

PURLIN[®]

GLIDE FP

INSULATION & LEADING EDGE FALL PREVENTION SYSTEM

Training/Installation Manual

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Introduction

The patented Purlin Glide FP® System provides OSHA-compliant leading edge fall prevention and a more efficient method to insulate the roof of your pre-engineered metal building. Silvercote Lamination certifies contractors to install the Purlin Glide FP System on our website - **certification.silvercote.com**. Purlin Glide FP must be installed by a Silvercote-certified contractor to qualify for OSHA-compliant leading edge fall prevention.

- The Purlin Glide FP System utilizes unfaced fiberglass insulation and wide rolls of cross-woven polyethylene fabric, which provides leading edge fall prevention. These rolls reduce the number of seams up to 70% compared to conventional faced metal building insulation, resulting in faster installation and increased productivity.
- When Purlin Glide FP is installed using Silvercote's prescribed methods, it complies with OSHA's leading edge fall prevention guidelines, a vital part of an overall site-specific fall protection plan.
- Since the fabric is not glued directly to the unfaced insulation or taped to the secondary steel, the fabric will have fewer wrinkles.
- Less material damage on the jobsite and during shipment is a result of the way the product is packaged and shipped. Fabric rolls are wrapped in a protective outer film, reducing any damage that may occur to the fabric prior to installation. Purlin Glide FP equipment is boxed, palletized and poly-wrapped in our warehouse to ensure all materials are delivered complete to your jobsite.
- There is no heavy, bulky or complicated equipment involved with the installation of the Purlin Glide FP Insulation System compared to other insulation systems. This saves contractors valuable time and money during the system setup. Purlin Glide FP works on nearly all metal buildings, regardless of size. The Purlin Glider™ weighs approximately 50 pounds and fits on almost all secondary steel.
- During a typical installation, two (2) Purlin Gliders are required for fabric rolls less than 17 feet in width and three (3) Purlin Gliders are required for fabric rolls 17 feet wide or wider. If roofing a double slope building one side at a time, you will need enough Purlin Gliders for half the roof. After the first slope is completed, the machines are switched to the opposite slope to finish the job.



WARNING

The Purlin Glide FP Insulation System is **NOT** a complete OSHA-compliant fall protection plan. It can be a part of an OSHA-compliant site specific fall protection plan when incorporated with other accepted fall protection techniques. It is up to you to check and verify with your local OSHA office to determine what else is needed for a complete compliant site specific fall protection plan.

The Purlin Glide FP Insulation System does not qualify for fall protection/prevention in all regions of Canada. Check with your Silvercote Representative.

Schedule A

(Licensed Trademarks)

Purlin Glide® (Trademark)	Registration No. 2,445,233 Goods: systems for installing building insulation
Purlin GlideSM (Service Mark)	Registration No. 2,556,773 Services: installing building insulation
Purlin Glider™ (Trademark)	Goods: insulation system fabric dispensing device
Purlin Glide FP® (Trademark)	Registration No. 2,759,519 Goods: metal insulated roof systems
Purlin Glide FPSM (Service Mark)	Registration No. 2,705,192 Services: distributorship services relating to insulated roof systems

Schedule B

(Approved Equipment and Materials)

- A. Silvercote unfaced insulation - purchased from Silvercote or an approved distributor and approved for use in the Purlin Glide FP System.
- B. Purlin Glider - insulation system fabric dispensing device.
- C. Fabric/Vapor Retarder - high density cross-woven polyethylene specifically fabricated to meet job requirements with a Class A fire rating.

Schedule C

(Silvercote's Patents)

- A. U.S. Patent 6,247,288 entitled "Roof Fabric Dispensing Device", issued June 19, 2001
- B. U.S. Patent 6,308,489 entitled "Rolled Fabric Dispensing Apparatus", issued October 30, 2001
- C. U.S. Patent 6,393,797 entitled "Rolled Fabric Dispensing Method", issued May 28, 2002
- D. U.S. Patent 6,595,455 entitled "Rolled Fabric Dispensing Apparatus and Fall Protection System and Method", issued July 22, 2003
- E. U.S. Patent 6,705,059 entitled "Rolled Fabric Carriage Apparatus", issued March 16, 2004
- F. Canadian Patent 2,315,461 entitled "Rolled Fabric Dispensing Apparatus", issued July 27, 2004
- G. Canadian Patent 2,315,124 entitled "Rolled Fabric Dispensing Method", issued April 26, 2005
- H. Canadian Patent 2,382,266 entitled "Rolled Fabric Dispensing Apparatus and Fall Protection System and Method", issued November 7, 2006
- I. Canadian Patent 2,378,998 entitled "Rolled Fabric Carriage Apparatus", issued November 1, 2005

