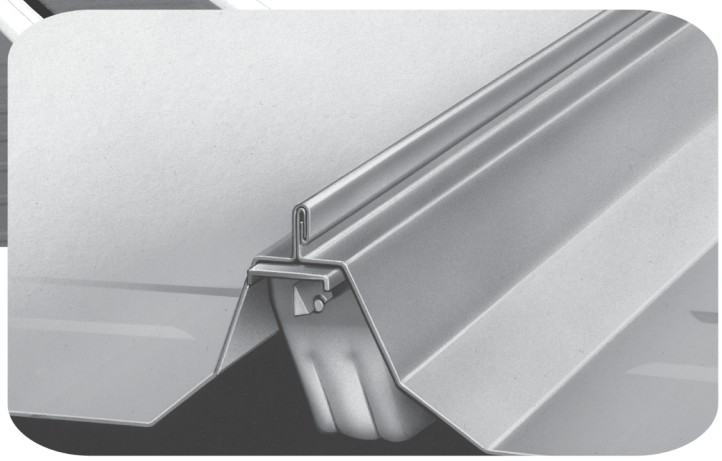
MR-24® Roof System

Installation Guide



BUTLER®

MR-24® ROOF SYSTEM INSTALLATION MANUAL

INTRODUCTION

This manual is furnished as a supplement to the other Installation Manuals and drawings. The design features of the MR-24® roof system call for careful planning in handling and locating panels on the structure well in advance of the actual installation to avoid costly delays.

NOTE: Variations from the contents of he manual can occur because of specific customer requirements and subsequent engineering changes. Always refer to the Installation Drawings supplied with the shipment which will govern specific part and assembly arrangements and applicable installation details.

TABLE OF CONTENTS

Page

Safety Guidelines..... 3

Handling Panels
- Full Crates: Unloading and Storage..... 9
- Full Crates: Preloading..... 10
- Single Panel..... 11

Handling Material
- Insulation Storage..... 12
- Hardware, Fasteners And Sealant Storage..... 13
- Trims and Flashings..... 13

Tools and Related Materials..... 14

Fasteners..... 15

Sealants..... 17

General Information..... 18
- Panel Clip..... 18
- Roof Runner® Seaming Machine..... 18
- Double Lock Seam..... 19
- Roof Panel Dimensions..... 19
- Panel Usage..... 20

Overview
- Direction of Panel Installation..... 21
- Insulation System..... 22
- Trim Clips..... 23
- Endwall Trim Clips..... 24

Insulation..... 25
- Stapling Procedure..... 26
- Installation Procedure: At Ridge without Interior Ridge Trim..... 27
- Installation Procedure: At Ridge with Interior Ridge Trim..... 28
- Interior Ridge Trim..... 29

Installation of Panels..... 30
- Insulation Details..... 31
- Laying the first roll of Insulation..... 32
- Thermal Blocks Insatallation..... 33
- Installation of First Panel..... 34
- Eave Panel Detail..... 35

Table of Contents (cont'd)

Page

Panel Clip Detail..... 36
Thermal Block Details..... 37
Position Second Insulation Roll..... 38
Stapling Insulation..... 38
Installing the Third Panel..... 39
Installing the Fourth Panel..... 39
Seaming the First Four Panels..... 40
Stack Remaining Panels On Finished Roof..... 40
Unroll the Next Insulation Roll..... 41
Shake Out Insulation Into Position..... 41
Continue Installing Roof Panels..... 42
Work to the Preloaded Crate of Panels..... 42
Roof Runner Seaming Machine Operations..... 43
Derailer..... 49
Tips for Trouble Free Operation..... 50
Inside Corner at Overhang..... 52
Use of Hand Seamer..... 52
Clearances..... 53
Panel End Laps..... 54
Panel Clip Adapter..... 57
Gable Trim Installation..... 58
Panel End Closure Installation..... 59
Retainer Installation..... 60
Ridge Cover Installation..... 61
Ridge Cover Splice..... 61
End Cover Installation..... 61

SAFETY GUIDELINES

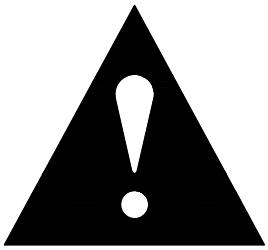
SAFETY

Safety must be a prime concern throughout the entire installation process. This manual contains safety information that is important for all workers to know and understand. It is not possible to present complete and comprehensive safety instructions in this manual. All local, state and OSHA safety regulations must be followed at all times. The installation contractor has the ultimate responsibility for the safety or workers and must comply with all applicable safety regulations.

The Occupational Safety and Health Act regulations applicable to the installation of this or any other building are identified as Part 1926, Safety and Health Regulations for Construction and are available from any government book store. These OSHA Regulations should be recognized as a job site requirement and must be fully complied with. Failure to do so may result in worker death or injury as well as substantial fines in the event of an OSHA inspection.

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol in this manual, be alert to the potential for personal injury. Follow recommended precautions and safe practices.



FOLLOW SAFETY INSTRUCTIONS AND WARNINGS

Carefully read and follow all safety and warning messages in this manual as well as the Operating Instructions for the Butler Roof Runner® seaming machine ("seamer") and the starting platform and all applicable installation drawings.

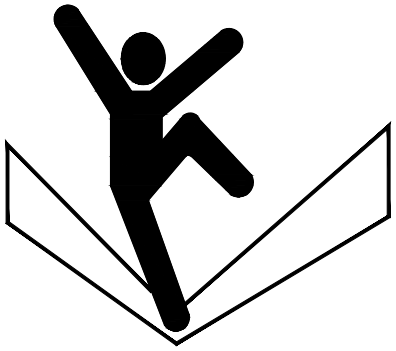
All bundles of roof panels have numerous "Roof Panel Warning Labels" attached to them. This label is designed to inform workers of the hazards associated with falls from roof panels. A copy or this label is found in this manual on page 4.

The "Roofing Work Safety Instructions" set out in detail the hazards involved in roof installation as well as suggestions on how to prevent falls and a copy of these instructions is found in this manual on page 5 and 6.

Eight copies of the Roofing Work Safety Instructions, eight copies of the Roof Panel Warning Label and one "Sign Off Sheet" are provided in the "Roof Warning Packet" that is sent with each roof order the envelope of this packet provides instructions to the roofing crew supervisor to hold a safety meeting and review the Roof Panel Warning Label and Roofing Work Safety Instructions with each member of the roofing crew before roof installation begins.

⚠ WARNING

You may fall from roof and be killed or seriously injured

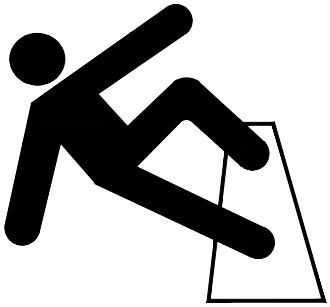


Any panel can collapse.

Do not step on panels with creased edges

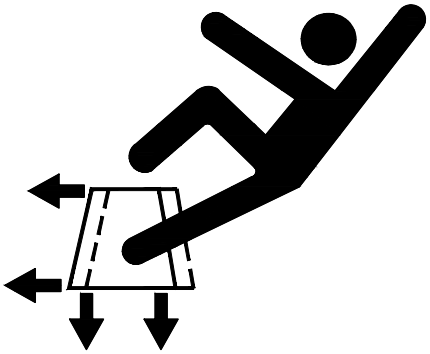
Do not step on or NEAR edge of panel.

Do not step within 5 feet of panel end.



Panels are slippery.

Use fall protection.



Loose panels may slide out from under you.

Do not step on loose panels or stacks of panels.

Always use fall protection.

Get and read "Roofing Work Safety Instructions" from supervisor.

ROOFING WORK SAFETY INSTRUCTIONS

Working off the ground even a few feet can be extremely dangerous. Falls from a height of ten feet or less can be fatal. You should be aware of the following hazards while installing roof panels:

I. PANELS CAN COLLAPSE

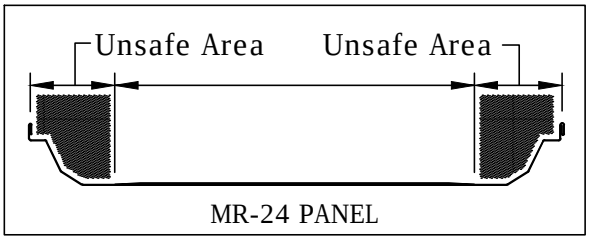
Butler roof panels can be a safe walking surface (except for slipperiness caused by oil or moisture) ONLY when they are completely seamed (MR-24) or fastened (CMR-24 liner panels) to other panels on each side.

Panels not completely seamed or fastened on each side are not safe and can collapse suddenly and without warning.

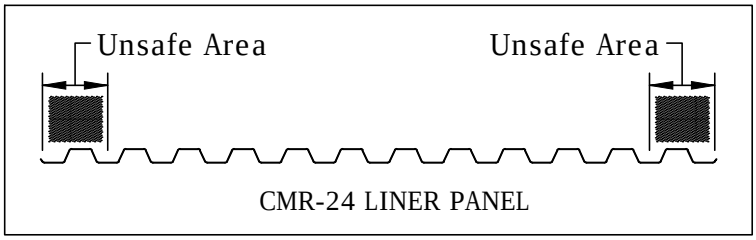
When installing roof panels, always use fall protection.

Fallow these additional safety precautions:

1) Never step, kneel or place weight on the raised edge of an MR-24 panel or on the edge corrugation of a ButleribII panel or CMR-24 liner panel.



MR-24 PANEL



CMR-24 LINER PANEL

2) Use extra care when installing panels with creased or kinked corrugation or edges. Placing weight on any portion of such a panel may cause the panel to collapse.

3) Never stand or work within five (5) feet from the end of a panel that is not fully seamed or fastened.

4) When fastening a panel to the structural, stand toward the middle away from the raised edge or edge corrugations of the panel and directly over the roof structural.

5) Never allow more than one worker to stand or work on the same panel between two roof structurals.

6) When walking on CMR-24 liner panel that has been fastened to the roof structural, do not step on the sidelap. Step only on the liner panel area that is supported by the roof structural.

Never use unattached roof panels as a work platform for any purpose. This is an extremely hazardous practice and should never be done.

ROOFING WORK SAFETY INSTRUCTIONS

II. PANELS CAN BE SLIPPERY DUE TO OIL OR MOISTURE

All roof panels whether painted or unpainted, are slippery to walk on. Unpainted roof panels are coated with a clear fluid to aid in manufacturing and to protect them from rust during shipping and storage. This fluid contains a small amount of oil which can make the panel very slippery to walk on.

The fluid may leave a coating of oil on the soles of your work boots. This coating may cause you to slip and fall even when you are no longer working on a roof panel.

If a bundle of panels is stored on a slight slope, the oil may run down hill on warm days and collect on one portion of the panels. This makes the oily portion of the panel even more slippery than normal.

Dew, frost, or any other moisture on roof panels, whether painted or unpainted, greatly increases the slipperiness of the panels and extra care should be taken. The pitch of the roof (its slope) can also increase the hazard.

Because of these hazardous conditions, it is essential that fall protection be used at all times. It is also recommended that walkboards be used in the flat of the panel when installing roof panels.

III. LOOSE PANELS MAY SLIDE OUT FROM UNDER YOU

Never step on a single roof panel or a stack of several roof panels lying unattached on the roof structurals. The bottom side of roof panels may also have an oil coating. If you step onto a single panel lying unattached on the roof structurals, it may slip causing you to lose your balance and fall. Even a stack of several panels lying unattached on the roof stucturals may slip if you step on it.

WHAT TO DO TO PREVENT ROOF FALLS

1. Always use fall protection- including but not limited to, lifelines, safety belts, lanyards, safety nets, scaffolding, man-lifts, catch platforms, and Sky-Web®.

2. If You Need a Work Platform- for laying insulation or any other purpose, you should use a runway as specified in OSHA Section 1926.500 (d) (A walkboard at least 18" wide with a toe board and a 42" high railing mede of 2x4's on one side with another rail halfway between the toe and the top rail.) Never use unattached or partially attached panels as work platform.

3. To Avoid Slipping- wear good work boots while on the roof. The danger from a slip is greatest while installing roof panels or insulation at the edge of the roof. Use walkboards in the flat of panels when installing panels. When working near the edge of the roof, you should use fall protection such as safety lines, safety nets, a catch platform or the like.

4. To prevent Panels from Slipping- Do not step on loose roof panels or even a stack of several roof panels.

5. Walkboards- One method to add stability to panels and prevent slips at the leading edge and the eave is to place walkboards in the flat of panels. (Walkboards for MR-24, CMR-24 liner

panels.) The boards should run the full length of the roof slope and should be fastened together by drilling a hole near the ends of each of each and tying to the next board with rope. Cut a groove in the bottom of each board so that the board will lie flat and not tip back and forth because of the rope. This will prevent the boards from slipping out under you when you step on them. Walkboards are not a substitute for appropriate fall protection.

SAFETY GUIDELINES

FALL PROTECTION

Fall protection is required by OSHA when working at heights. There are many types of fall protection devices available and the installation contractor is responsible for making sure the appropriate devise is used in accordance with all local, state and OSHA Regulations. Examples of some fall protection devices are:

-Safety belts and lines
-Safety lanyards
-Safety nets
-Catch platforms
-Scaffolds

In additional to the above devices, fall protection at the leading edge of the roof can also be accomplished by utilizing the Sky-Web® fall protection and insulation support system offered by Butler. The Sky-Web system is an open polyester scrim mesh interwoven on an approximately one half inch by one half inch square grid. The mesh is securely fastened around the perimeter of the building providing workers with protection from falls from the leading edge of roof area. The Sky-Web system, once installed, also offers workers below protection from certain falling objects such as tools, roof seamers and roof panels.

While OSHA does not provide approvals or endorsements of products or methods. OSHA does evaluate concepts to ascertain their likelihood of providing compliance with applicable safety standards. At Butler's request, OSHA reviewed the Sky-Web system and concluded that, when properly installed, it would "...eliminate the fall hazard at the leading edge of the roof on a partially completed metal building roof system."

IMPORTANT: The Sky-Web system protects only the leading edge of the roof surface and other methods of fall protection must be used at the remaining perimeter of the roof. Further, the Sky-Web system does not provide fall protection from heights greater than the plane of the roof and adequate fall protection must be used while installing the Sky-Web system.

For further information on the application, availability and cost of the Sky-Web system, call the Butler Insulation Group at 800/826-2009 or 816/968-3715.

A "safety" clamp suited for use on a fully seamed MR-24 roof system is also available form Dynamic Fasteners (800/821-5448). The clamp must be attached to a fully seamed panel, the flange of the clamp must be hooked to the seam before the three bolts are tightened and connected to a safety line of proper length. Butler Manufacturing does not endorse the use of this clamp and does not represent that this clamp meets any local, state or OSHA requirement or regulation.

SAFETY GUIDELINES

ROOF RUNNER SEAMING MACHINE AND STARTING PLATFORM SAFETY

Installation of the MR-24 roof system requires the use of a seamer and starting platform. Detailed operation instructions are on page 43-53 of this manual. In addition, follow the following safety guidelines:

-Always use fall protection when installing panels or working near roof edges.
-Make sure seaming follows laying of panels as closely as possible.
-Locking pliers (not supplied by Butler Manufacturing) used to attach starting platform to panels must be in good conditions and adjusted to resist a good hard pull (60 pounds).
-Never straddle the starting platform or counter balance the Roof Runner seaming machine with your own weight.
-Never step on the starting platform pan.
-Never tie power cords together or to the seamer.
-Never "ride" the seamer or block vents on the motor in any way.
-Keep the path of the seamer clear at all times and power cords free of entanglements.

The following warning decal is attached to the starting platform pan:

Failure to heed these warnings can result in serious injury or even death.
If the warning decal becomes illegible, order a free replacement from The Roof Runner Operations Department at (816) 763-0815.

OTHER ROOF INSTALLATION HAZARDS

INSULATION- Blanket insulation has no load bearing strength and cannot support a workers weight. Always use fall protection. The use of fiberglass blanket insulation may cause an allergic or other physical reaction to some people.

WIND- Carrying roof panels on windy days is extremely hazardous. Panels may act like a sail, throwing you off balance and causing you to fall. Blown panels may also hit and injure other workers.

BUTLER LITE*PANL® translucent roof panel- Do not walk or stand on Lite*Panl roof sheets at anytime. Always place walkboards on or barricades around Lite*Panl roof sheet area.

HANDLING PANELS

FULL CRATES: UNLOADING AND STORAGE

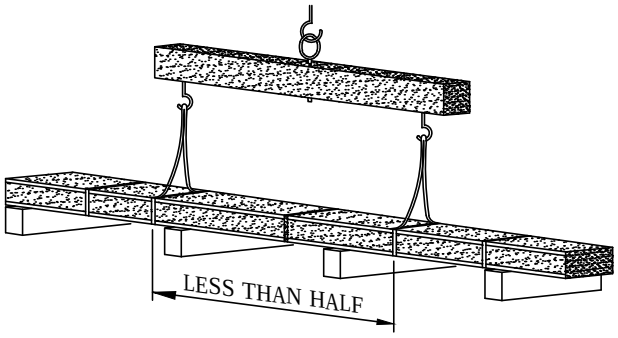
When unloading crates of panels upon arrival of shipment or handling to preload onto roof structurals, it is important to rig the bundles properly for a safe lift.

Incorrect handling may break the panel crate, severly damaging panels beyond use.

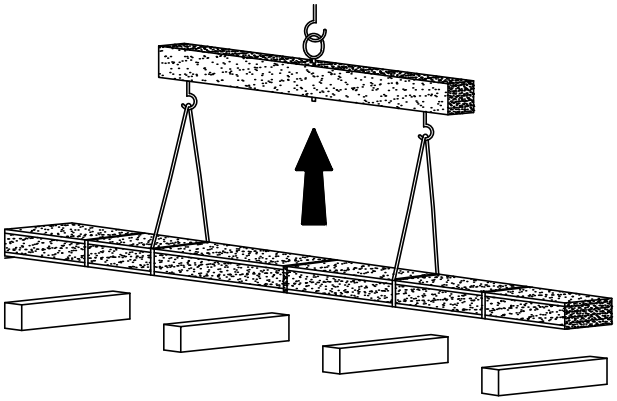
When using a crane and wire rope sling, examine the wood crating to make sure the wood prevents the slings from damaging the panels. Nylon slings are necessary when handling crates that have been opened or no longer have the wood crating for protection. The distances between the slings should be a little less than half the length of the panel.

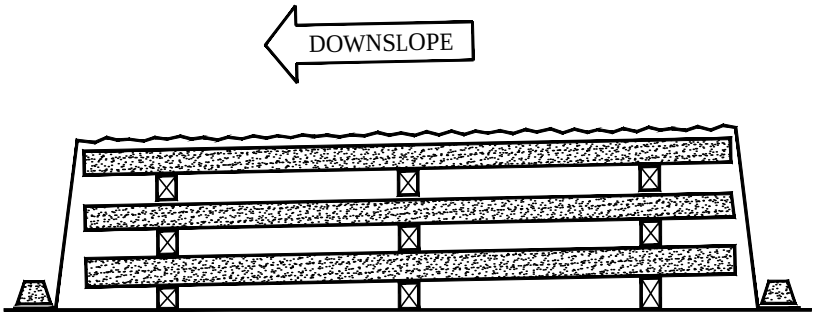
With 40 foot panels, the slings should be a little less than 20 feet apart, which will allow the bundle to arch slightly as the lift is made. The use of spreader bar is preferred.

When using a forklift for unloading, spread the forks and make a test lift at the center of the crate. If upward bow is not excessive, carefully lift. If the crates are too long or the fork cannot be used under the crate safely, use a spreader bar and slings from the forks. Normal crates of 32 panels will weigh approximately 4000 lbs. maximum. When unloading and storing at jobsite, always place dunnage under the crate, cover and slope for drainage of water from rain or snow.



SLIGHTLY LESS THAN HALF THE PANEL LENGTH





HANDLING PANELS

FULL CRATES: PRELOADING

Plan where and how panels will be loaded on the roof structurals. Decide whether to preload as the structurals are being installed or wait until after structurals are complete.

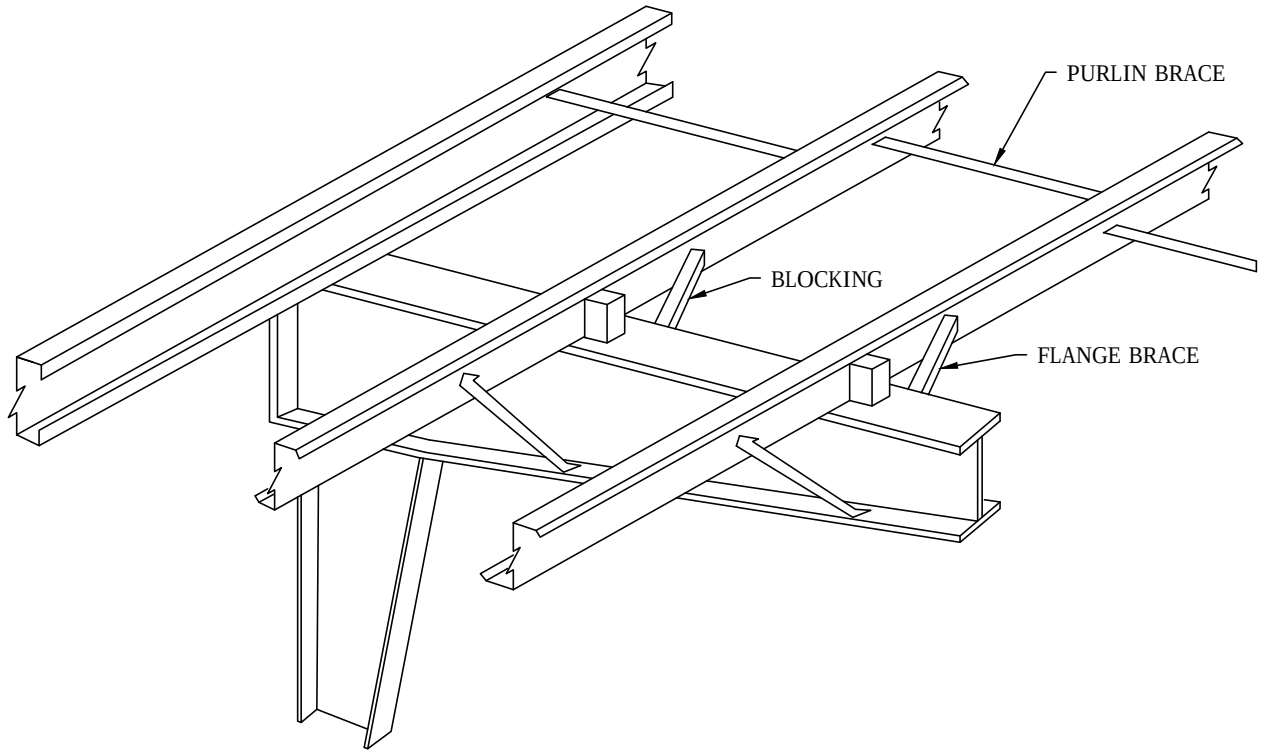
Preloading is usually the most effective method on moderate to large buildings, but indidvidual project details must be taken into consideration: the building size, site condition, the type or method of installing insulation and equipment to be used.

