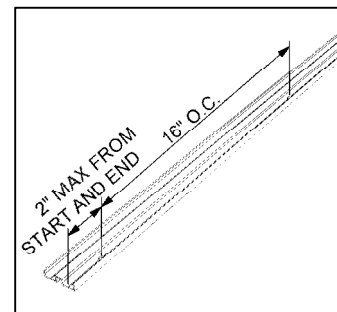


Installing Panels:

Installing the Base Extrusions (3201, 3204, and 3207):

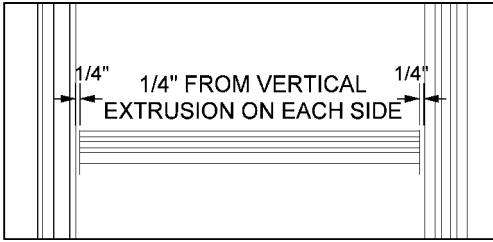
Start by pre-drilling extrusions with a slightly oversized bit. The maximum fastener spacing for 3201(Perimeter Base) should be 16" on center and 1/2" to 2" from the start and end of each extrusion. Please check the project specific drawings for proper fastener size, type and spacing (Figure 10).

Figure 10



To install all other base extrusions (3204, and 3207) use two fasteners, one on each side, 1/2" to 2" away from the start and end of the extrusion then alternate sides at a maximum of 16" OC. All the vertical base extrusions should run continuous top to bottom. The horizontal base extrusions should be cut 1/2" shorter than the space between the vertical extrusions to allow for a 1/4" gap on each side (Figure 11).

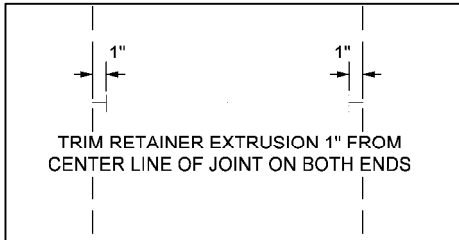
Figure 11



Installing the Retainer Extrusions (3202, 3205, and 3208):

Next cut the retainer extrusions 2" shorter than the nominal (centerline to centerline) size of the panel and make sure the retainer extrusion is the correct part for the base extrusion (Figure 12).

Figure 12



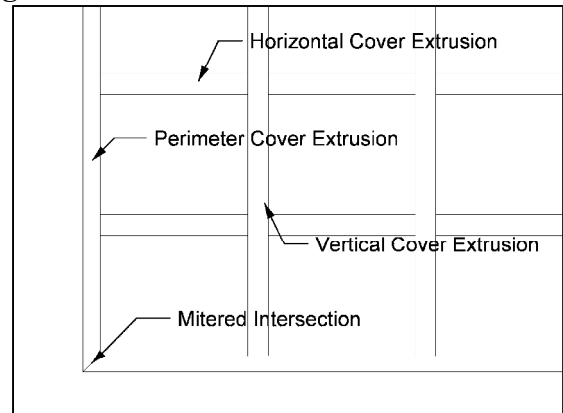
Start on the bottom left corner of the job and install the retainer extrusion for the first panel on the bottom and left base extrusion. Peel the protective film on the ACM panel back off the edges so it will not be trapped behind the retainer and cover extrusions. Proceed to insert the panels and install the top and right retainer extrusion before moving onto the next panel to the right. After finishing a horizontal row start over on the next horizontal row. Snap the retainer extrusions in place using the provided tools or a block of wood that fits into the channel and tap it in with a mallet. Fasten the retainer extrusions to the base extrusions with the provided #8x18x1/2" Self Drilling Phillips Pan Head fasteners, one at each end of the retainer and a maximum of 16" OC.

Installing the Cover Extrusions (3203, 3206, and 3209):

Check that all the base and retainer extrusions are in their proper place before moving on to

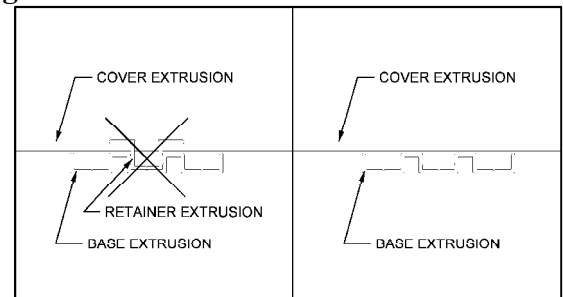
installing the cover extrusions. Install the perimeter cover extrusions (3203) continuous and miter any intersections. Then run the vertical cover extrusion continuous cutting it flat where it intersects a perimeter cover extrusion (3203). The horizontal cover extrusions need to be cut to fit in between the vertical cover extrusions. Make sure to match the cover extrusions to the retainer extrusion (Figure 13). Cover extrusions should be engaged into the retainer extrusions and held in place. Using a rubber mallet, drive the cover into the retainer until it snaps into place working from one end to the other.

Figure 13



Make sure that cover extrusions have 1/8" gap for every 8' of length to allow for thermal expansion. Also keep in mind the cover extrusions cannot pass over a retainer extrusion, it can however pass over a base extrusion without a retainer extrusion installed (Figure 14).

Figure 14



Cleaning Panels:

In most cases, never use anything more than mild detergent and a soft cloth to clean the panels. Rinse with clean water immediately afterwards. See panel manufacturer's recommendations for proper cleaning methods.

Clean Up:

Keep work areas free of objects that could cause injury or damage to the panels. At the end of each work day, place all trash and debris into the appropriate containers for disposal.

**These guidelines are intended to convey the general sequences and procedures. Each application may vary and require specialized procedures. Refer to the project specific details for specialized instruction or contact Metal Design Systems, Inc.
Phone: 319-362-7454**

Revised 5/8/17