OSHA Jobsite Safety Regulations

Leading Edge Fall Prevention

Silvercote certifies that when the Purlin Glide FP system is installed by a Silvercote-certified contractor and in strict conformance with Silvercote's instructions, the Purlin Glide FP System provides leading edge fall prevention in compliance with CFR 1926.754(e)(3)(i). Silvercote will provide each job with a certificate in order for the certified contractor to show compliance with CFR 1926.502(c)(4)(ii).

On June 24, 2002, Silvercote received a positive letter of interpretation from OSHA for our Purlin Glide FP® System. This letter confirmed that the Purlin Glide FP System would, when used in accordance with Silvercote's instructions, typically comply with section 1926.754(e)(3)(i), which outlines fall prevention through roof openings. We later received a letter from OSHA dated January 15, 2003, that stated with the modifications to the system, new test results demonstrate that the Purlin Glide FP System typically provides leading edge fall prevention per OSHA guidelines, when used in accordance with Silvercote's instructions.

IMPORTANT

The Purlin Glide FP System DOES NOT provide perimeter fall protection, and does not provide fall prevention within six feet (6') of either end wall or side wall.

If an OSHA inspector has questions related to our interpretation letter, have them call (202) 693-2020 and someone from the standards department will help them.

If you would like to have your own full set of regulations or regulations pertaining to other fields, go to www.osha.gov.

U.S. Department of Labor

Occupational Safety and Health Administration
Washington, D.C. 20210

Reply to the attention of:



JUN 24 2002

Gary Romes, Vice President
Guardian Fiberglass
1000 East North Street
Albion, Michigan 49224

Dear Mr. Romes:

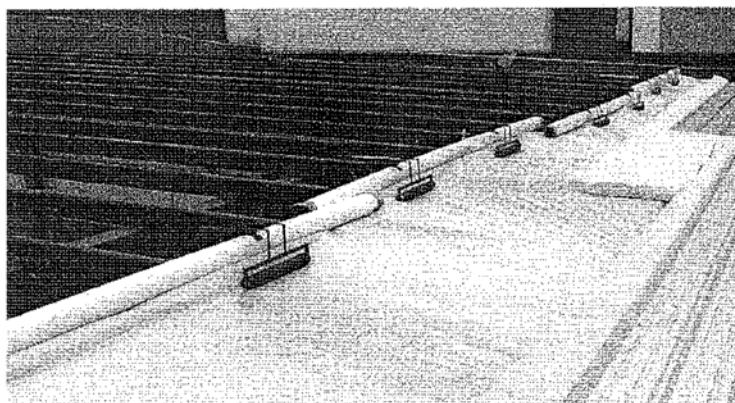
This is in response to your letter of August 22, 2001, and subsequent telephone discussions and meetings, requesting OSHA determine whether the Guardian Fiberglass Purlin Glide FP Insulation System ("Purlin Glide") is in compliance with OSHA requirements regarding protection from falls. We apologize for the long delay in providing this response.

OSHA is generally precluded from approving or endorsing specific products. The variable working conditions at job sites and possible alteration or misapplication of an otherwise safe piece of equipment could easily create a hazardous condition beyond the control of the equipment manufacturer. However, where appropriate, we try to give some guidance to help employers assess whether products are appropriate to use in light of OSHA requirements.

Submitted Information

Based on the materials and information you have supplied, we understand the Purlin Glide to be a system used as part of the installation of metal roofing. In this system, an assembly of rolls of "vapor retarder facing," which is a synthetic sheet material, is pushed out (with long poles) ahead of the area about to be decked. As it is pushed out, the sheet material deploys from the rolls, covering the steel purlins. A row of insulation and metal roofing is then installed over the sheet material. The Purlin Glide system is then advanced again, and the next row of insulation and roof decking is installed, etc. When used according to the manufacturer's instructions, there is always at least 6 feet of sheeting covering the purlins ahead of the row in which the insulation and decking is being installed (between the sheeting rolls and the leading edge of the metal decking).