To help you with your preload planning, a panel location scheduale is furnished with the installation drawings indicating the roof area covered by the contents of each panel bundle.

IMPORTANT: Full bundles of panels are too heavy to load onto roof structurals at mid-bay locations and should be positioned near the main frames.

On Widespan™ stuctural systems, the "Z" purlin should be blocked for additional support. This blocking can be made from dunnage or crate material cut to the height of the "Z" purlin and positioned under the flange of the purlin and bear on the main frame top flange.

Install all purlin and flange braces and all bolts and nuts before preloading.

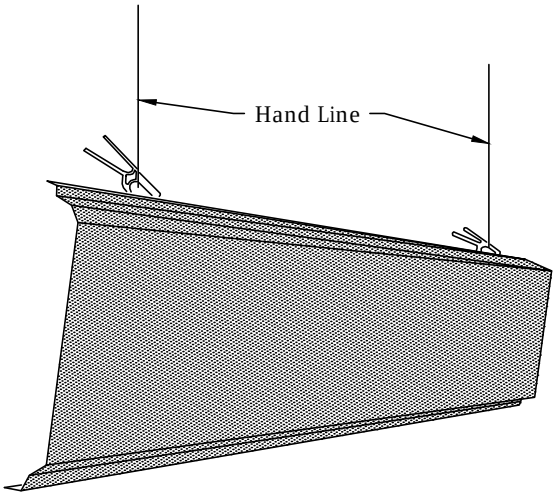


HANDLING PANELS

SINGLE PANEL

To prevent buckling of the panel when hand carrying a single panel, two workmen should grip the corrugation edge on the same side of the panel and lift in unison, distributing the weight, allowing the panel to hang sideways. Longer panels may require another workman in the middle.

CAUTION: Always wear gloves when handling panels.



When handling panels from the ground to the roof, use locking pliers type clamps over the corrugation edge positioned toward each end to distribute the weight. Attach a line to the clamps and then pull the lines smoothly up to the roof allowing the panel to hang sideways.

WARNING: Carrying roof panels on windy days is extremely hazardous. Panels may act like a sail throwing you off balance and causing you to fall. Always use fall protection.

Blown panels may also hit and injure other workers. Keep loose panels secured to prevent wind damage.

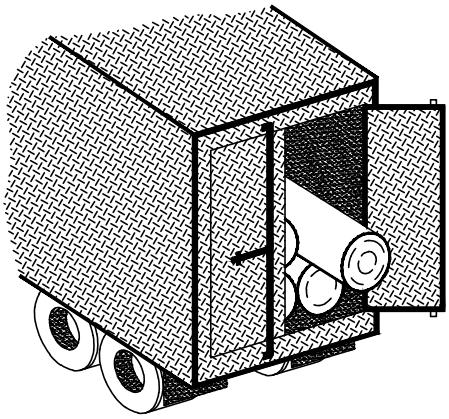
Bundles of loose panels should be banded to the purlins at the end of the work day. Steel banding should be tensioned so that wind will not loosen the bundle. Using a rope or wire lashup may allow the panel to loosen during a strong wind resulting in panel damage.

HANDLING MATERIAL

INSULATION STORAGE

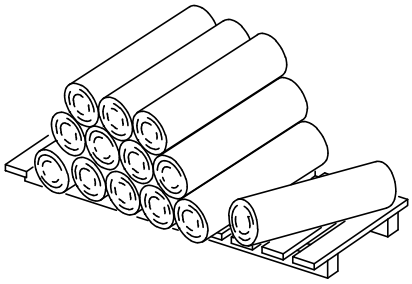
Inspect the insulation upon arrival at the jobsite to insure that it is exact as ordered. If the insulation is defective, it should not be installed and the supplier should be constacted immediately.

Insulation must be stored in a dry protected area. A storage trailer provides very good protection.



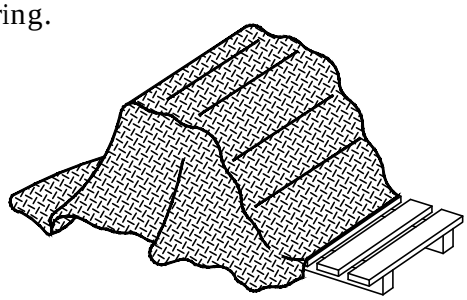
If a dry protection area is not available at the site, the insulation should be placed at the end of the building where the roof panels will first be applied. This will provide protection for the insulation material until the building is completed.

Elevate all packages above the ground or slab to prevent possible contact with surface water. Facings utilizing Kraft paper are espcially susceptible to moisture. All facings are fragile and subject to impact damge. Care in handling must be exercised. Do not allow the rolls of insulation to be thrown off the shipping vehicle, kicked, or placed in contact with sharp objects during storage.



Plastic bags used for wrapping should have holes in each end to ventilate the insulation. Do not remove plastic bags until insulation is needed.

Packages can be left uncovered during the day, weather permiting, but should be protected at nigth with a tarp or other covering.



Use the insulation as soon as possible after delivery. On large projects, the insulation can be supplied in phases as construction progresses. The longer the insulation is in storage, the more likely it will be damaged or stolen.

HANDLING MATERIAL

HARDWARE, FASTENERS AND SEALANT STORAGE

All building materials used for the roof installation should be checked, separated and stored in a dry protected area so that they are not damaged, stolen or lost before using

Do not store heavy materials on boxes of sealant as this will damage the selant beyond use.

TRIMS AND FLASHING

Check these parts for damage and store in a protected area. The trim parts may be covered with a strippable film, to eliminate transit scratching. If the part is not to be protected from the weather while in storage, then the film must be removed. This is to avoid sun exposure which will make the film brittle and difficult to remove.

Strategically place materials so they are near their use to prevent unnecessary handling.

HANDLING MATERIAL

Installation procedures shown in this manual will require the following tools and materials:

-Installation procedures illustrated in this manual will require the following tools and materials:
-Roof Runner seaming machine- leased from Butler.
-Starting platform- furnished with first seamer lease.
-Derailer- furnished with first seamer lease.
-Lock Rivet™ fastener tools- purchased from Dynamic Fastener.
-Nylon slings 4" wide 10' & 12' long or 1/2" cable, 10' & 14' long, eyes both ends.
-Electric Impact Wrench- 1/2" drive with 5" long drive extension and 3/8" magnetic socket.
-Electric drill with 5/16" and 9/64" drill bits.
-Double faced insulation tape or adhesive.
-Aligning punches, tapered 1/8" to 3/8"x 9" long-sharpened.
-Open barrel caulking gun (1/10 gal. tube).
-Steel banding equipment or rope.
-Speed wrench with 7/16" socket.
-Hard hats.
-Utility knife.
-Gloves.
-Insulation stapler and staples.
-Locking pliers.
-Blind rivet pulling tool.
-Hacksaw.
-Tin snips- right and left
-Steel tape measure.
-Dry string line.
-Tarps or plastic sheeting.
-Hand lines.
-Appropriate fall protection equipment including: body safety belt; safety nets; safety line/lanyard; catch platform; Sky-Web system; safety clamp; etc.

The installation of Scrubolt fasteners will require a 1/2" square drive impact wrench using a 3/8" Hex, 1/2 drive magnetic socket. An extension drive at least 5" long will also be required when installing the scrubolt for panel clip attachment and ridge closure.

To install the Lock-Rivet fasteners requires Lock-Rivet fastener tool with pulling head distributed by:

Dynamic Fastener
www.dynamicfastener.com
(800) 821-5448 -Voice; (800) 844-1199 -Fax

All other tools are the normal tools required for the installation of pre-engineered buildings with the exception of the seamer, starting platform and derailer which are covered later in the manual.

FASTENERS

DESCRIPTION

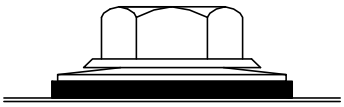
The shipping manifest will list the use location of the roof fasteners that are shipped for each roof. The use location may also be shown on the roof panel layout drawing. The code and description of the fasteners listed in this manual are:

- 095984 Stainless Steel Scrubolt® fastener
- 097196 Scrubolt fastener- green
- 096306 Lock-Rivet fastener- green washer
- 096583 Lock-Rivet fastener- gold washer
- 097190 Stainless steel flange nut
- 097124 Blind rivet

FASTENER INSTALLATION: SCRUBOLT FASTENERS

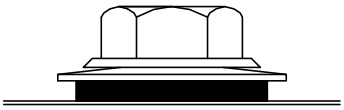
-These fasteners are designed to fasten materials together by making threads in structurals with factory punched holes.

-Install Scrubolt fasteners with a 1/2" drive impact wrench with a 3/8" magnetic socket. Drive Scrubolt fasteners until materials to be joined are pulled together and continue to tighten until the neoprene begins to expand just beyond the edge of the material washer.



CORRECT

(Sealing material slightly visible at edge of metal washer. Assembly is watertight)



TOO LOOSE

(Sealing material is not visible-not enough compression to seal properly)

TOO TIGHT

(Metal washer deformed, sealing material pressed beyond washer edge)

FASTENERS

FASTENER INSTALLATION: LOCK-RIVET FASTENERS

- All holes for Lock-Rivet fasteners should be factory prepunched or drilled with a 5/16" diameter bit. To function properly the rivet must be used in a free-fit hole surrounded by a flat, smooth surface.

- The lock rivet must be perpendicular to the surface and firmly seated against the surface before the pulling tool is used. The pulling tool is distributed by Dynamic Fastener.

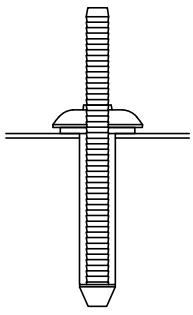
- A properly installed rivet will be firmly seated and occasionally a very small part of the neoprene washer will be showing.

- A properly installed rivet will always have three tines expanded on the underneath side.

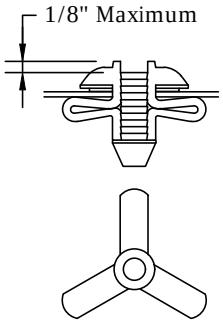
- The rivet stem will break off from a point slightly above the head to a point as much as 1/8" below. If the break off point is more than 1/8" below the head, a malfunction is indicated, and the rivet should be replaced.

- If the rivet stem breaks off high, it is because of using the wrong fastener for the grip range or the pulling head of the tool needs repair; these should be replaced.

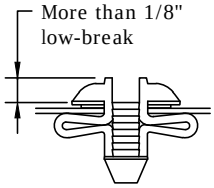
- To remove a malfunctioned rivet, first drive the stem down with a tapered punch and cut through the head of the rivet with Lock-Rivet fastener cutters, which can be purchased from Dynamic Fastener. As an alternative method, hold the head of the fastener with fastener with pliers and drill the center of head out with a 5/16" diameter bit.



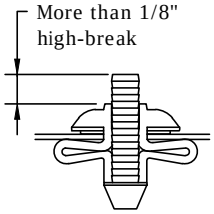
Before Pulling



Properly Installed



Replace



Replace

SEALANTS

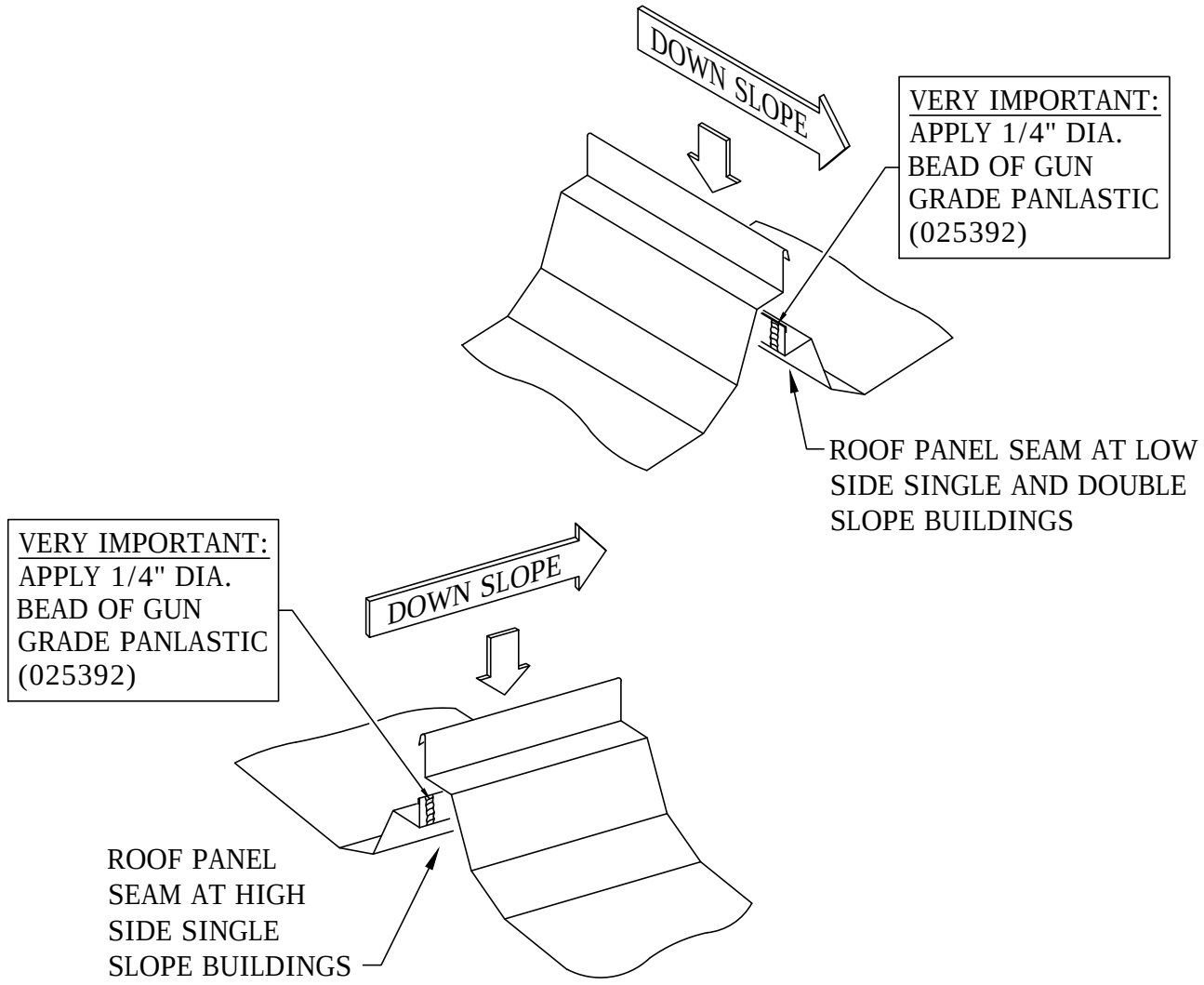
The use and proper application of all sealants shown in this manual or on the installation drawings is critical. All surfaces in contact with sealant must be clean.

Install roll sealant by pressing on the paper backing to get good adhesion and work into surfaces. To cut, use a utility knife. Never attempt to tear the sealant or it will stretch. Remove paper backing just before laying the lapping material.

When using cartridge sealant, pay special attention to the size of bead that is required.

The code and description of sealant listed in this manual are:

- 025392 Cartridge type Panlastic® sealant with embedded nylon cubes
- 016688 Cartridge type gray sealant
- 027893 Ribbon type Panlastic sealant 1/8"x1"x25' roll with embedded nylon cubes
- 560185 Foam type sealant 3/4"x50' roll
- 042717 Precut 1" ribbon type Panlatic sealant with embedded nylon cubes

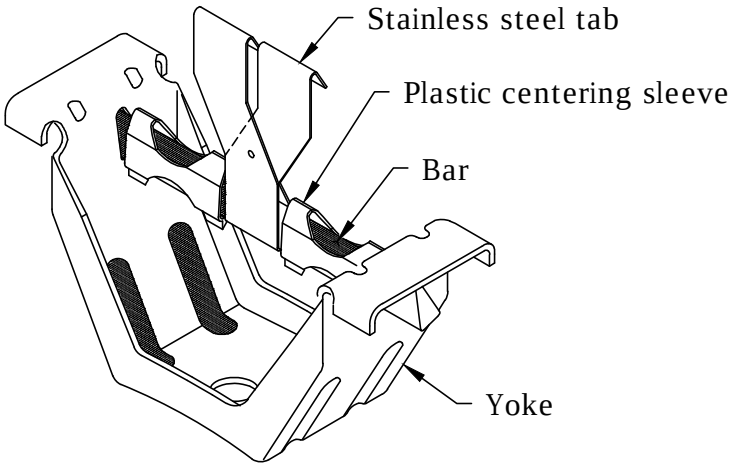


GENERAL INFORMATION

The MR-24 roof system differs considerably from other metal building roof systems because of the unique method used to fasten the roof panels to each other and to the structurals. There are no through fasteners used with these roof panels except at the eave structurals. Instead, panels with factory applied sealant are joined together by a mechanically formed lock seam. Concealed clips secure the panels to the roof structurals.

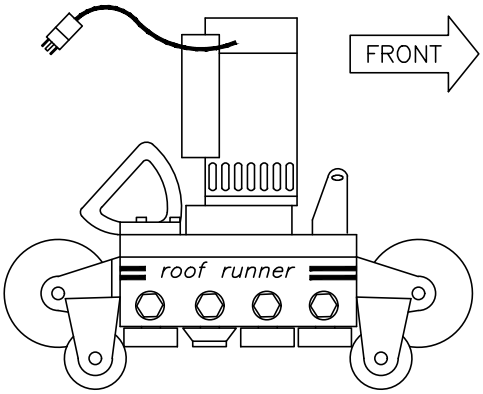
PANEL CLIP

These clips have a wrap-around stainless steel tab that is rolled into the Pittsburgh double-lock standing seam. A tab is wrapped around a bar that is attached to the roof structural by yoke. When the roof expands or constracts, the tab moves on the bar to compensate for the movement without damage. The tabs are centered by plastic sleeves that break away as movement occurs.



ROOF RUNNER SEAMING MACHINE

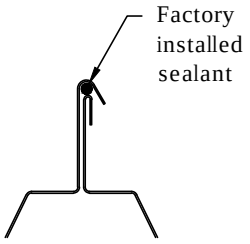
The Pittsburgh double-lock seam at the panel side lap is made with self-propelled machine, the seamer. This machine, operated by one man quickly wraps, compresses, locks and seals the standing edges of adjacent roof panels in one continuous operation. After all the panels are installed, the results is a single metal membrane covering the entire structure.



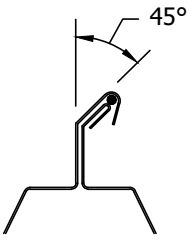
GENERAL INFORMATION

DOUBLE LOCK SEAM

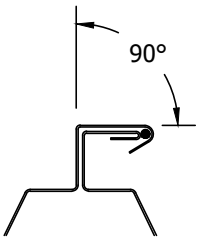
The seamer contains four sets of forming rolls or "stands." Each stand performs a metal forming operation as the machine passes over the seam.



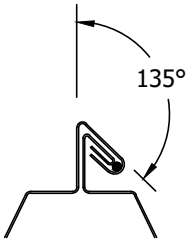
Assembled Joint (Prior to Seaming)



1st Stand



2nd Stand



3rd Stand

4th Stand
Completed Double
Lock Seam

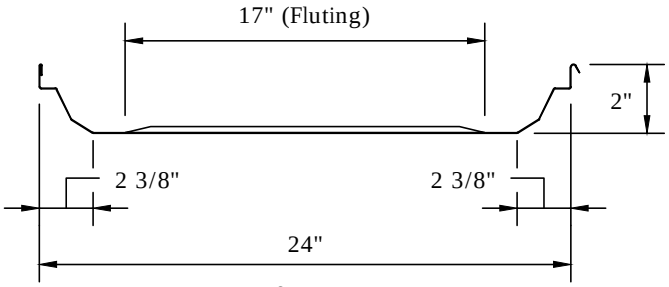
WARNING: Safe, efficient use of the seamer requires a starting platform for starting the double-lock seam at the eaves.

The seamer, available exclusively through Butler Manufacturing, is leased only on terms of 30 days or 12 months, and requires signing of a lease agreement. One starting platform is furnished with the first seamer lease.

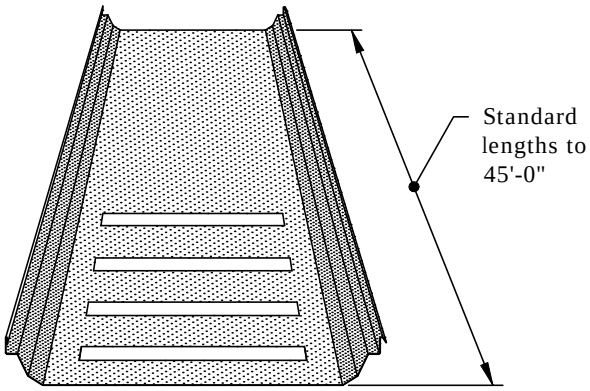
ROOF RUNNER DIMENSIONS

Standard MR-24 roof system panels are 24" wide and available in lenghts up to 45'-0". Longer panels are available in special cases.

On roofs that do not fit the 24" module, panels in widths other than 24" will be factory supplied.



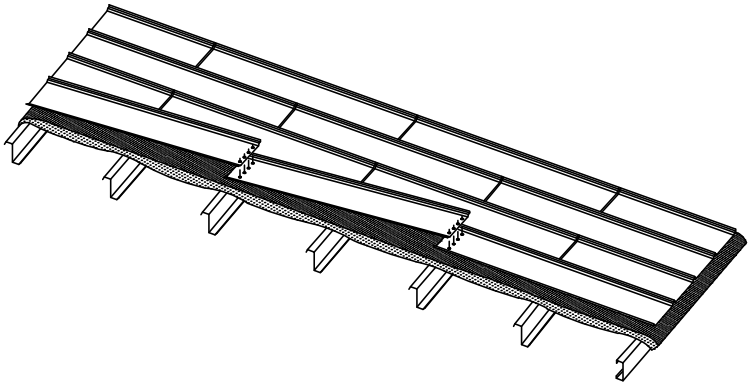
MR-24 Roof Panel Cross Section



GENERAL INFORMATION

PANEL USAGE

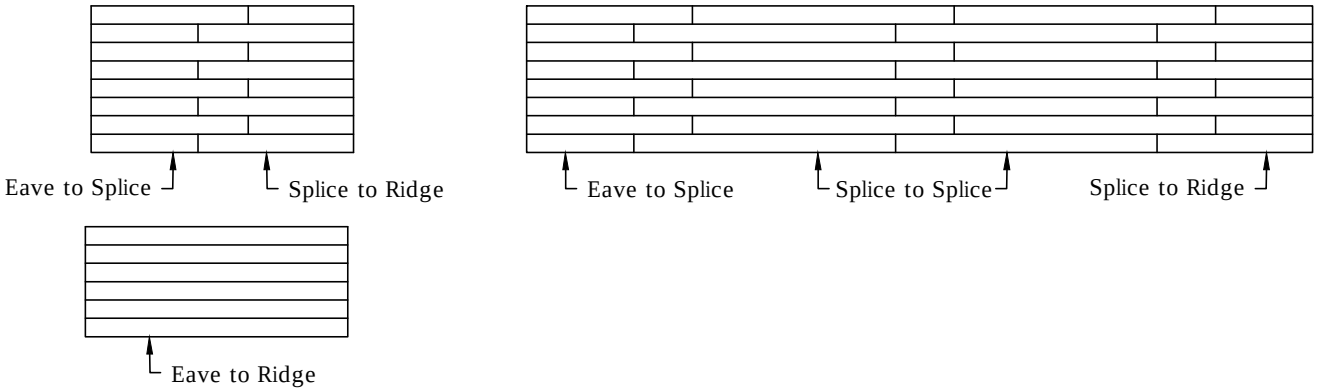
Four different types of panels are available and the type of panel or panels supplied will vary depending on the width of the roof. For example, some roofs will only require a single panel which will run from eave to ridge; some may require two, an eave and a ridge panel; other size roofs may require a combination of eave and ridge panels and one or more splice panels.



- Always refer to your roof panel layout for specific panel requirements. All panels are prepunched and prenotched where end splices are required.

- Whenever one or more panel splices are required, the end laps of adjacent rows of panels are always staggered for the entire roof length. Carefully follow the roof panel layout given for your particular roof.

- When panel splices are required, the panels are crated with alternating lengths in the same crate. Panels may be used as they come out of the crate to obtain the staggered lap pattern.



EXCEPTIONS:

When Butler Lite*Panl translucent roof panels are required, the panels will be in a separate carton or another crate marked miscellaneous.

Verify the Butler Lite*Panl roof panel location shown on the roof paneling layout drawing and make adjustment to the owner drawing as required.

IMPORTANT:

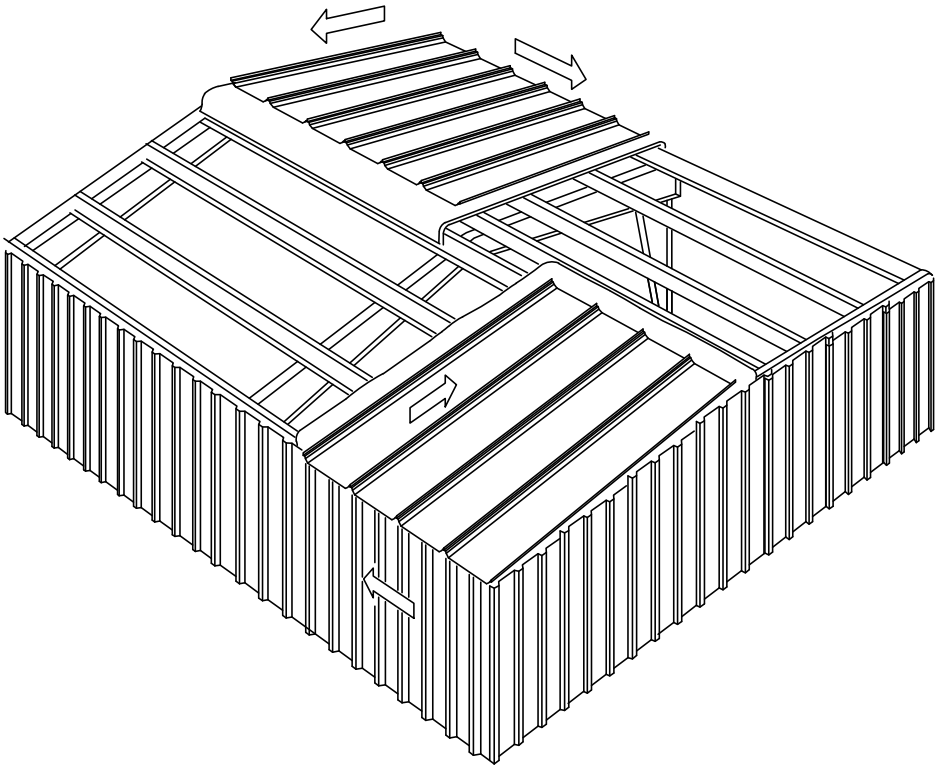
Butler Lite*Panl Skylight System for new construction can ONLY be installed if the accompanying trim panel with safety screen is included.

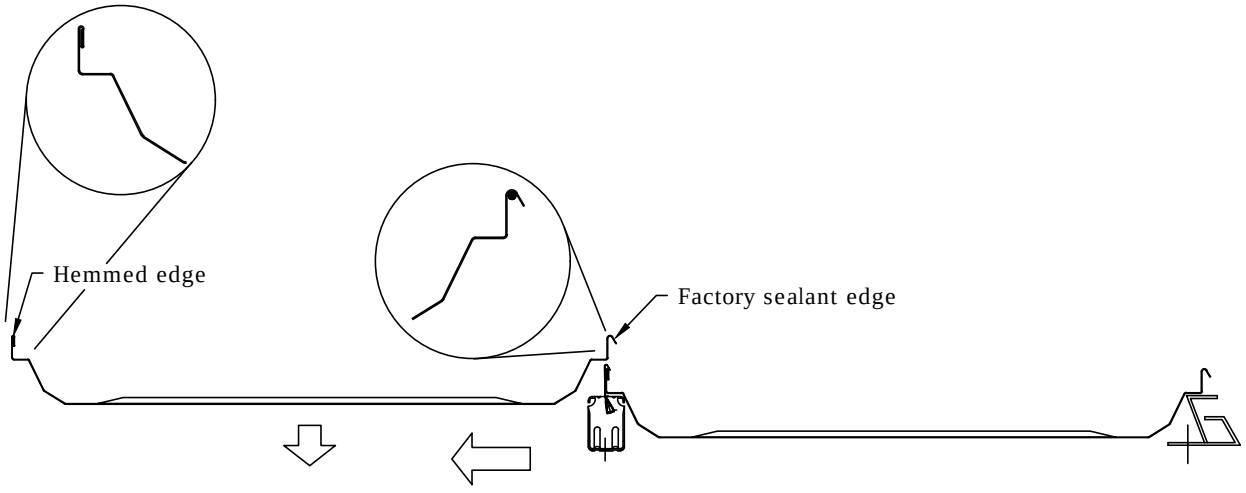
WARNING: Do not walk or stand on Butler Lite*Panl roof panels at anytime. Always place walkboards on or a barricade around Butler Lite*Panl roof panel area.

OVERVIEW

DIRECTION OF PANEL INSTALLATION

Panels are designed for installation so that the factory applied sealant (hooked) edges is to the right and the hemmed (straight) edge is to the left when on the ground and facing the eave of the roof. This enables the panels to engage the lockseam tabs and each other for forming the lockseam.





Panel Installation Sequence

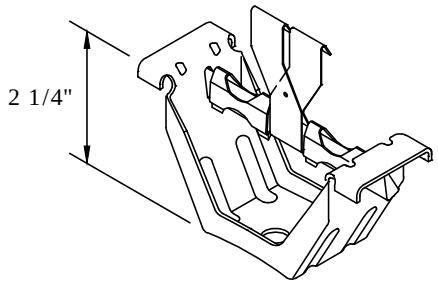
OVERVIEW

INSULATION SYSTEMS

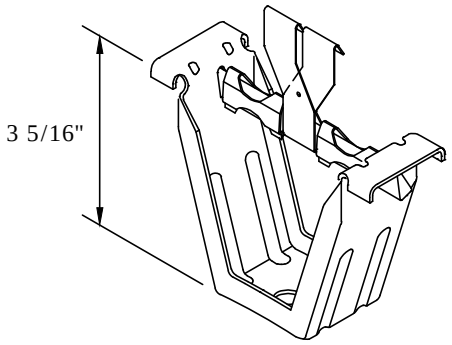
There are two insulation systems used with the MR-24 roof system:

- Basic blanket insulation system without thermal Block
- Basic blanket insulation system with thermal Block (Insulated Purlin System)

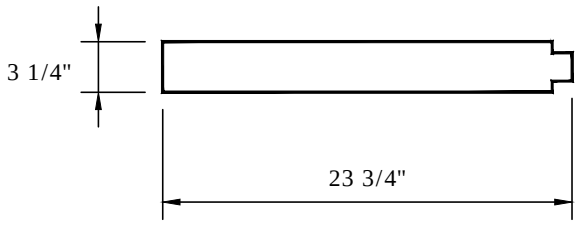
The Basic Blanket System uses a 2-1/4" high panel clip to support the roof panel. The blanket insulation is installed over and compressed between the roof structural members and the roof panels.



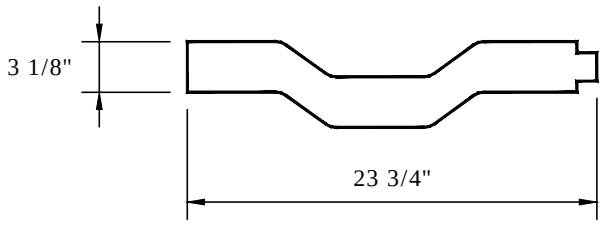
The Insulated Purlin System uses a 3-5/16" high panel clip to support the roof panel and the panel is raised above the roof structural. The blanket insulation is installed over the roof structurals in the same manner as the basic blanket system but in additon, a polystyrene foam block is installed on top of the blanket insulation on top of the balnket insulation over the roof structurals between the panel clips.



The thermal blocks provide additional insulation between the roof panels and structurals when the blanket insulation is compressed. Widespan thermal blocks are 3-1/4" wide by 23-3/4" long by 3/4" thick. Note that the shape of the Landmark structural system spacer block is different so that it has complete bearing on the wider truss purlin flange. The Landmark structural system thermal block is 3/4" thick.



Widespan Structural System

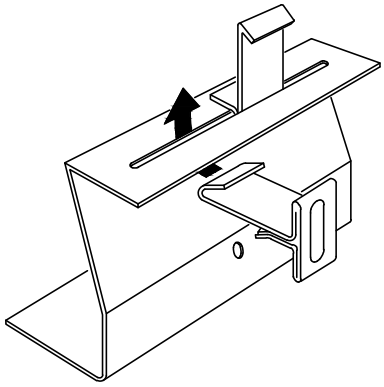


Landmark Structural System

TRIM CLIPS

Two lock seam tabs must be field assembled to the trim clips and are used to anchor the panel and the endwall trim or gable trim transition when formed into the lockseam. The two tabs are always installed so the lip of the tab is to the right when on the ground and facing the eave of the building. Insert tabs through the slot from beneath the clip and secure in place by bending the short leg of the tab down against the clip. Adjust the tabs so they are butted against each other and centered in the slot.

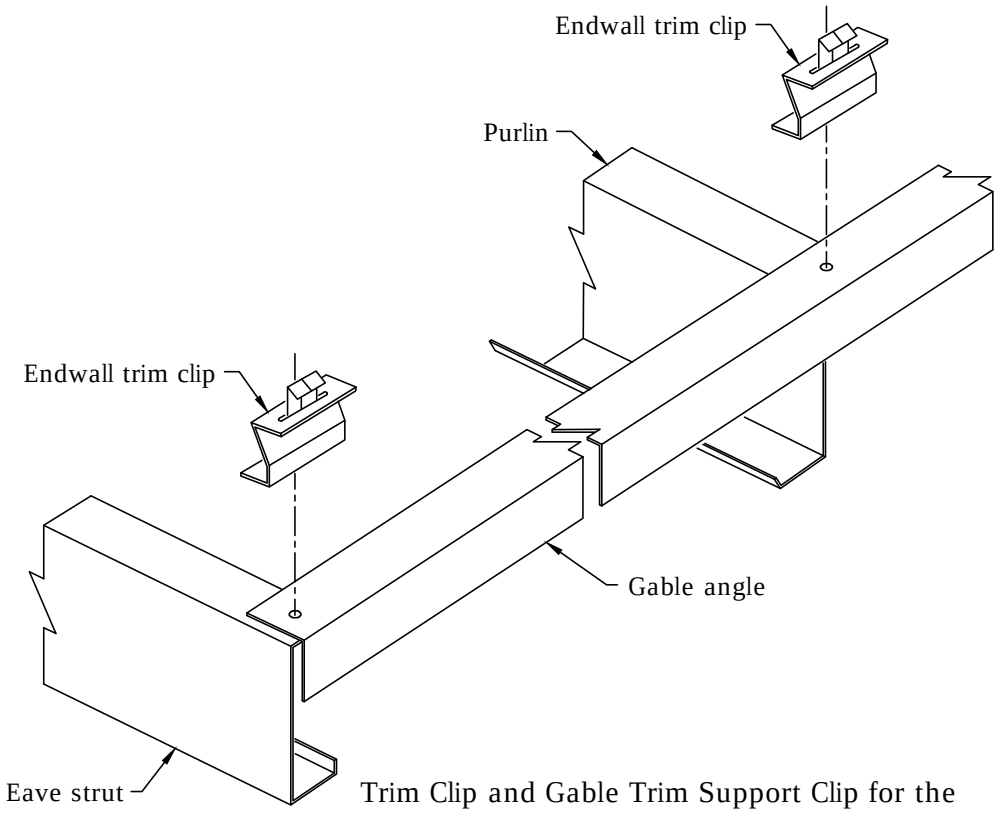
These tabs must be assembled to the endwall trim clips.



Tab Assembly

ENDWALL TRIM CLIPS

The endwall trim clips installed with 1/2" thin head bolt and nut at the roof structural to gable angle or overhang rake channel location. The gable trim support is used at the eave member to gable angle location.

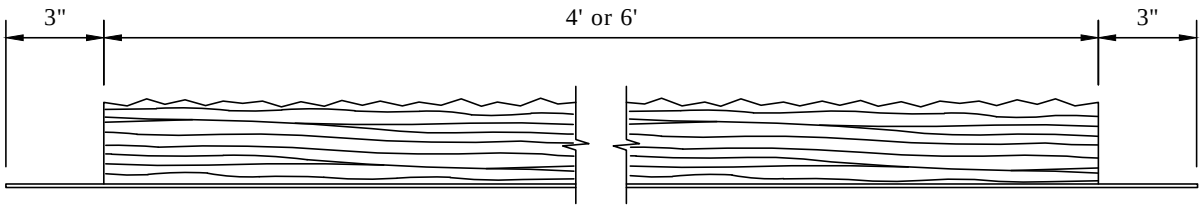


Trim Clip and Gable Trim Support Clip for the Basic Insulation System

INSULATION

Faced fiberglass blanket insulation with a minimum 2" thickness and a maximum 6" thickness is required over the roof sturcturals for all MR-24 roof system installations.

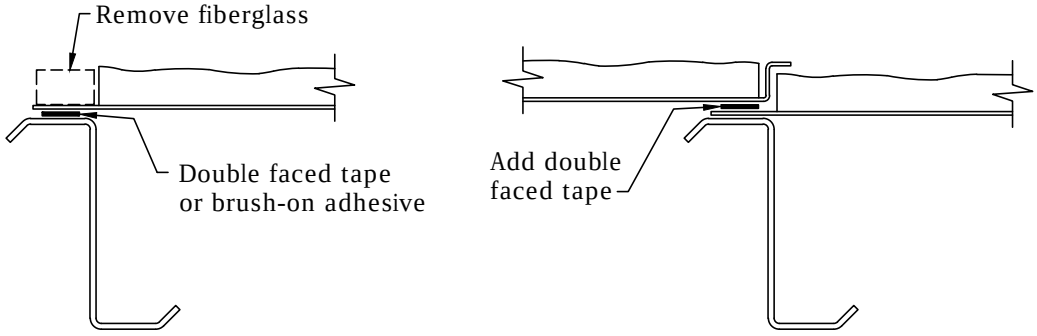
It is recommended that 4' or 6' wide rolls be used, depending upon facing and or thickness specified. Two tabs are required for stapling rolled insulation together.



WARNING: Insulation has no load bearing strength and can not support a worker's weight. Always use fall protection.

Roll lengths normally are ordered to cover half of the building, from eave structural to the opposite ridge purlin. When they are not long enough to do this because of building width being too wide, a length splice must be made.

Making end splices of insulation over a roof structural is made easy by using double faced tape or brush on adhesive. Using double faced tape to hold the insulation tight to the eave member and ridge structural will not require the use of any weighting or clamping.



Step 1 Step 2

Suggested Method for Length Splice

INSULATION

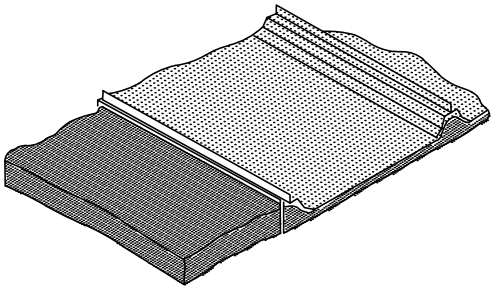
STAPLING PROCEDURE

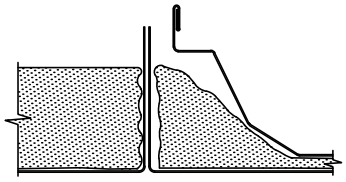
It is essential that the insulation facing provide a continuous complete vapor retarder to prevent airborne moisture from condensing within the insulation and on inside surface of the panel.

The adjacent facing tabs are sealed together at the joints by folding and stapling. A good quality plier-type stapler (such as Bostitch Model P6-8 with with 3/8" STH 5019 staples or equivalent) should be used.

WARNING: Stapling procedure requires work at the leading edge of the roof. Always use fall protection.

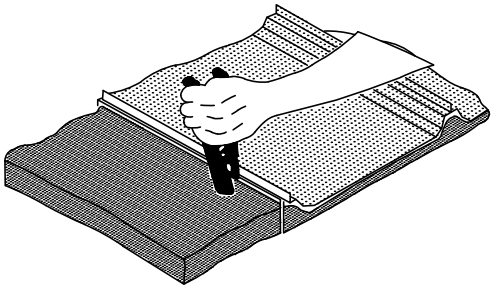
1

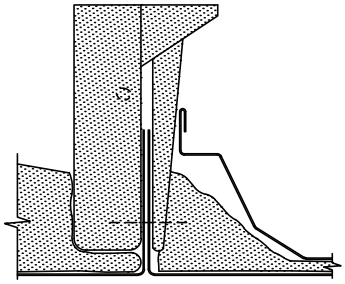




Stapling is done from the topside as the insulation is applied. Pull the adjoining facing tabs outward at the joint and align the top edges of the two tabs.

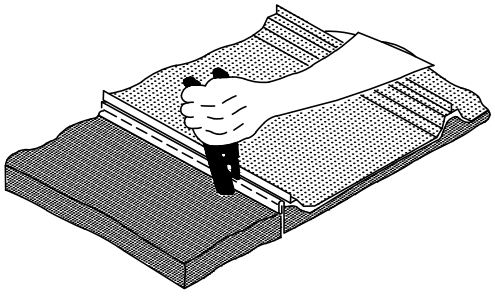
2

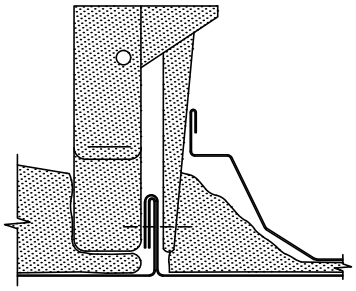




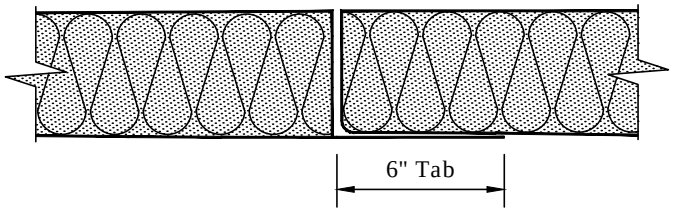
Staple the two tabs together approximately 1/2" from the bottom on 8" to 10" centers.

3





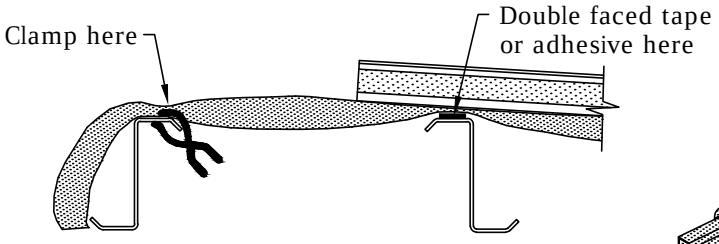
Fold the tab over and staple again on 4" centers.



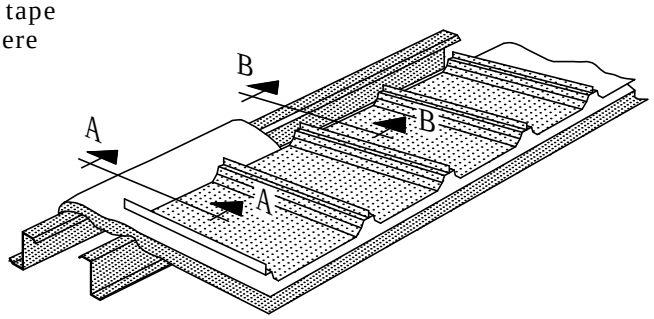
Insulation Side Lap Detail - (Optional)

INSULATION

INSTALLATION PROCEDURE: AT RIDGE WITHOUT INTERIOR RIDGE TRIM



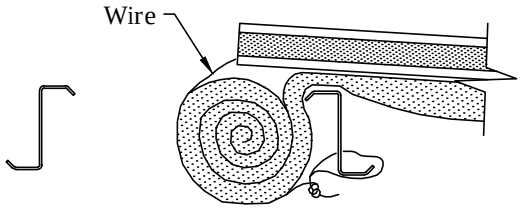
Widespan Structural System



SECTION A-A

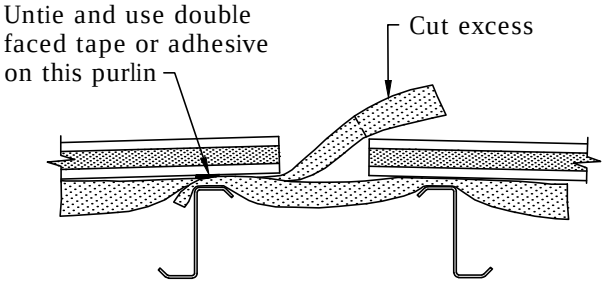
Temporarily clamp insulation to opposite ridge purlin. Intall roof panel.