One of the designed purposes of the sheeting material is to prevent workers installing the roofing system from falling in the area below and in front of the leading edge of the roof panels that are being installed. The system is not designed to address fall hazards to the perimeters of the structure or during the set-up and removal of the apparatus.



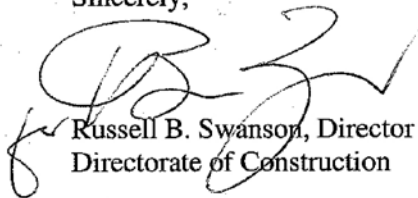
You submitted testing results, signed by a registered professional engineer, showing that the sheeting material will withstand a drop test using a 400-pound bag of sand.

Applicable standards

The system is typically used during the installation of metal roofing systems on steel structures. The requirements for fall protection during the installation of such metal roofing is covered by the steel erection standard, 29 CFR 1926.750 - .761. Your product is designed to serve as a cover to prevent falls through openings. Under 1926.754 (e)(3)(i), covers for roof openings must "be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time." Assuming the validity of the test data ¹, the system typically would meet this requirement (when used in accordance with the manufacturer's instructions) for preventing an employee from going through an opening.

If you need additional information, please do not hesitate to contact us by fax at: U.S. Department of Labor, OSHA, Directorate of Construction, Office of Construction Standards and Compliance Assistance, fax # 202-693-1689. You can also contact us by mail at the above office, Room N3468, 200 Constitution Avenue, N.W., Washington, D.C. 20210, although there will be a delay in our receiving correspondence by mail.

Sincerely,


Russell B. Swanson, Director
Directorate of Construction

¹ This office does not independently test products or validate submitted test data.

NOTE: OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

U.S. Department of Labor

Occupational Safety and Health Administration
Washington, D.C. 20210

Reply to the attention of:



JAN 15 2003

Gary Romes, Vice President
Guardian Fiberglass
1000 East North Street
Albion, Michigan 49224

Dear Mr. Romes:

This is in response to your letter of October 9, 2002, regarding your Guardian Fiberglass Purlin Glide FP Insulation System ("Purlin Glide"). You had previously written to us about the Purlin Glide in an August 22, 2001, letter, to which we responded on June 24, 2002. The question you asked was whether the Purlin Glide met OSHA requirements.

June 24, 2002 OSHA letter

In our previous letter, we stated:

The system is typically used during the installation of metal roofing systems on steel structures. The requirements for fall protection during the installation of such metal roofing is covered by the steel erection standard, 29 CFR 1926.750 - .761. Your product is designed to serve as a cover to prevent falls through openings. Under 1926.754 (e)(3)(i), covers for roof openings must "be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time." Assuming the validity of the test data ¹, the system typically would meet this requirement (when used in accordance with the manufacturer's instructions) for preventing an employee from going through an opening.

Current question

You indicate that some parts of the system have been redesigned and have subsequently conducted additional testing on the system. In this round of testing, you conducted static tests using 1,022 pounds to simulate the load of twice the weight of two workers with their equipment. You have asked us to review the materials in light of the applicable OSHA requirements.

Response

OSHA is generally precluded from approving or endorsing specific products. The variable working conditions at job sites and possible alteration or misapplication of an otherwise safe piece of equipment could easily create a hazardous condition beyond the control of the

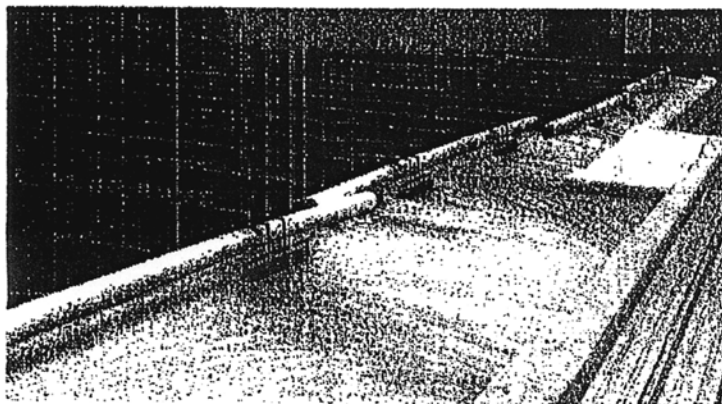
¹ This office does not independently test products or validate submitted test data.

equipment manufacturer. However, where appropriate, we try to give some guidance to help employers assess whether products are appropriate to use in light of OSHA requirements.