WARNING: Insulation has no load bearing strength and cannot support a worker's weight. Always use fall protection.

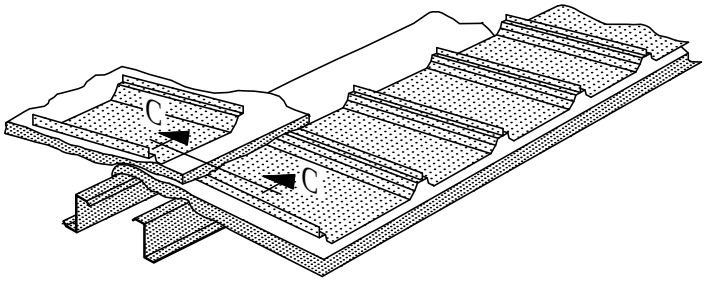


SECTION B-B

After roof panel has been installed, roll up excess insulation and wire to purlin and roof panel to prevent damge from wind or weather.



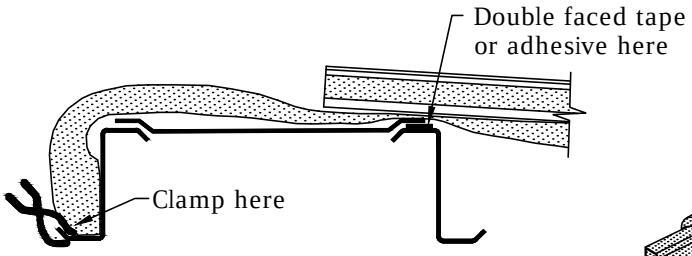
SECTION C-C



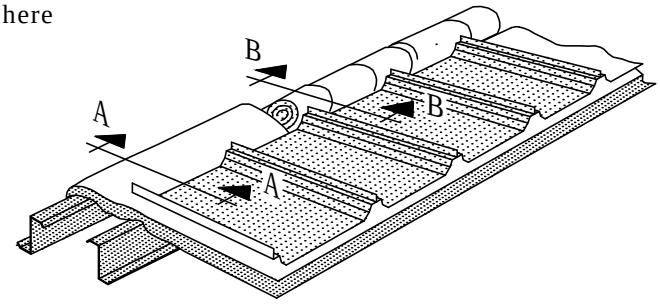
Pull insulation this side to past ridge. Stretch and cut after panel is in place.

INSULATION

INSTALLATION PROCEDURE: AT RIDGE WITH INTERIOR RIDGE TRIM



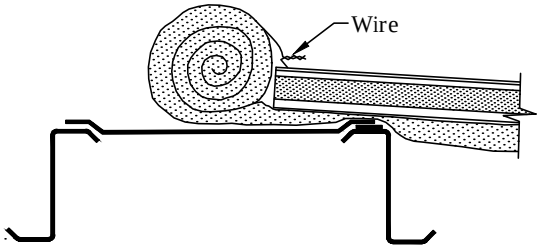
Widespan Structural System



SECTION A-A

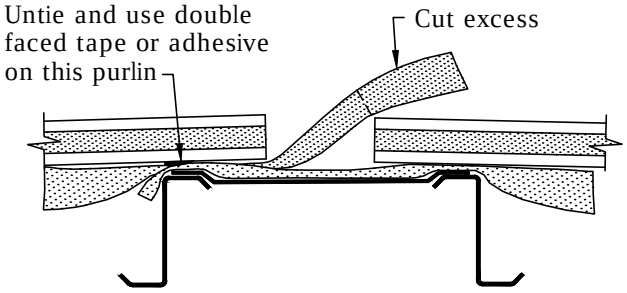
Temporarily clamp insulation to opposite ridge purlin. Intall roof panel.

WARNING: Insulation has no load bearing strength and cannot support a worker's weight. Always use fall protection.

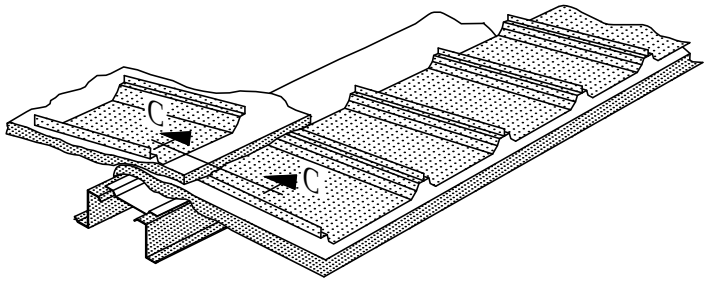


SECTION B-B

After roof panel has been installed, roll up excess insulation and wire to purlin and roof panel to prevent damge from wind or weather.



SECTION C-C

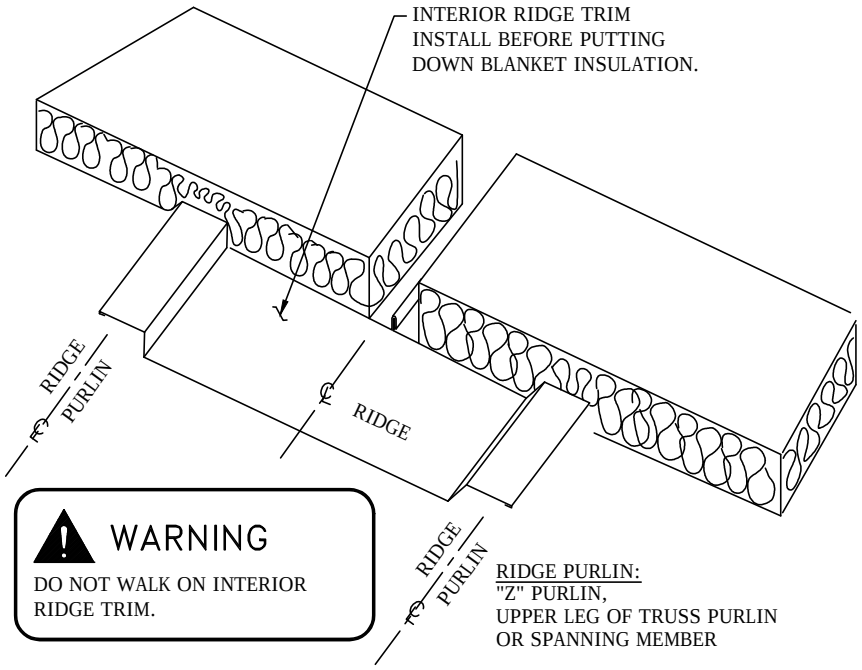


Pull insulation this side to past ridge. Strech and cut after panel is in place.

INSULATION

INTERIOR RIDGE TRIM

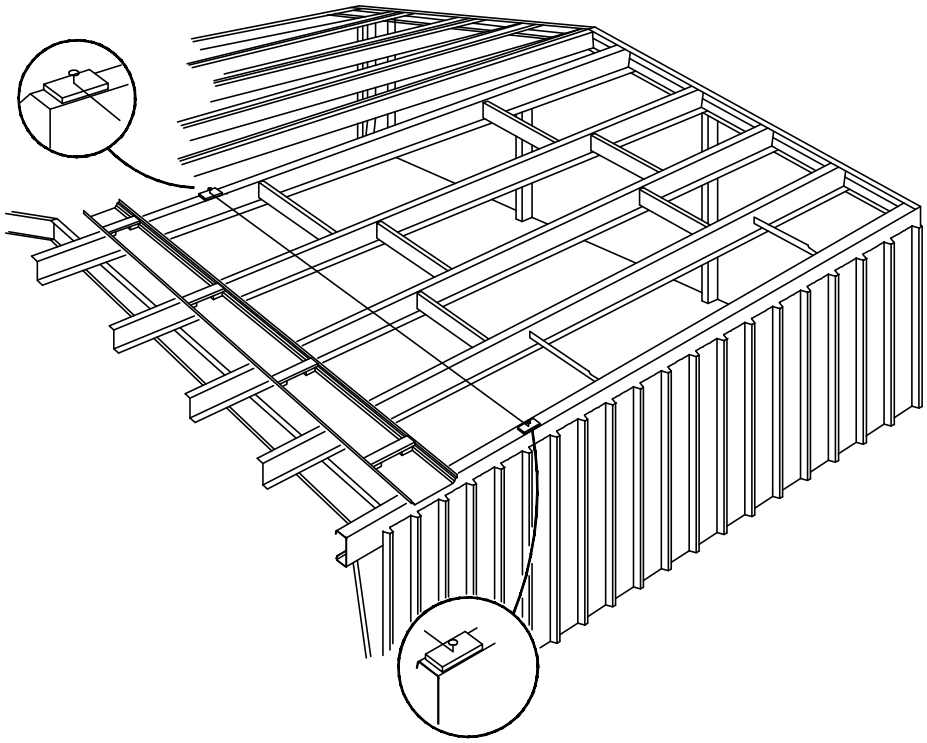
Interior ridge trim is furnished to contain the insulation between purlins at the ridge of the building. The interior ridge trim parts must be in place before installing the insulation. Use cartridge type Panlastic sealant at lap. Follow the drawings to position Scrubolt fasteners so they will not interfere with panel clip installation. (Refer to planograph drawing 1080573 for more information)



INSTALLATION OF PANELS

The general sequence of roof installation followed in this manual include:

1. Installation of insulation and roof panels
2. Installation of perimeter trim which includes endwall trim.
3. Installation of ridge cover.



The installation procedures covered by the manual are general in nature and cover a basic MR-24 roof system. Other conditions, such as transitions, are covered in the detailed installation drawings and should be referred to prior to beginning work on the roof. In most instances, wall panels will have been previously installed.

Prior to the actual installation of the MR-24 roof system, the structure must be properly plumbed and squared, with the secondary roof members straight and panel attachment holes properly aligned. This may be accomplished by using the dryline technique.

Dryline Technique

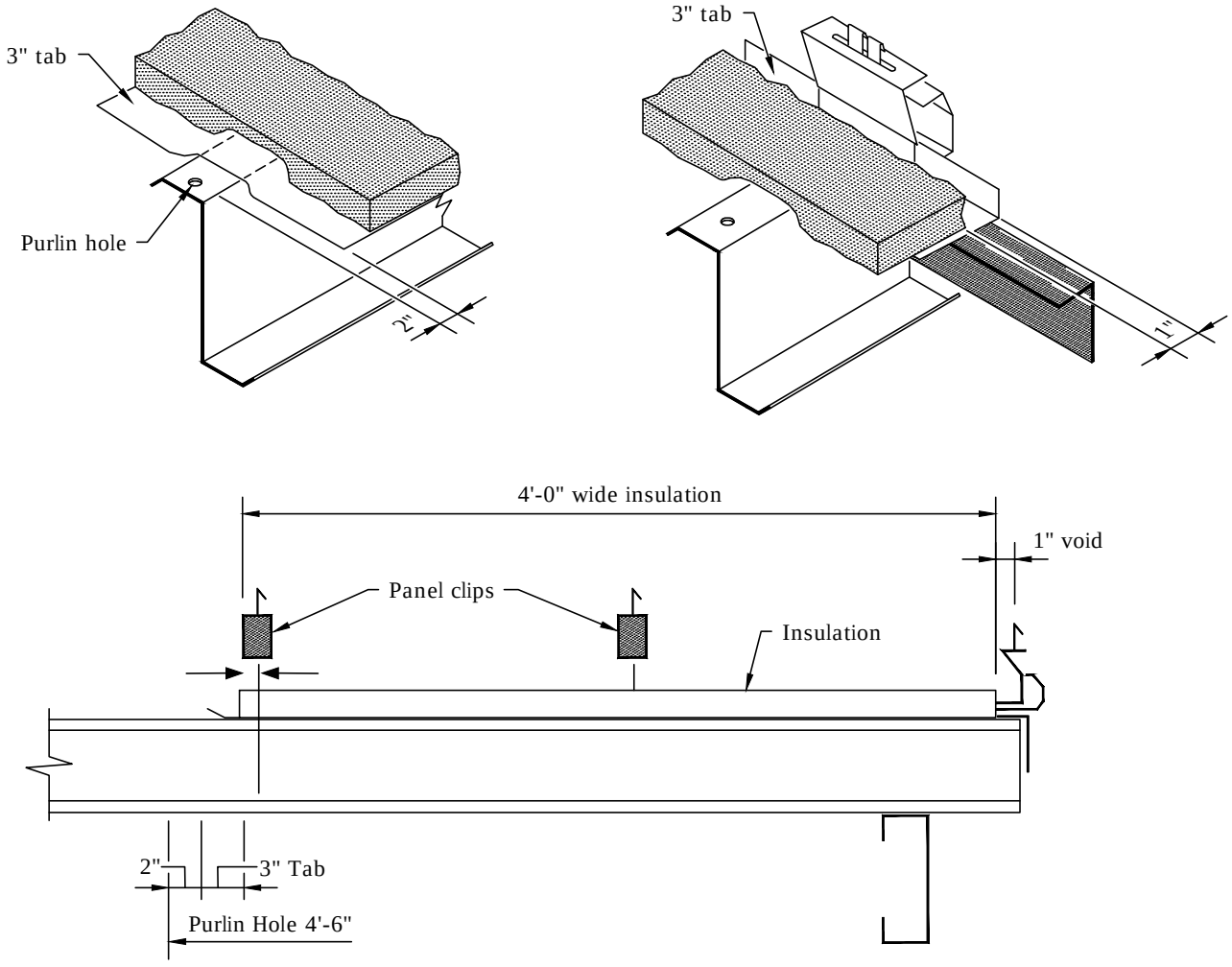
Attach a dryline to the eave strut and the ridge purlin. Select identical holes in these members then sight along the line to make sure all purlin holes are directly under the line. If not, recheck the frame for any sweep or dogleg condition.

WARNING: Insulation has no load bearing strength and cannot support a worker's weight. Always use fall protection.

INSTALLATION OF PANELS

INSULATION DETAIL

A standard 4' wide roll can be used for the starting row of insulation but requires careful positioning. The insulation must be laid so the fiberglass portion of the insulation will clear the panel clips which are installed on 2' centers. This can be gauged by aligning the edge of the tab 2" from the next hole in the purlin past the panel clip attachment hole. This will leave a small void (approx. 1") in the roof insulation at the endwall which can be filled in later by tucking in insulation from the overlap of the endwall insulation.

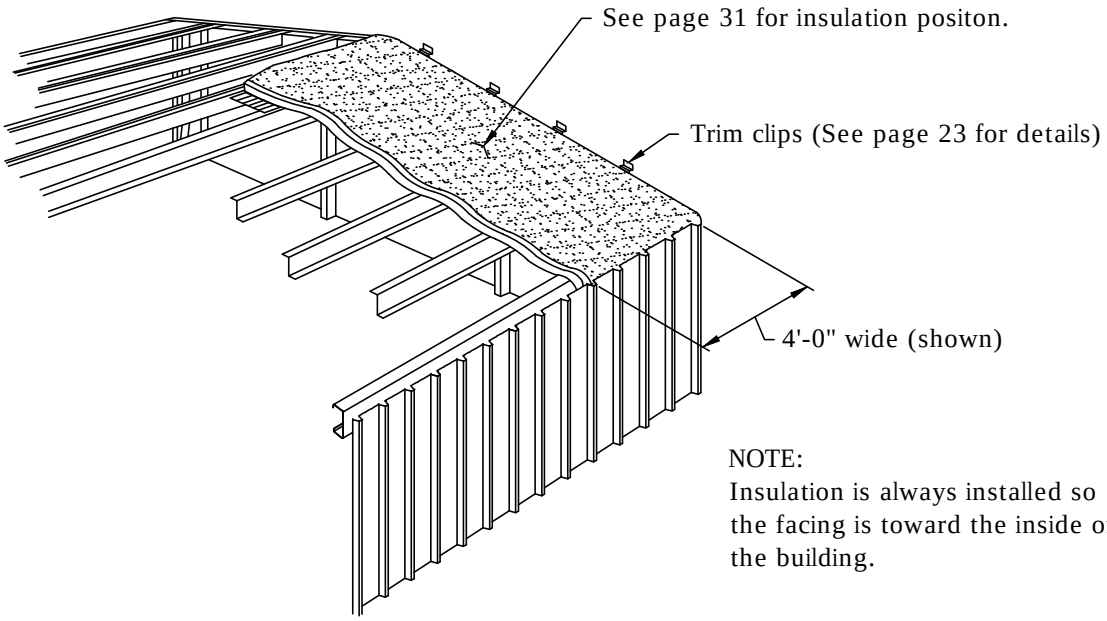


Detail at Endwall Using 4' Wide Insulation

This detail shows the position of the panel clips in relation to the with of the insulation only. Panel clips are installed as the panels are being placed and not out in front of the roof paneling activity.

WARNING: Insulation has no load bearing strength and cannot support a worker's weight. Always use fall protection.

INSULATION DETAIL (Continued)



NOTE:
Insulation is always installed so the facing is toward the inside of the building.

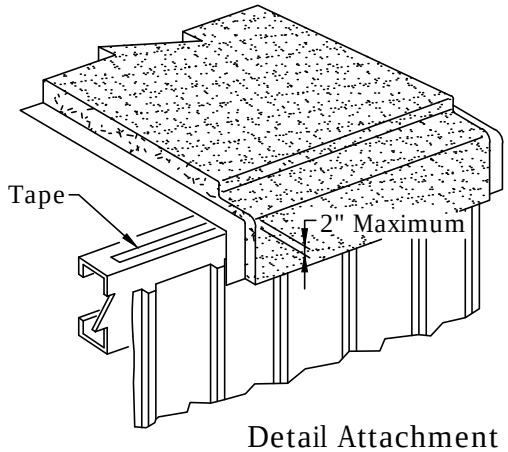
WARNING: Insulation has no load bearing strength and cannot support a worker's weight. Always use fall protection.

LAYING THE FIRST ROLL OF INSULATION

Start laying the insulation at the eave and work to the ridge. Position the insulation so that it spans both ridge purlins with an approximate 6" overhag.

When a 4' starter roll is used, align the edge so the fiberglass is 1" from the edge of the gable angle or rake channel. See detail on page 31.

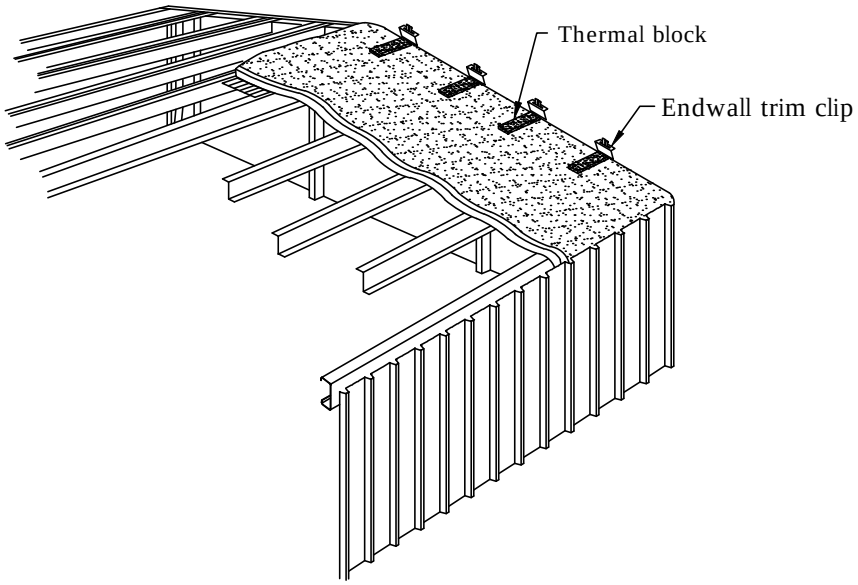
Using double-faced tape, adhesive, or clamp, attach the insulation to the opposite ridge purlin and unroll the insulation across the roof structurals to the eave. Make sure the insulation is properly positioned and in a straight line.



NOTE:
Do not use over 2" thick insulation at eave strut to prevent dimpling of roof panels around fasterners. Peel off excess insulation thicknes over eave strut.

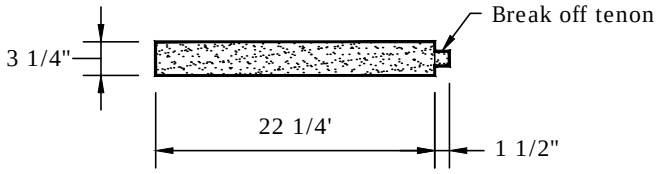
Detail Attachment of Insulation to Eave Member

THERMAL BLOCK INSTALLATION



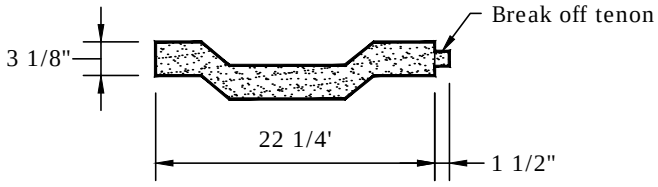
WARNING: Insulation has no load bearing strength and cannot support a worker's weight. Always use fall protection.

The Widespan structural system thermal block is straight with a tenon at one end that's inserted into the clip. The Landmark building system version has the same tenon but the block is curved so it can distribute panel load to both sides of the truss purlin top chord.



Z-Purlin Structural System Thermal Block

These blocks are standard on the Landmark structural system and optional on the Widespan structural system.

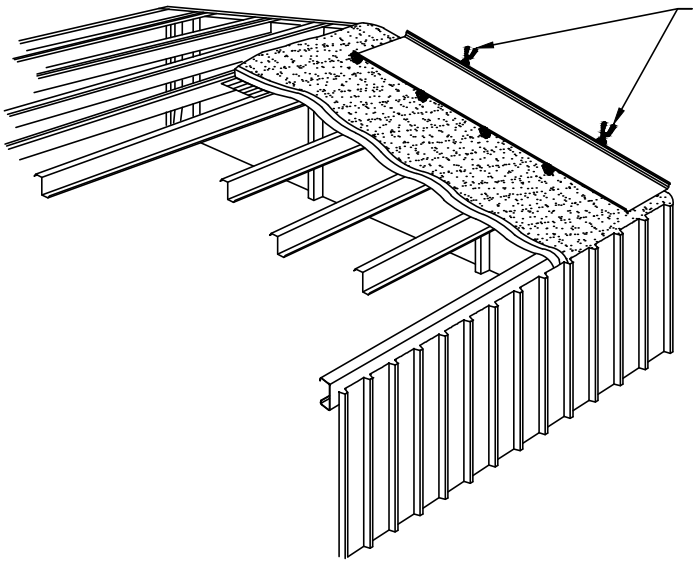


Truss Structural System Thermal Block

Place thermal blocks over the insulation at each purlin location. Thermal blocks insulate the purlin and support the panel. Only at the starting row of panels is it necessary to break the tenon off of the thermal block to clear the trim clip.

INSTALLATION OF PANELS

INSTALLATION OF FIRST PANEL



WARNING: Always use fall protection when installing panels.

To install the first panel, position the right hand edge of the panel over the trim clip and, using an aligning punch, align the holes in the panel with the holes in the eave member and fasten.

Install panel clips by hooking the tab over the panel edge and rotating it into position. An aligning punch is used to find the hole in the roof structural prior to placing the clip. Then the punch can be used to pin the clip in position, with a follow-up workman installing the clip to roof structural Scrubolt fastener.

Install panel clips from the top end of the panel towards the eave to control the panel alignment.

Before installing adjacent panels, apply a bead of gun grade type Panlastic sealant vertically on the inside face of the standing edge of the panel, about 1" from the end. This seals the end of the standing seam for protection in the event of gutter overflow and eave icing.

IMPORTANT: To avoid wind damage, always secure the edge of the starting panel to the trim clips with clamps or locking pliers, or by placing weight on the panel, since seaming of this panel will not be completed until the endwall trim is installed.

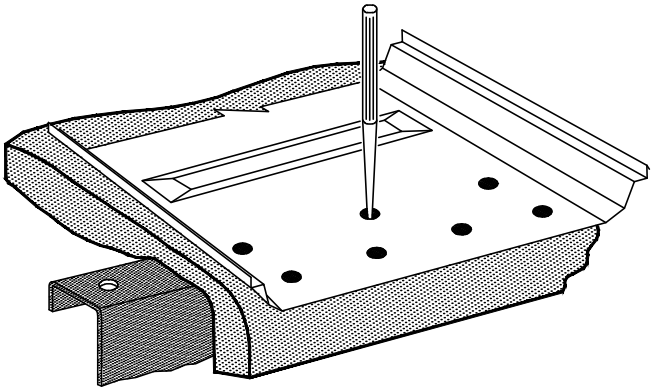
If single panels eave-to-ridge are being installed on the roof, and a 4' starter roll of insulation has been used, the second panel can now be installed.

After installation of the first four runs of panels is completed and lock-seamed together, begin installing panels that have been unloaded on the completed portion of the roof working toward the preloaded bundles.

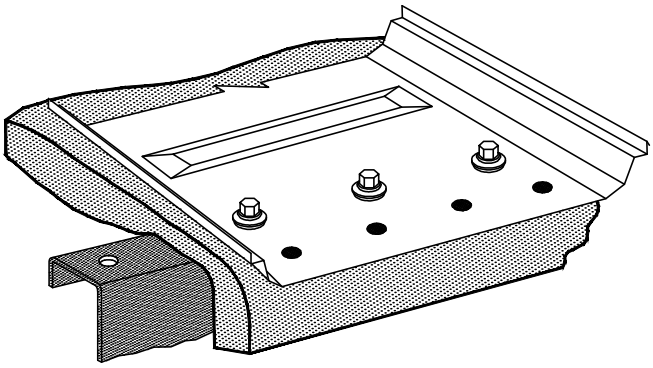
The seaming operation must follow panel installation as closely as possible.

INSTALLATION OF PANELS

EAVE PANEL DETAIL

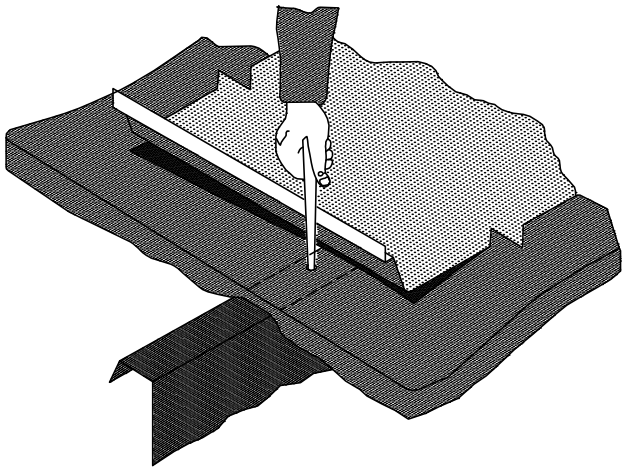


Using a sharpened tapered punch, align the holes in the panel with the holes in the eave member. Then fasten with (3) Stainless Steel Scrubolt fasteners (095984).

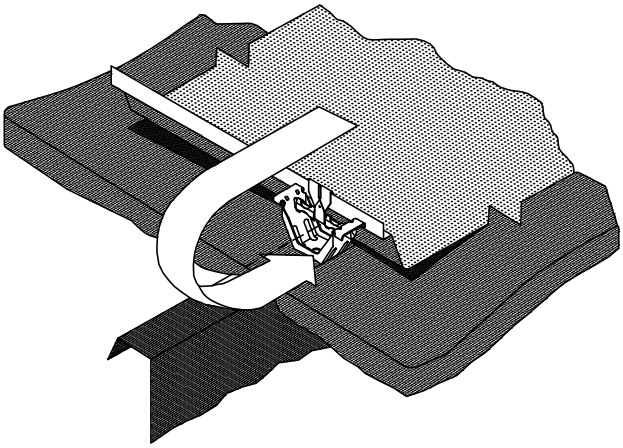


INSTALLATION OF PANELS

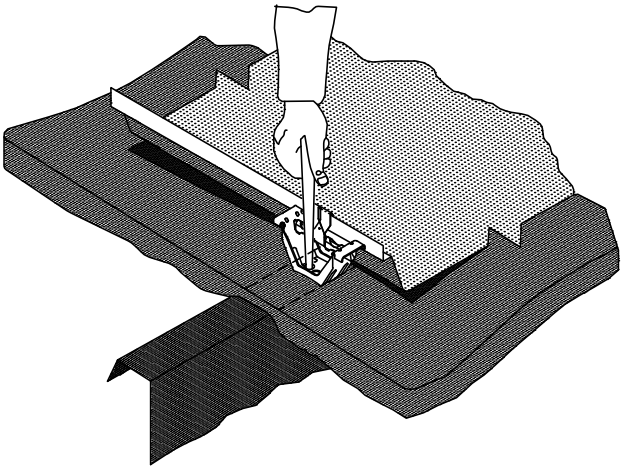
PANEL CLIP DETAIL



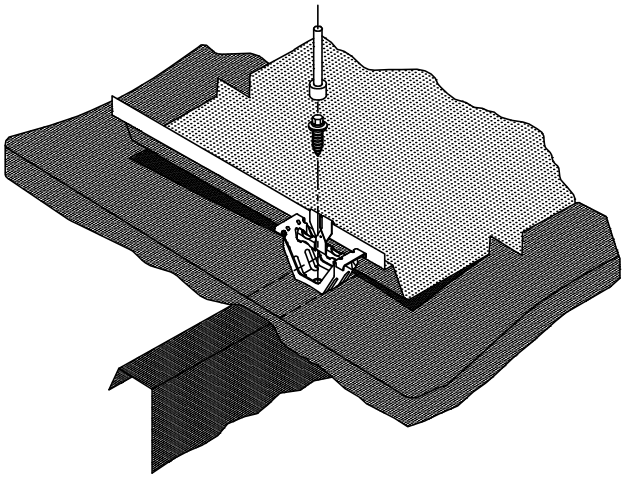
1. Use the same punch to find the hole in the roof structural through insulation.



2. Then remove the punch and install panel clips by hooking the tab over the panel edge and rotating it into position.



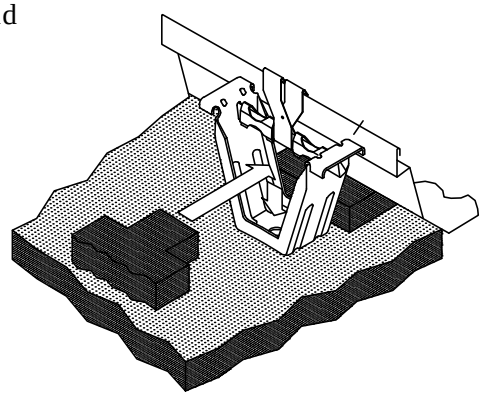
3. Temporarily pin the clip in position with punch.

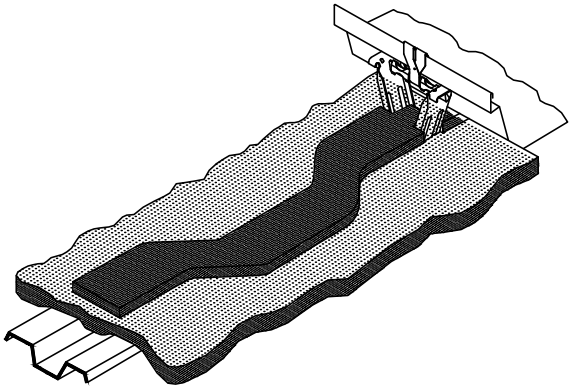


4. Next, workman removes punch and installs Scrubolt fastener.

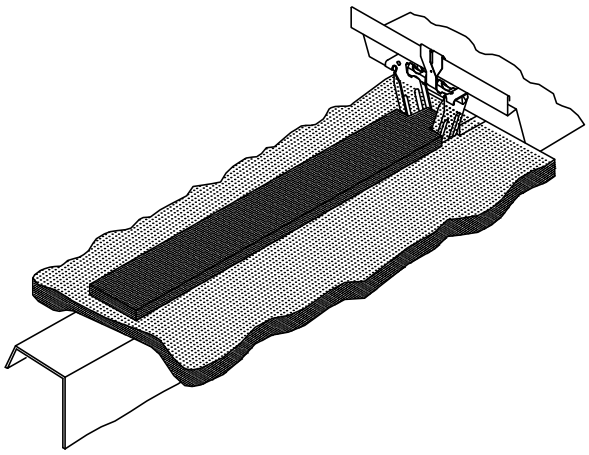
SPACER BLOCK DETAIL

Insert spacer block tenon fully into panel clip and push downward.





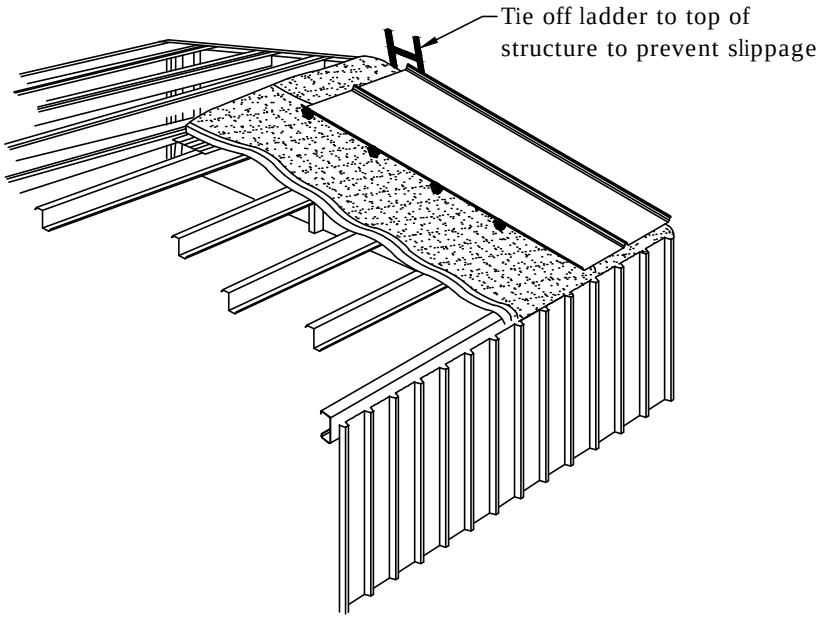
Truss Structural System Thermal Block Installation



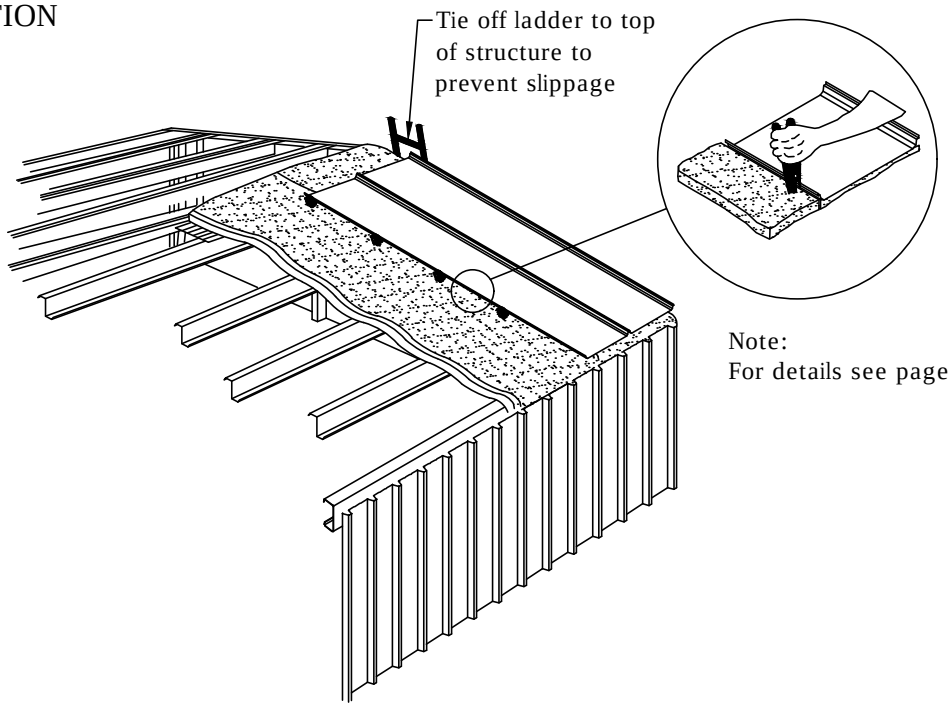
Z-Purlin Structural System Thermal Block Installation

INSTALLATION OF PANELS

POSITION SECOND INSULATION ROLL



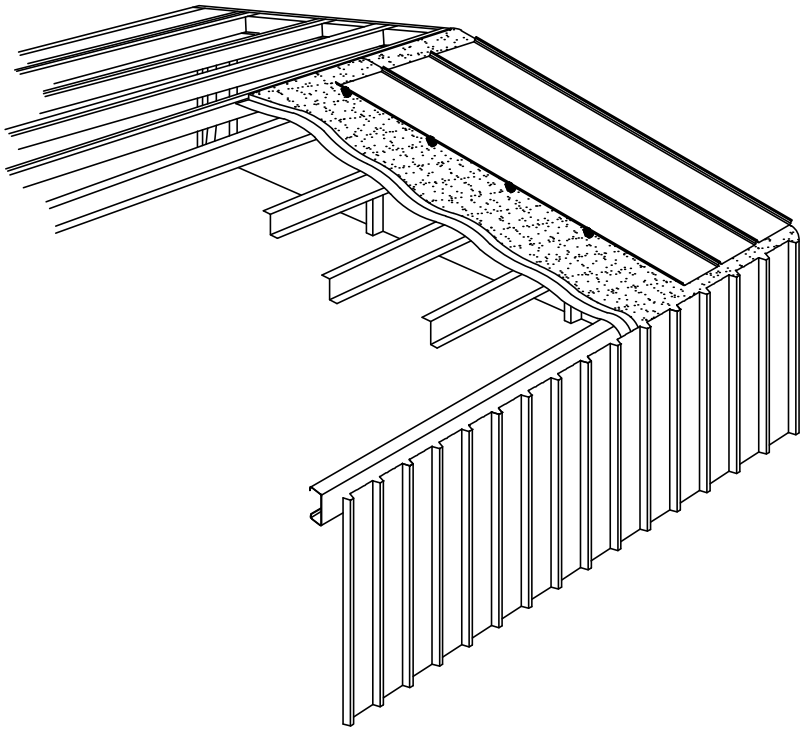
STAPLING INSULATION



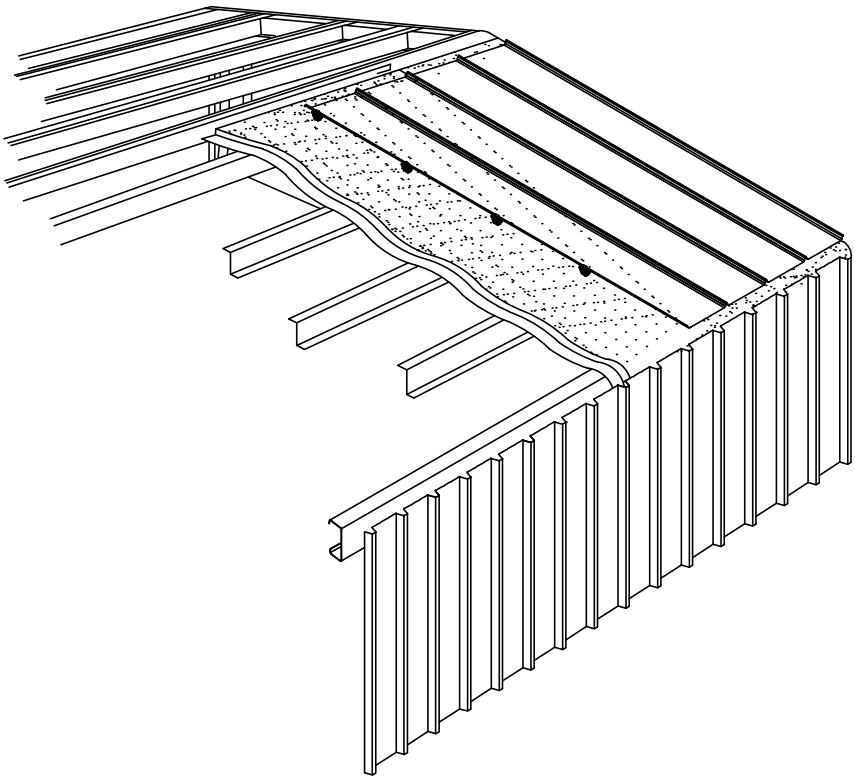
Note:
For details see page 26.

INSTALLATION OF PANELS

INSTALLING THE THIRD PANEL

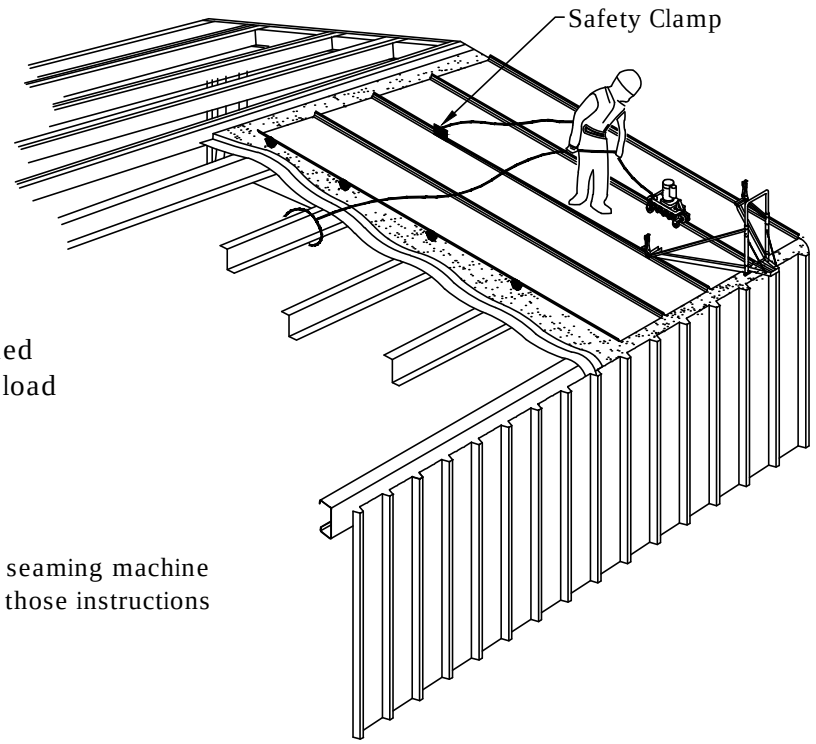


INSTALLING THE FOURTH PANEL



INSTALLATION OF PANELS

SEAMING THE FIRST FOUR PANELS

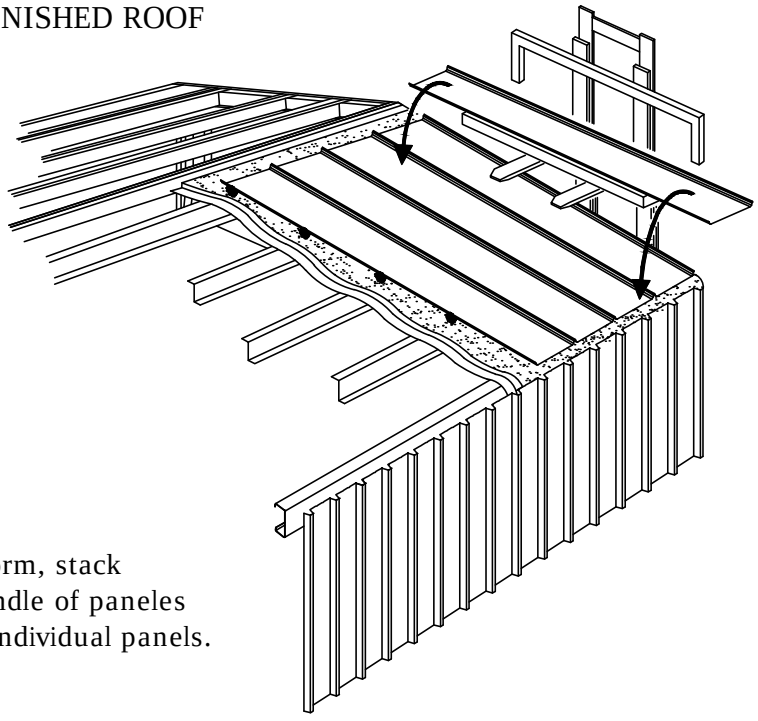


These (4) panels should be seamed together to make a safe place to load other panels and parts.

Note:
For details refer to Roof Runner seaming machine Operations on pages 43-53 and those instructions provided with the seamer.

WARNING: For safety, the operator of the seamer must always use fall protection. Always use a starting platform with the seamer.

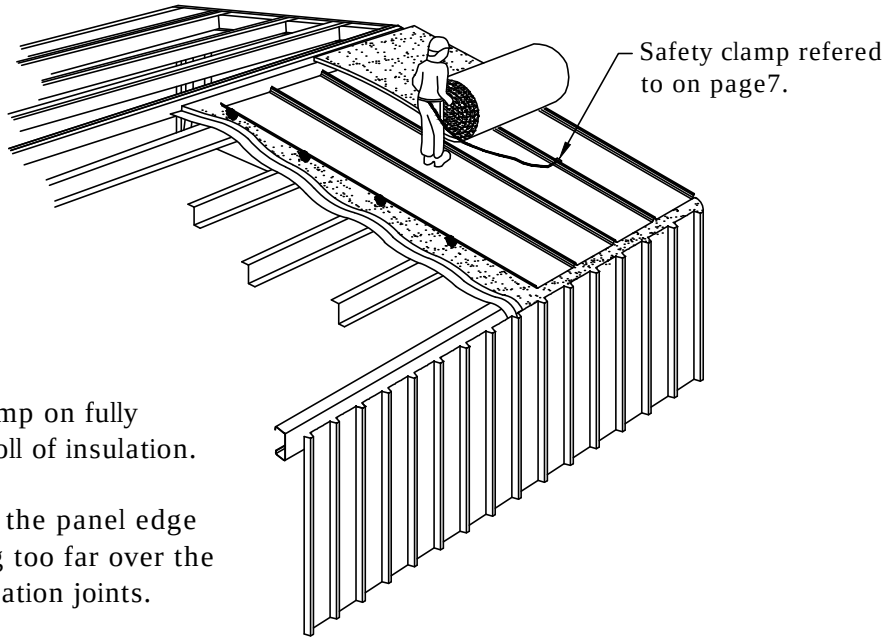
STACK REMAINING PANELS ON FINISHED ROOF



Using a crane or forklift with platform, stack remaining panels from starting bundle of paneles on finished side of roof and carry individual panels.

INSTALLATION OF PANELS

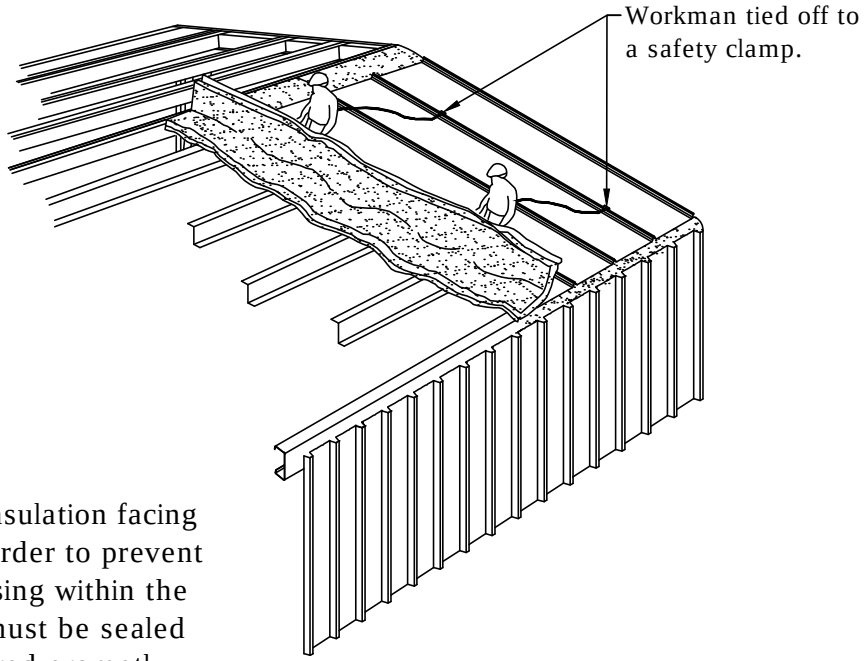
UNROLLING THE NEXT INSULATION ROLL



Workman tied off to a safety clamp on fully seamed panels unrolls another roll of insulation.

Keeping the insulation joint near the panel edge minimizes the hazard of reaching too far over the edge of the roof to seal the insulation joints.

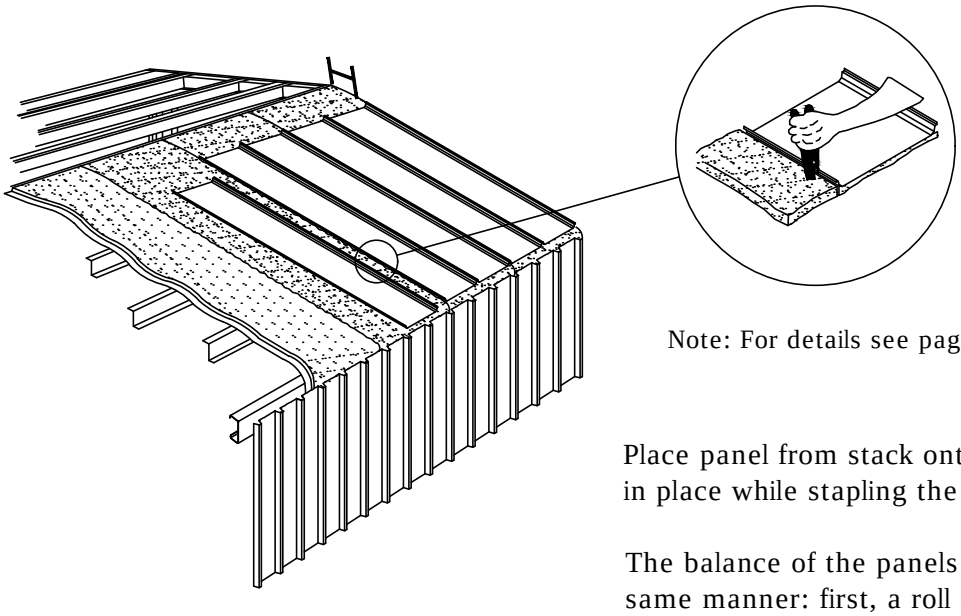
SHAKE OUT INSULATION INTO POSITION



NOTE: It is essential that the insulation facing provide a continuous vapor retarder to prevent airborne moisture from condensing within the insulation. All insulation joints must be sealed properly and any damage repaired promptly. Rolled and stapled tabs or self-adhesive tabs may be used for sealing joint.

INSTALLATION OF PANELS

CONTINUE INSTALLING ROOF PANELS



Note: For details see page 26.

Place panel from stack onto the insulation to hold in place while stapling the joint.

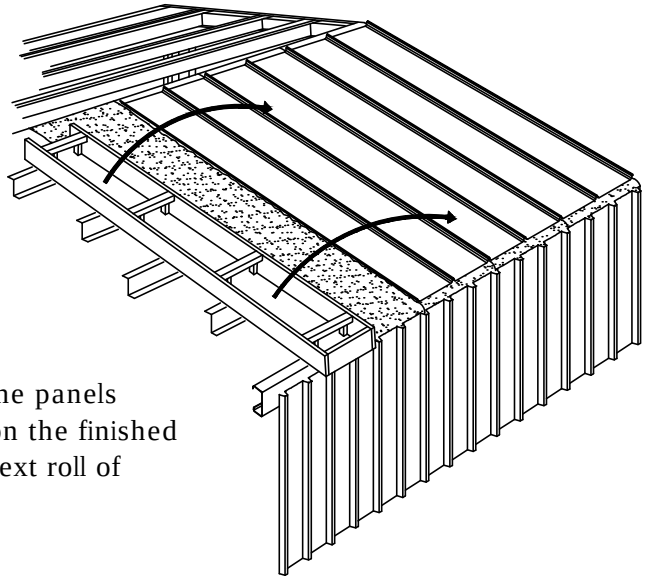
The balance of the panels are installed in the same manner: first, a roll of insulation; then, the thermal blocks when specified; the roof panel; sealant; and, finally, the panel clips at each purlin locations.

The seaming operation must follow panel installation as closely as possible.

WORK TO THE PRELOADED CRATE OF PANELS

Installed panels must be lock seamed before loading additional panels and parts on the roof. All panels must be seamed together before leaving each day.

The first crate of panels that were hand lined or lifted onto the roof should take the roofing activities up to the crate of panels that were preloaded at the frame line.



This crate can now be opened and the panels removed and stacked over a frame on the finished roof, back far enough to unroll the next roll of insulation.

ROOF RUNNER SEAMING MACHINE OPERATIONS

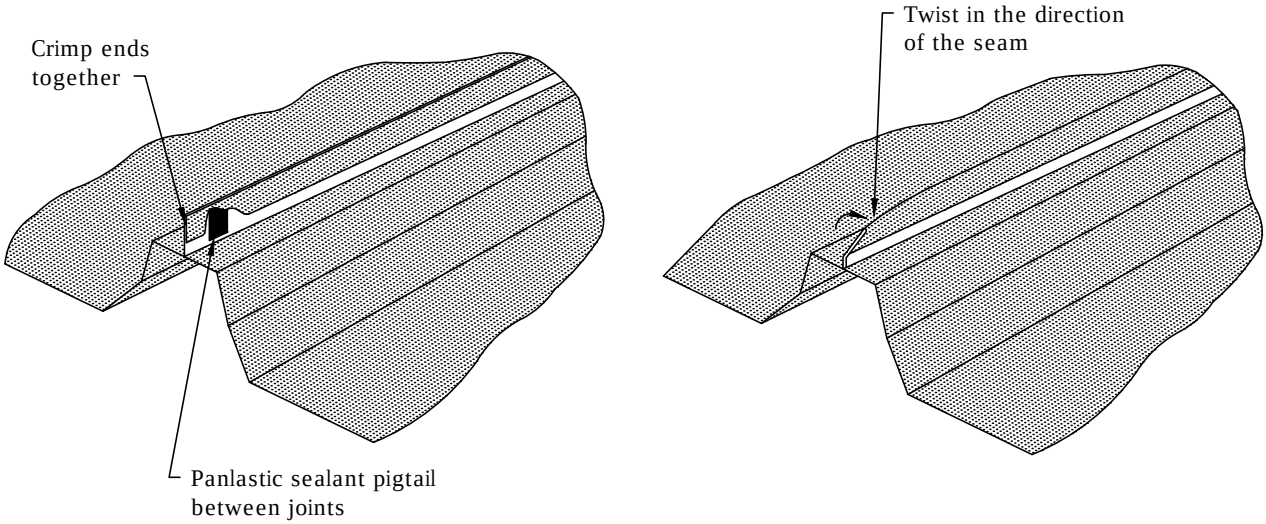
Seaming with the seamer can begin as soon as sufficient rows of panels are in place to permit operation of the seamer without interference with the crew laying the panels.

Important: Refer to the operating instructions for the seamer and starting platform shipped with each seamer and starting platform for more specific information on maintenance, other operation tips, etc.

WARNING: Panels not fully seamed can collapse or slide out from under you. Always use fall protection when installing panels or working near roof edges. Make sure seaming follows laying of panels as closely as possible.

1. Panels and clips tabs must be properly engaged and remain in position during the seaming operation. If necessary, use locking pliers to hold the panels in position.

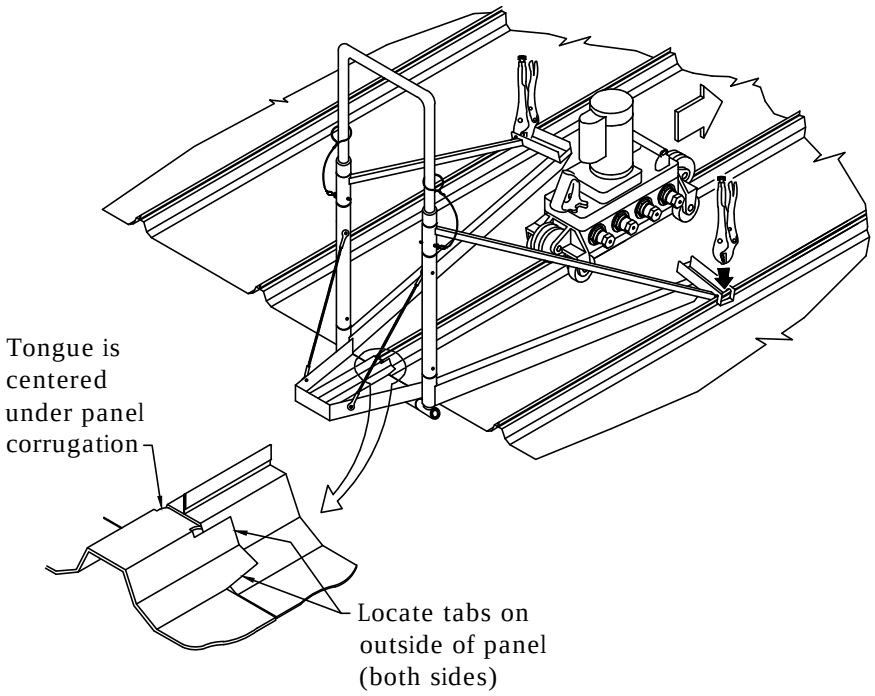
   Before beginning the seaming operation, the ends of the panels must be crimped together, twisting the end slightly in the direction the seam. Check the pigtail of Panlastic sealant in the seam lap.



Panel Crimp Detail (before seaming)

(2) The seamer must be parallel to the roof when starting. A starting platform, temporarily installed at the eave, is used to hold the machine in the correct starting position beyond the eave of the building.

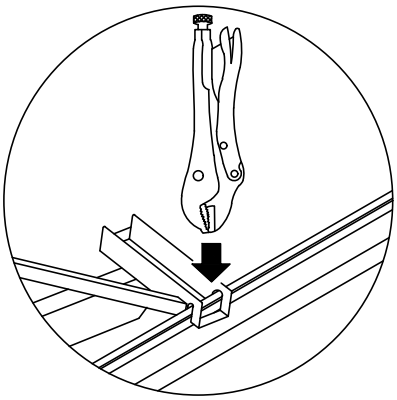
Insert the corrugation support of the starting platform into the panel corrugation at the eave and rotate the Platform down onto the panels.



SECURING THE SEAMER PLATFORM

WARNING: Never step on platform pan. Always use fall protection.

(3) Clamp locking pliers onto panel. Pliers are to be snug against bottom and up slope leg of gate channel.

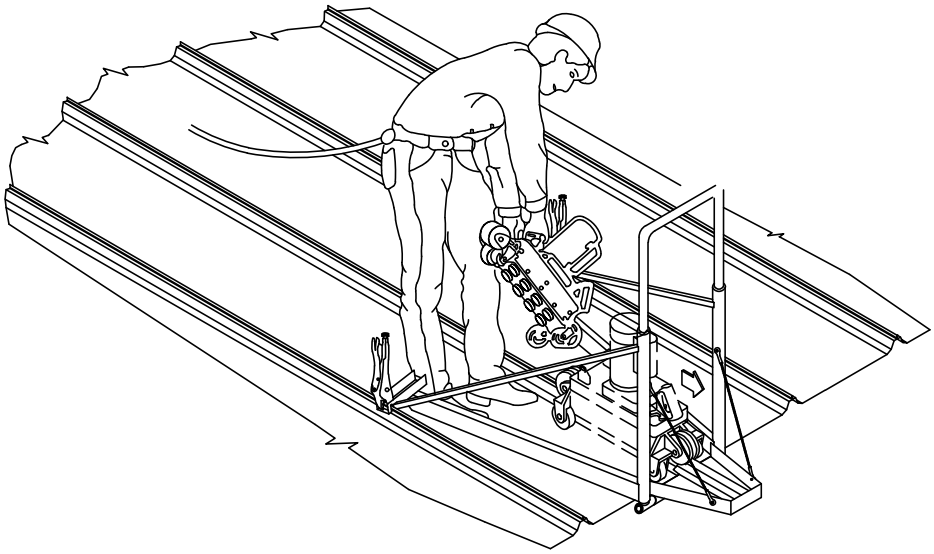


Locate seam in channel slot and secure to roof panel with locking pliers

SECURING THE SEAMER PLATFORM

WARNING: Locking pliers (not supplied by Butler) must be in good condition and adjusted to resist a good hard pull (60 pounds).

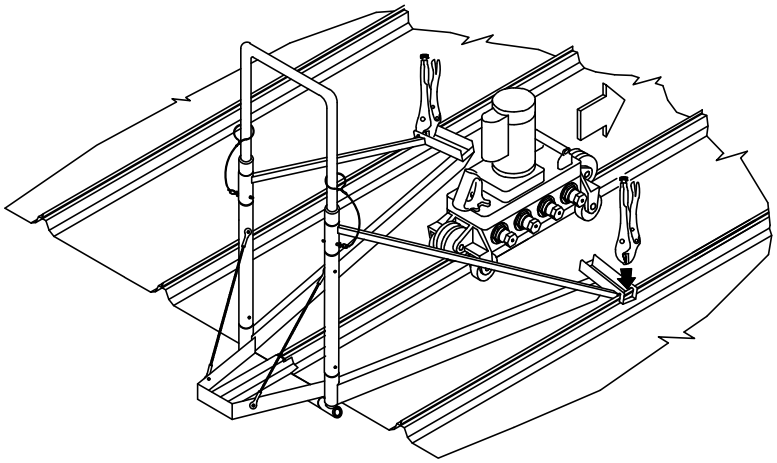
(4) With the left foot on the panel directly over the eave structural and the right toe only on the platform leg, place the rear nylon wheel of the seamer on the corrugation. Roll the seamer out onto the platform keeping body weight upslope of the left leg.



WARNING: Never straddle the platform or counterbalance the seamer with your weight.

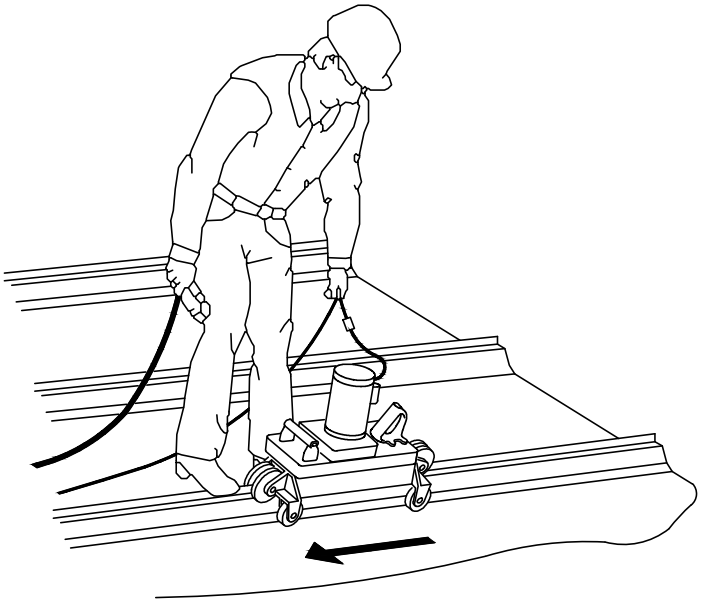
5 Place the seamer on the starting platform, centering the front guide wheel on the corrugation. Start the motor and pull the machine onto the panel; when the front forming wheel engage, the seamer will self-propel.

WARNING: Double check the secureness of locking pliers.



WARNING: Never straddle the platform or counterbalance the seamer with your weight.

6 When the seamer is fully on the panels, quickly remove the locking pliers and swing the starting platform gate aside so that the seamer can pass through. This allows seaming to continue without unplugging power cord. After passing the end of the platform, move the platform the panel flat-fully on the roof-for additonal stability.



WARNING: Never tie power cords together or to the seamer.

Caution: Keep the path of the seamer clear at all times and power cords free of entanglement. A non-locking plug is supplied so that it will unplug itself should the power cord become entangled. Do not defeat this safety feature by tying the power cord to the motor lead or to the seamer. Additionally, towing of power cord(s) can cause improper seams.

7 The operator's working position is slightly ahead and to the right of the seamer -he should keep his eye on the front guide wheel and if it stops turning, the seamer could ride up off the seam. Hand pressure on the front handle will usually correct this; if not, shut off motor and determine the problem before proceeding.

At all panel end laps, press down on the machine as required to keep it from raising up from the seam as it goes over the panel strap.

WARNING: Do not "ride" the seamer or block vents on the motor in any way.

(8) As the seamer runs off the panels at the ridge, hold it by the front handle to keep it parallel with the roof. When the seaming is complete, the seamer will no longer self-propel and the rear of the seamer will be supported by the rear guide wheel.

Turn off and lift seamer by the handles and set it back on the roof, turning it 90 degrees to prevent it from rolling. Roll the seamer back to the eave to repeat the process.

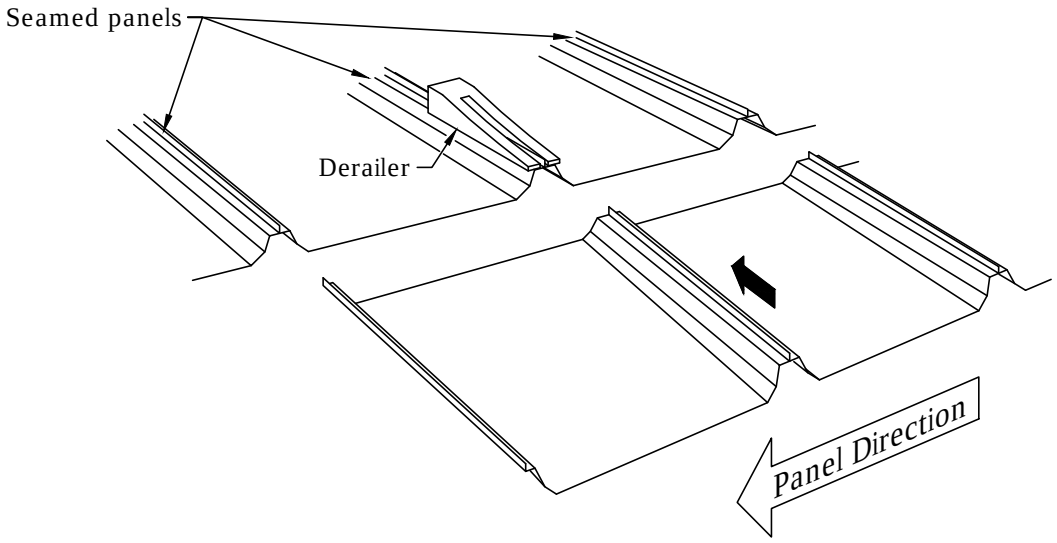
Important: On building with single slope roofs, it may be necessary to move the starting platform to the upslope end of panels to "catch" the seamer in a manner similar to starting.

DERAILER

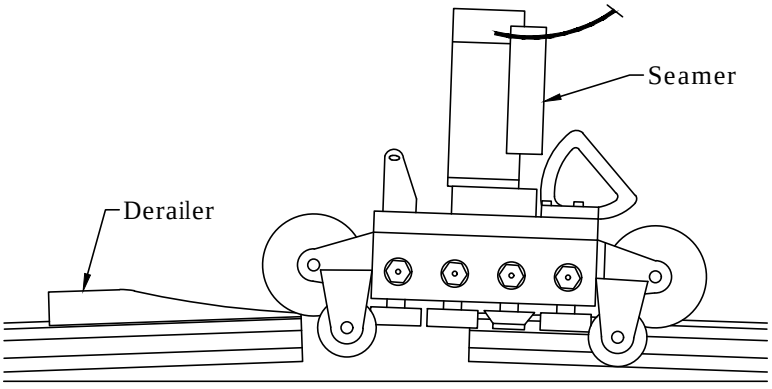
A derailer is to be used when seaming with panels already installed on the opposite side of the roof and the roof slope is less than 1:12.

Position the derailer over the existing seam at the end of the panel opposite the one to be seamed. As the machine completes the seam, the front wheels ride up on the derailer to disengage the forming wheels. The machine is then removed and returned to the eave for starting the next seam.

The seamer can be removed without the use of the derailer by lifting the front of the machine over the opposite slope panels. But if the machine comes up to soon, the end of the seam will be too high for proper fit of ridge cover parts. The seam height should not exceed 7/8".



Detail-Derailer Installation at Ridge



Detail-Derailer Installation at Ridge

ROOF RUNNER SEAMING MACHINE OPERATIONS

TIPS FOR TROUBLE FREE OPERATION

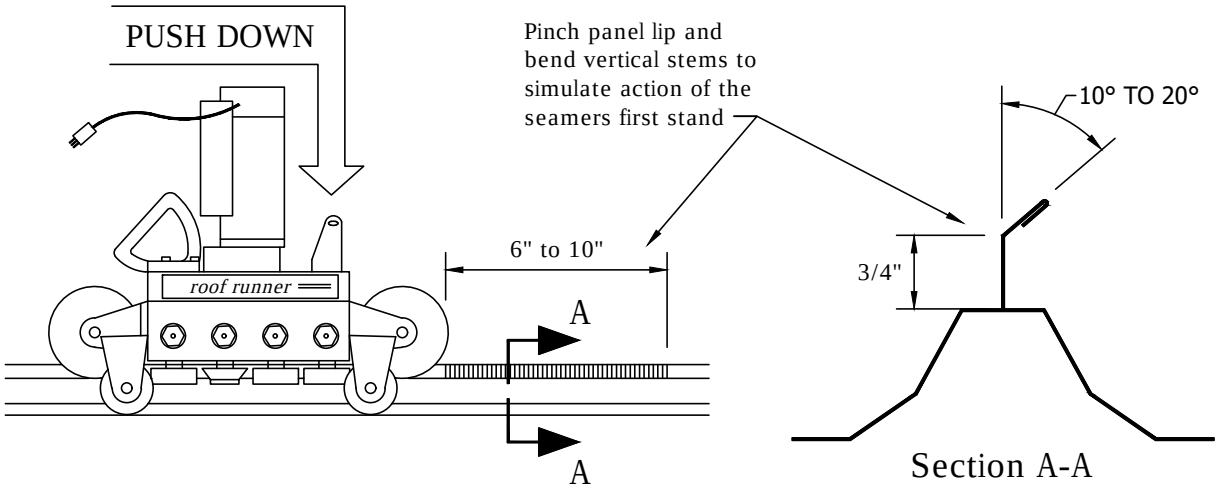
1. Safe and correct seaming requires all machine operators to be familiar with the machine and its features. Be sure they are aware of the proper material flow through the feed wheels so that they can spot a malfunction quickly and can correct its cause immediately. Improper seams longer than 5 feet are difficult to reapair as they involve the panel clips and tabs.

2. Always use a starting platform.

3. Make sure the feed wheels are kept clean, especially on painted material! (See Maintenance Section in materials accompanying the seamer.)

4. Many seaming problems are the result of mis-aligned purlins and/or frames. A sudden change in direction (1/4" in 5') can cause an incorrect seam. A good rule to follow is to "string line" the purlin holes in each bay before paneling.

5. Be sure the panels are properly engaged prior to seaming. Use locking pliers to hold them in position as required. Should an incomplete seam occur, stop the seamer immediately! An incomplete seam can usually be restarted by bending the panel stems several inches ahead of the seamer, in the direction of seaming.

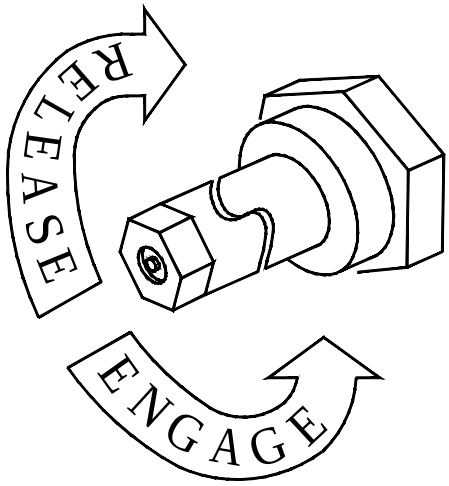


6. Watch to see that the large front and rear guide wheels are bearing on the corrugation. The wheel should turn throughout the seaming operation (at clips and end splices they may stop momentarily but should resume turning again immediately.)

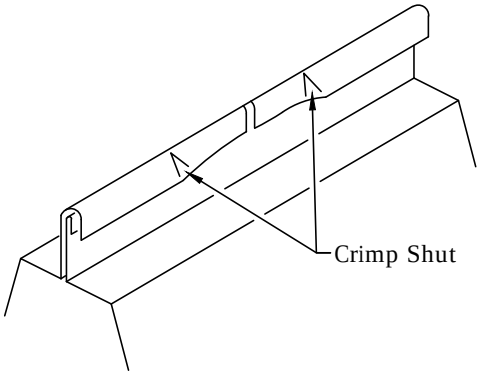
ROOF RUNNER SEAMING MACHINE OPERATIONS

TIPS FOR TROUBLE FREE OPERATION

7. Cam releases are provided for the purpose of disengaging the machine from the panel. They should be used only when absolutely necessary. A large adjustable wrench or 30 MM socket is required and the process should be done slowly and with great care as there are several cast pieces involved that are under heavy spring pressure. These pieces will break if not extremely careful.



8. Panel and splices require special attention- improperly placed or excess mastic will be picked up by the machine making the seaming process more dificult. The upper panels must fit into the lower panel notches to minimize the material thickness to be seamed. Be sure to crimp the panel lips shut at the joint to prevent the possibility of upslope end jamming in the machine.

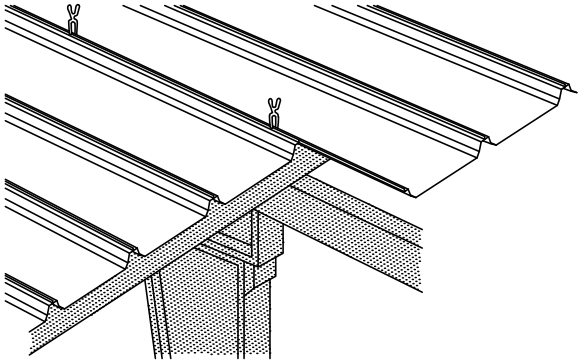


9. Avoid roof traffic distortion to the panels being seamed. Keep roof traffic away from the seamer.

Important: Operator should stay in a position that minimizes traffic distortion. The best position is 4' to 5' ahead, to the right of the seamer on a fully seamed panel. From this position, the operator can:

-Keep panels engaged.
-Watch seam and seamer.
-Stop machine as necessary.
-Hold down front of machine across laps.
-Work from safest position on a stable panel.

ROOF RUNNER SEAMING MACHINE OPERATIONS



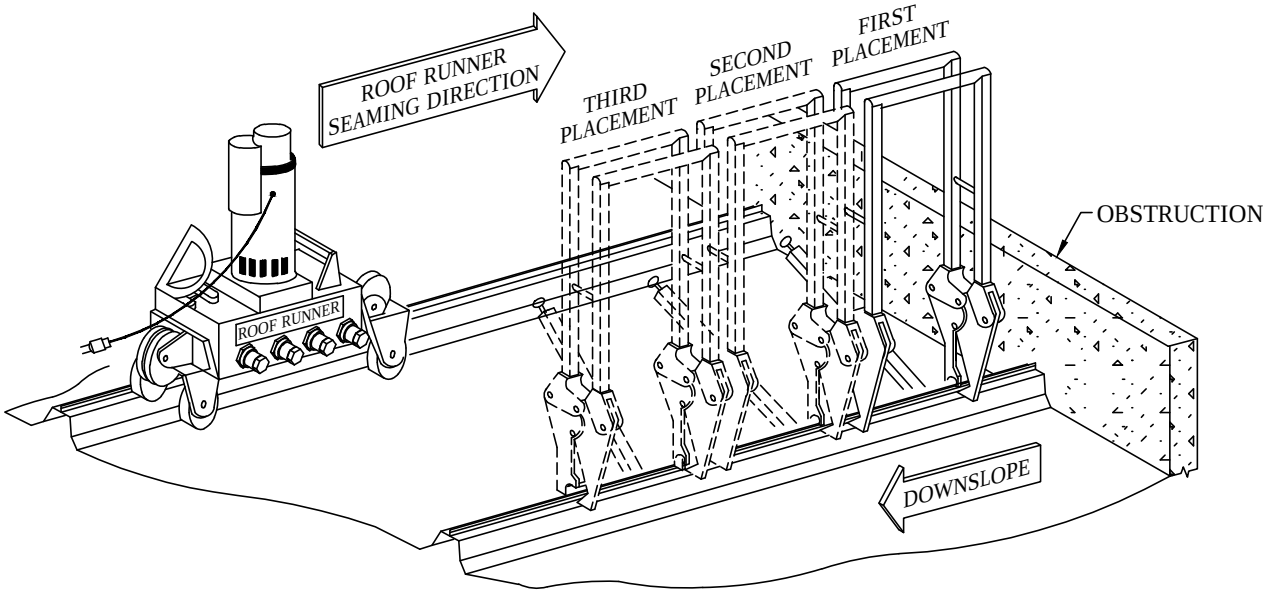
INSIDE CORNER AT OVERHANG

When an inside corner condition exists on the building, the roof panels at the inside corner cannot be seamed until the gable trim has been installed on the roof projection. If the seaming is to be delayed for some period of time, the unseamed panels must be anchored.

Locking pliers or clamps can be used along the lap. Electrical conduit flange clamps, preferably with a galvanized coating, used on 5' centers, is an ideal inexpensive tool to hold any unseamed MR-24 roof system panel to the panel or trim clip in place of locking pliers.

USE OF HAND SEAMER

In areas where there is not ample clearance for use of a seamer, the hand seamer may be used. However, the hand seamer is NOT for general use.



1. Before completing the seam with the seamer, hand seam the panel to provide the necessary 18" of clearance to finish and enable the removal of the seamer. (Seamer starts at low eave).

2. The hand seamer will seam a nominal 6" of seam per placement (tool is nominal 6" in length). Most applications require three placements to get the necessary clearance, (18" Nominal).

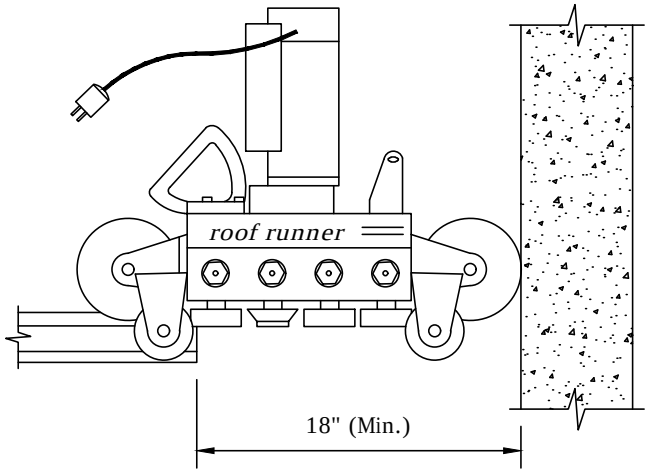
3. Using the hand seamer, follow the steps above. Important: Do each step the full 18", three placements, before proceeding to the next step. Start hand seam from end of panel.

4. After hand seaming is completed finish the seaming operation with the seamer. Then, following the information in the "cam opening detail", open the cams on the seamer and remove the machine.

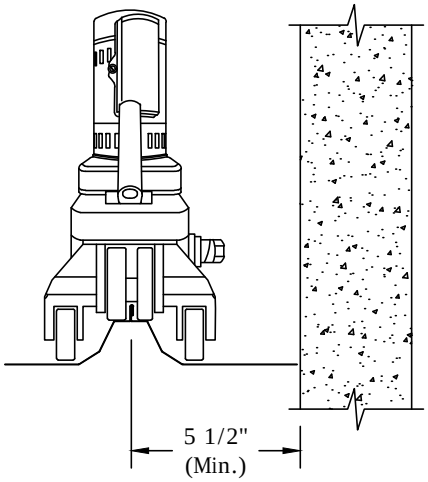
ROOF RUNNER SEAMING MACHINE OPERATIONS

CLEARANCES

The seamer requires 18" minimum clearance starting or removal at a vertical obstruction or an overhead obstruction and 5 1/2" minimum clearance for a vertical obstruction parallel to the roof.



PERPENDICULAR CLEARANCE
Wall or structural in place before
MR-24 roof system panel installation



PARALLEL CLEARANCE
Wall or structural in place before
MR-24 roof system panel installation

PANEL END LAPS

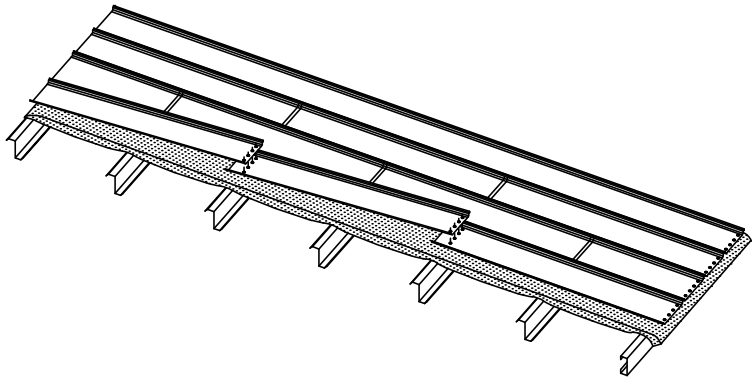
When multiple panels are required to span from eave to ridge, end laps of adjacent rows of panels are staggered to provide continuity of the corrugation through the length of the panel run, and to prevent a build-up of material thickness at the laps.

The panels are factory notched and punched for the required end-to-end panel laps.

The alternating panel lenghts required to stagger the panel end laps are packaged together so they can, with few exceptions, be used in the sequence they come out of the crates.

Panel end lap splices are positioned over the roof structurals and are made by clamping the panels together between a splice plate and a panel strap.

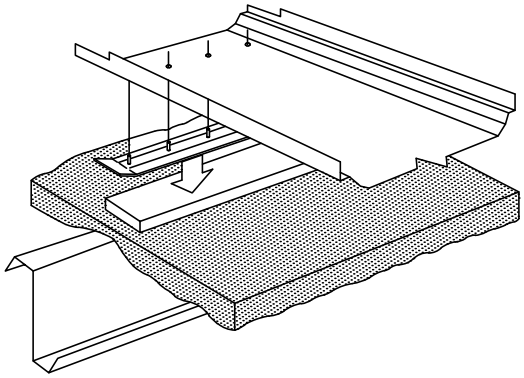
The procedure for a multiple row of panels begins with the eave panel, istalled in the same manner as was shown previously for a single panel, eave to ridge. The top panel clip should not be installed until the panel splice is made.



Step 1

After the eave panel is fastened, lift the upper right hand corner and insert the splice plate projection studs through the factory punched holes in the panel flat.

Some installers find it advantageous to temporarily attach the plate to the panel before positioning in place. Use two flange nuts, loosely applied, to hold the plate until the panel is installed. Remove the nuts before applying sealants.



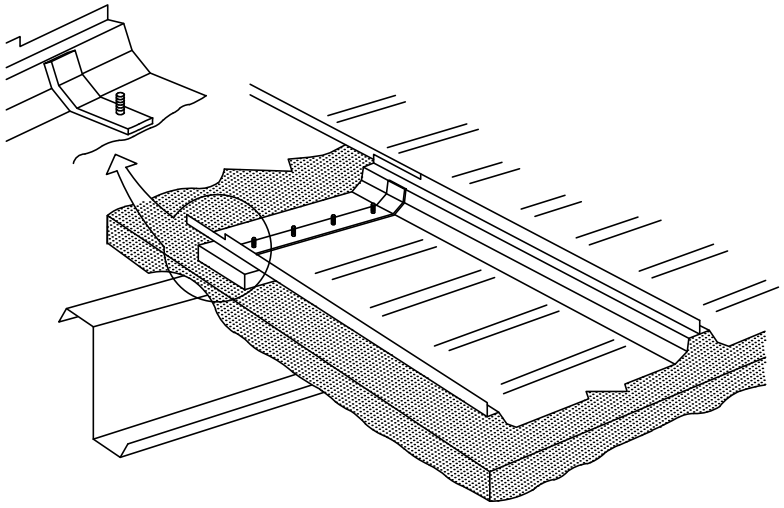
PANEL END LAPS

Step 2

Apply a precut 1/8"x1" ribbon type Panlastic sealant, centered over the studs across the flat of the panel and up to the flat of the corrugation.

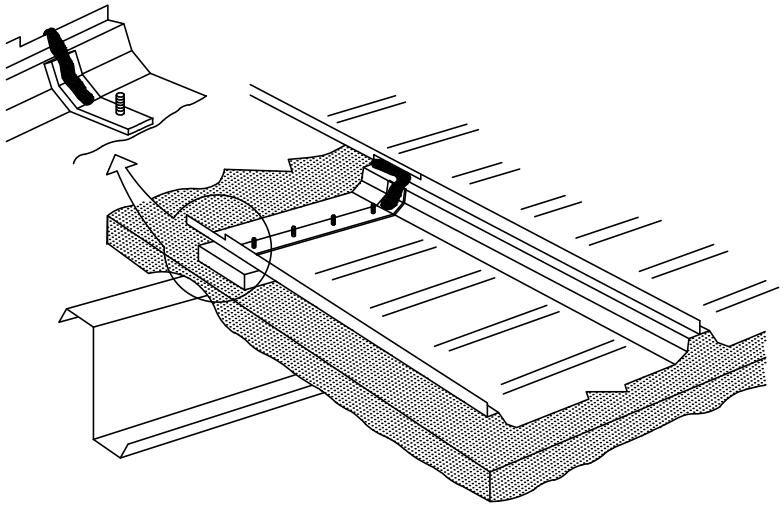
If panels have become dirty or have mill oil on its surface, clean before applying the ribbon of sealant.

Once applied, you must push the ribbon of sealant over the projection studs and work it into the panel corners. The studs should project through the slits in the paper backing.



Step 3

Remove the paper backing and overlay the Panlastic ribbon sealant with a 3/8" diameter bead of cartridge type Panlastic sealant from the base of the corrugation to the top of the standing legs. Do not use the cartridge type Panlastic sealant in the flat of the panel. Note that the Panlastic sealant on the right hand side of the panel is extended to the end of the panel along the edge of the notch.



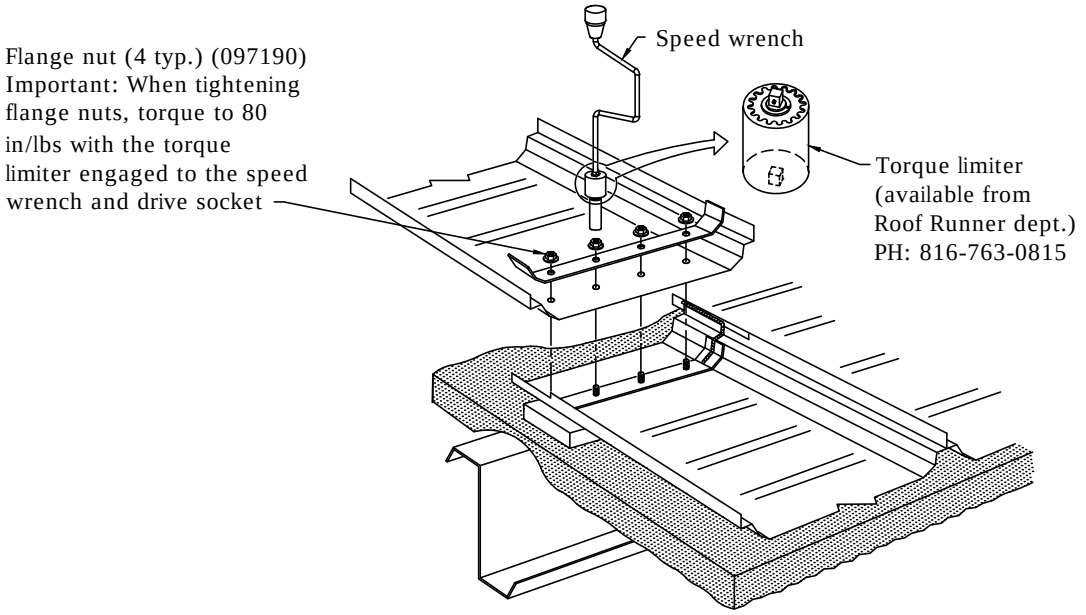
PANEL END LAPS

Step 4

Place the splice or ridge panel in position over the eave or splice panel to engage the projection studs in the splice plate.

Position the panel strap over the stud, install the flange nuts, and tighten down to pull the strap tight to the panel surface.

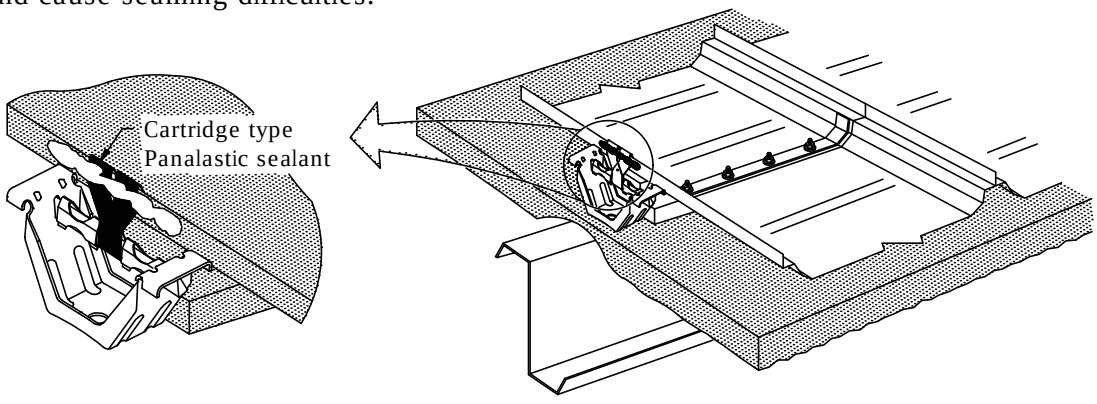
Important: Flange nuts should always be installed with hand tools. Power tools can break the stud or the stud weld. If this should happen, you must replace the splice plate. Always complete the splice before installing and seaming adjacent panels.



Step 5

When the lap is completed, apply a 3/8" diameter bead of cartridge type Panlastic sealant along the edge of the panel lap at the splice. This is necessary before installing adjacent panels.

The application of sealants, particularly at panel end lap splices, is critical. You must use the proper sealant in the proper volume and at the right place. Excess or misplaced sealant may be picked up by the seamer and cause seaming difficulties.



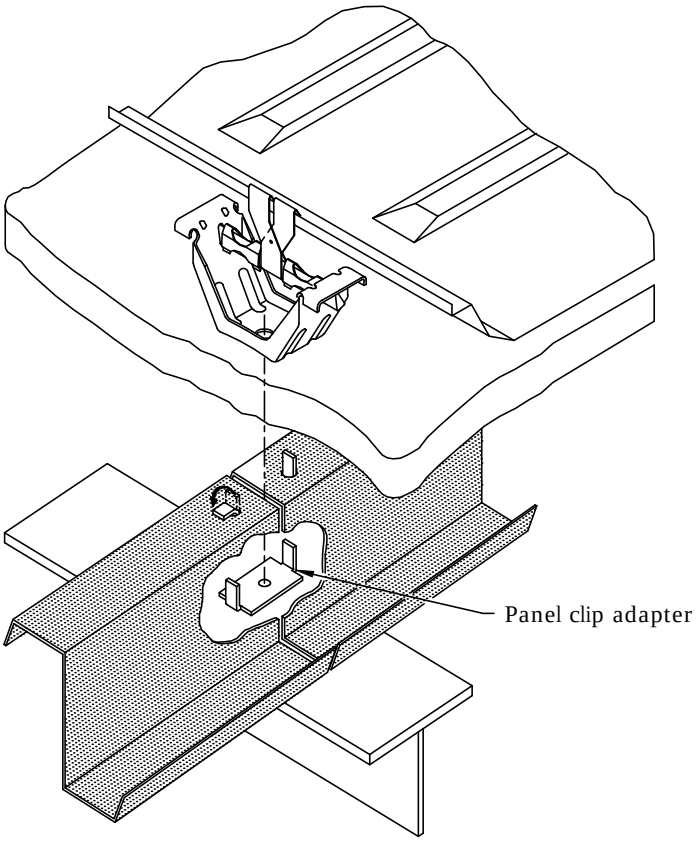
Step 6

Continue these procedures for the remainder of the paneling being sure to check the panel layout drawings for the proper panel stagger.

The seaming operation must follow panel installation as closely as possible.

PANEL CLIP ADAPTER

Install the adapter from beneath the structurals, holding with the locking pliers, and bend the projecting tabs over from the top with a hammer. If the joint gap is less than 1/4" between structurals, drill to accommodate the fastener's contact with the adapter plate.



GABLE TRIM INSTALLATION

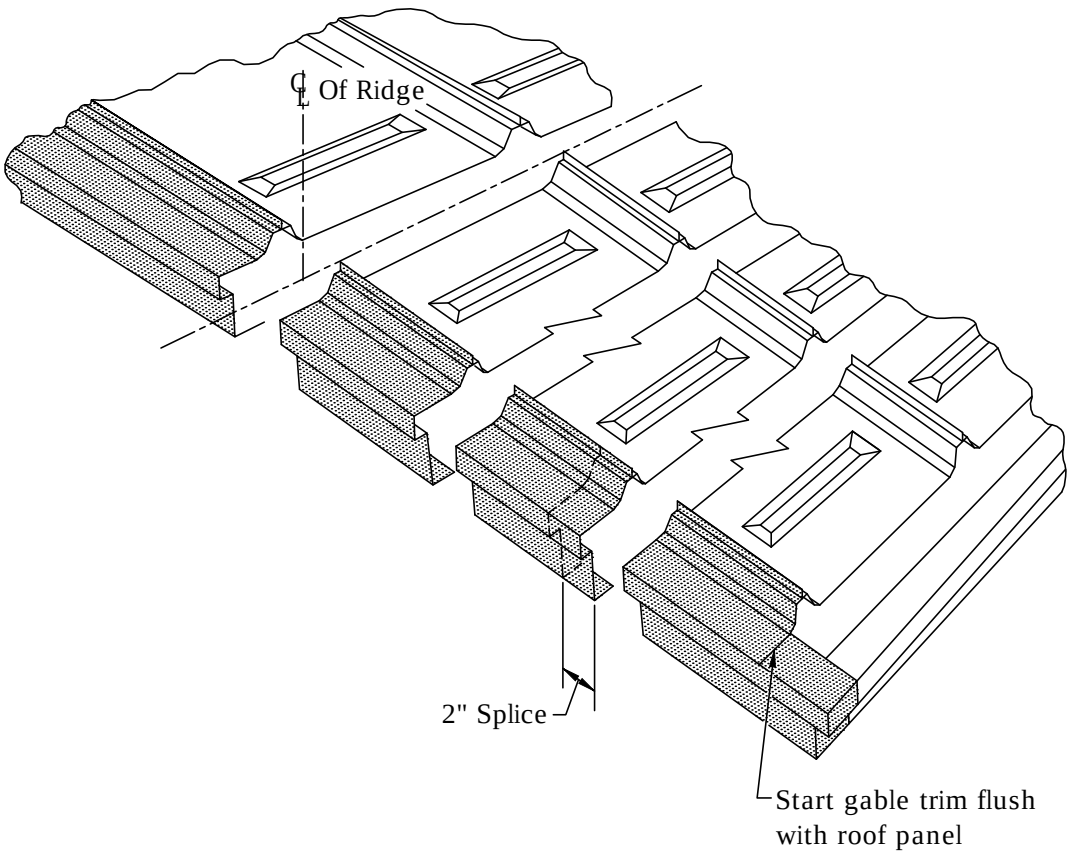
Gable trim is furnished in 20' lengths and is designed for joining to the roof panels with the seamer in the same manner as a panel-to-panel joint. Like the panels, the gable trim is installed from eave to ridge.

Start at the eave and position the trim flush with the end of the roof panel. The standing edge of the trim must engage the trim clip tabs and the edge of the roof panel.

Apply a 5/16" bead of cartridge Panlastic sealant to the other end of the trim and overlap the next rim section 2". The remainder of the trim sections are installed the same way. Cut off the last section of gable trim so that it will be flush with the end of the panel at the ridge.

A trim closure is required in the end of the last section of gable trim as part of the ridge cover installation. It should be installed before installing the gable trim. Push the bottom of the trim to engage the clips on the cap flashing. Complete the trim splices by drilling holes at the splices and installing blind rivets. Hold the trim in position with locking pliers or other clamping devices.

The gable trim is now seamed to the roof panels. The seaming operation is the same as for seaming roof panels except greater care will have to be taken to assure a good start since the starting platform is more difficult to use at this location.



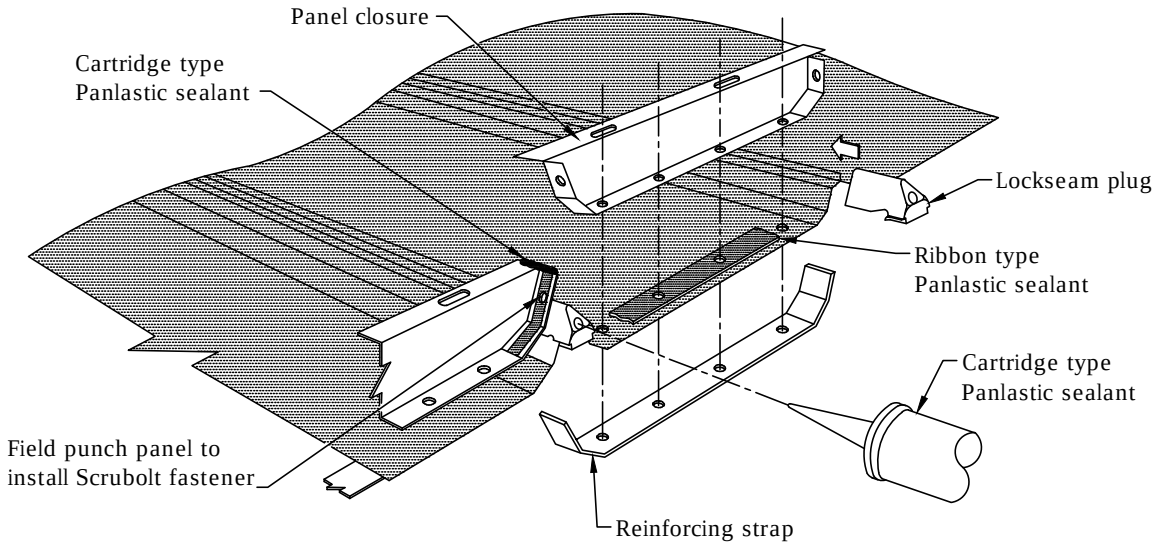
PANEL END CLOSURE INSTALLATION

First, a weathertight closure is installed between the roof panel and the ridge cover. To install the panel end closure, start with a lock seam plug, sliding it securely over the end of the standing lock seam and engaging the tab on the bottom of the plug under the panel.

Next apply a ribbon of 1/8"x1" ribbon Panlastic sealant across the roof panel and over the plug. Center the Panlastic sealant over the holes in the panel, and work into corners of the corrugation. Be sure the Panlastic sealant covers the openings on the sides of the plug.

Then, remove the paper backing from the sealant, position the panel closure over the sealant and align with the holes in the panel. Secure in place with Scrubolt fasteners through the closure, panel and reinforcing strap.

Fill the lockseam plugs with cartridge type Panlastic sealant appears at the opposite end of the plug. Then apply a 3/8" bead of cartridge Panlastic sealant along the top edge of the closure where it laps the plug, overlapping the 1" ribbon of Panlastic sealant. This must be applied before the adjoining panel closure is installed.

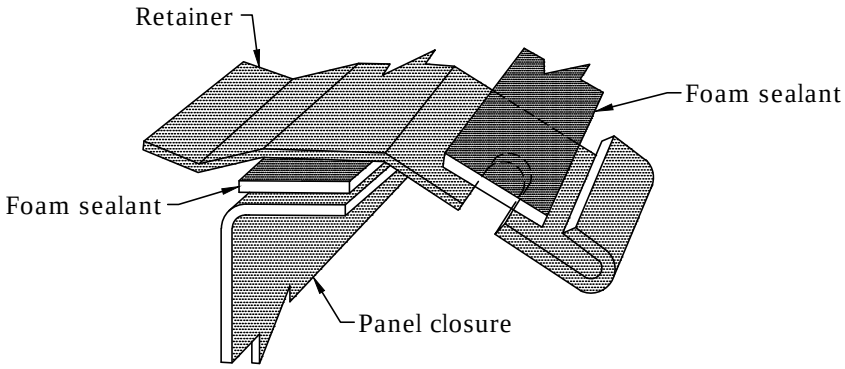


RETAINER INSTALLATION

Then apply 3/16"x3/4" foam sealant along the tops of the panel closures on both sides of the ridge for the entire length of the roof.

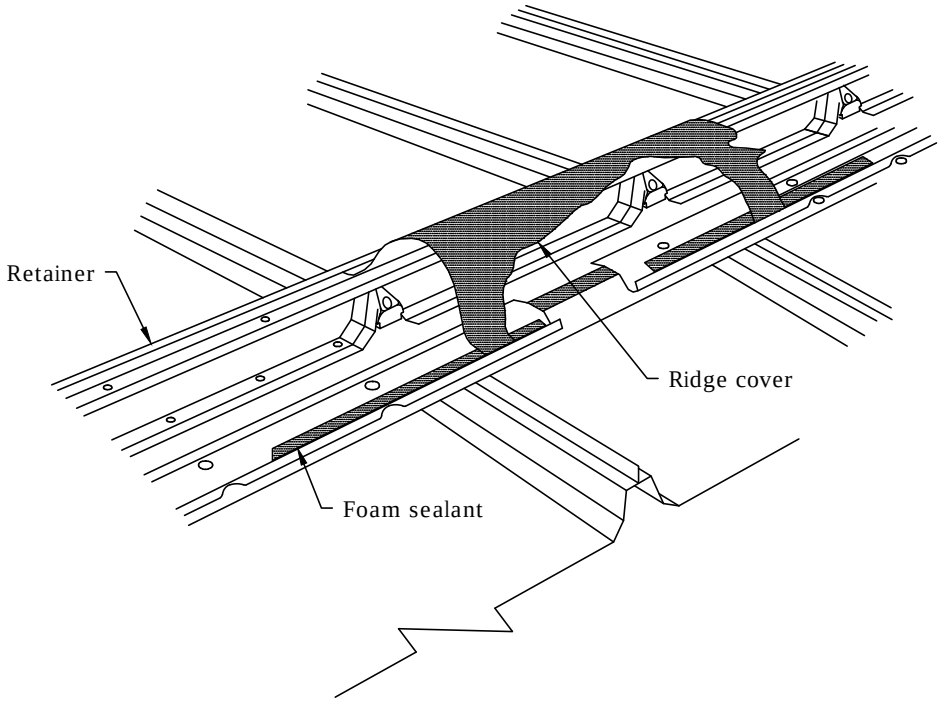
The paper backing is removed from the foam sealant as the ridge cover retainers are installed. Next, place the ten foot long retainer section, aligning the holes in the retainer with the slots in the panel closures. Fasten these retainers with Lock-Rivet fasteners.

Then apply the 3/16"x3/4" foam sealant, centered on the slots in the retainers, along the entire length. This forms the seal between the retainer and the ridge cover.



RIDGE COVER INSTALLATION

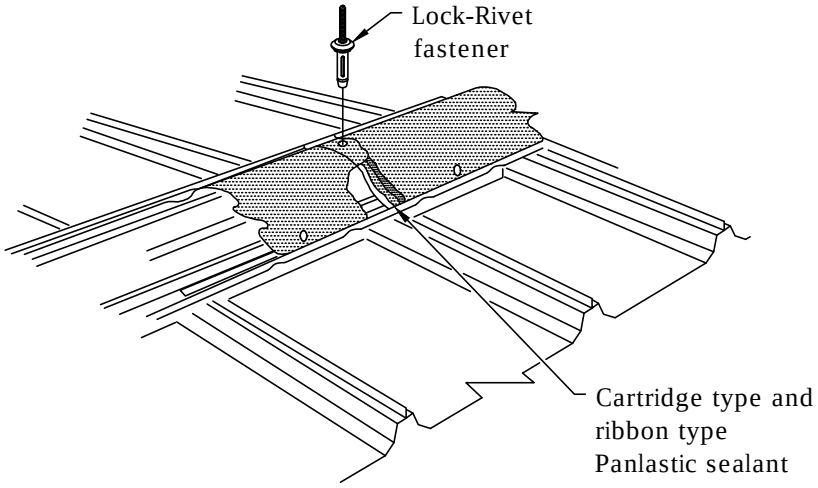
Before starting the ridge cover installation, be sure the insulation from opposite slopes of the roof are overlapping and fill the space between panels. Starting two feet in from one end of the building, install the first ridge cover section. Note that the ridge cover is factory punched with holes in one end, slots in the other.

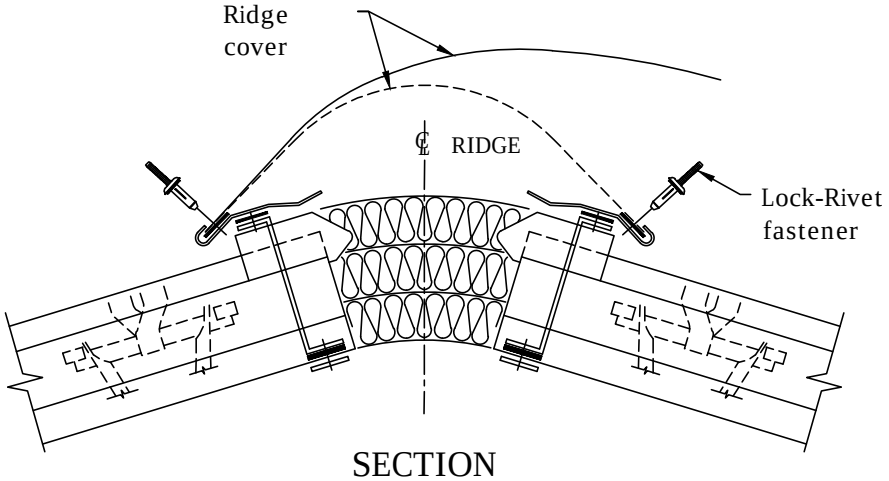


RIDGE COVER SPLICE

Orient the ridge cover so that at ridge cover end splices the slots are on the underside of the lap. Insert one edge of the ridge cover into the retainer sections and secure with Lock-Rivet fasteners. Then, starting at the end, flex the ridge cover section to insert the other edge into the retainer on the opposite side. Before installing the adjoining ridge cover section, apply a ribbon of 1/8"x1" roll Panlastic sealant, centered over the slots in the ridge cover.

Remove the paper and apply a 5/16" diameter bead of cartridge Panlastic sealant at the inside edge of the ribbon sealant. Each ridge cover section is installed in the same manner, fastening the sections together at end laps with Lock-Rivet fasteners.

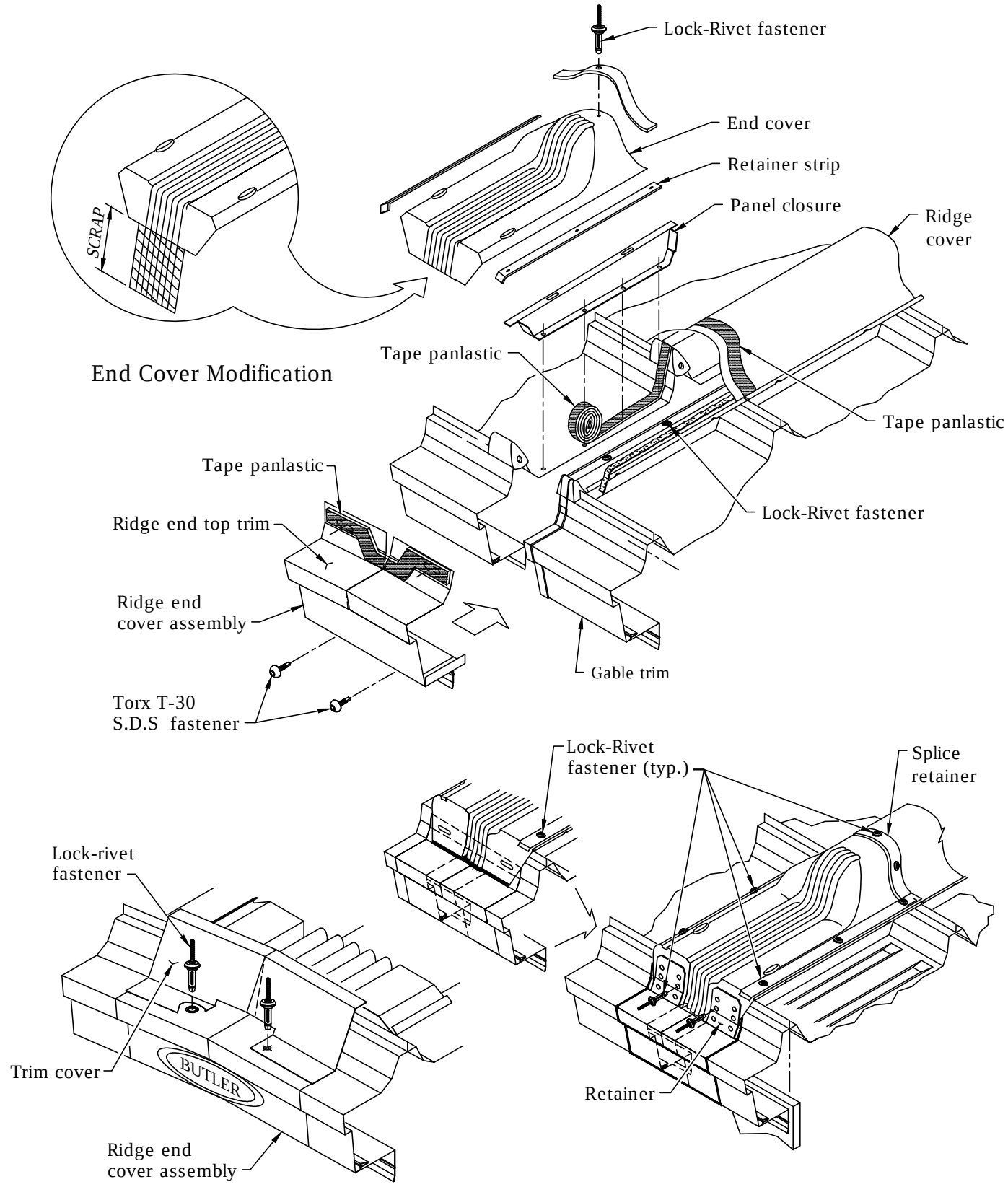




SECTION

END COVER INSTALLATION

See planograph drawing #1081243 for installation information.



BUTLER MANUFACTURING
P.O. Box 419917 Kansas City, MO 64141-6917

Form No. 4797

Printed in the U.S.A.