Submitted Information

Based on the information you have supplied, we understand the Purlin Glide to be a system used as part of the installation of metal roofing. In this system, an assembly of rolls of “vapor retarder facing,” which is a synthetic sheet material, is pushed out (with long poles) ahead of the area about to be decked. As it is pushed out, the sheet material deploys from the rolls, covering the steel purlins. A row of insulation and metal roofing is then installed over the sheet material. The Purlin Glide system is then advanced again, and the next row of insulation and roof decking is installed, etc. When used according to the manufacturer’s instructions, there is always at least 6 feet of sheeting covering the purlins ahead of the row in which the insulation and decking is being installed (between the sheeting rolls and the leading edge of the metal decking). The system advances parallel to the direction of the purlins.

One of the designed purposes of the sheeting material is to prevent workers installing the roofing system from falling in the area below and in front of the leading edge of the roof panels that are being installed. The system is not designed to address fall hazards to the perimeters of the structure, during the set-up and removal of the apparatus, or during the process of replacing a spent roll of vapor barrier.



The manufacturer’s instructions include a restriction against using the system where the purlins are more than a specified distance apart and a requirement that the decking be completely attached before advancing the system.

You submitted testing results, signed by a registered professional engineer, showing that the sheeting material will withstand a static test using a two sand bags with a total combined weight of 1,022 pounds.

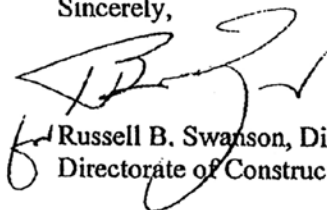
Applicable standards

The system is typically used during the installation of metal roofing systems on steel structures. The requirements for fall protection during the installation of such metal roofing is covered by the steel erection standard, 29 CFR 1926.750 - .761. Your product is designed to serve as a cover to prevent falls through openings.

Under 1926.754 (e)(3)(i), covers for roof openings must "be capable of supporting, without failure, twice the weight of the employees, equipment and materials that may be imposed on the cover at any one time." Based on the submitted information (supporting both your August 22, 2001 letter and your October 9, 2002 letter)², the system typically would meet the applicable OSHA requirements, which in this case are the floor cover requirements for roof openings in 1926.754(e)(3)(i), for preventing falls at the leading edge during the metal decking installation process, when the Purlin Glide is used in accordance with the manufacturer's instructions.

If you need additional information, please do not hesitate to contact us by fax at: U.S. Department of Labor, OSHA, Directorate of Construction, Office of Construction Standards and Compliance Assistance, fax # 202-693-1689. You can also contact us by mail at the above office, Room N3468, 200 Constitution Avenue, N.W., Washington, D.C. 20210, although there will be a delay in our receiving correspondence by mail.

Sincerely,


Russell B. Swanson, Director
Directorate of Construction

NOTE: OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

² This assumes the validity of test data; this office does not independently test products or validate submitted test data.

Estimating Material/Equipment

IMPORTANT: The Purlin Glide FP Insulation System cannot be used on any building with more than a 4:12 roof pitch for single-layer applications. Double-layer applications are limited to a 2:12 roof pitch.

Pre-installed banding on top of the purlins or bracing that is close to the top flange of the purlin can easily be avoided by “jumping” the machines over such obstructions. However; if the building requires banding to be fastened to the top of the purlins, it is suggested that the banding be installed after the fabric is in position. This will make for a quicker installation of the fabric and unfaced fiberglass insulation.

When estimating a project using the Purlin Glide FP Insulation System, you will need to know the following information:

- 1) Building width, length and roof pitch.
- 2) Is Purlin Glide FP being used on the entire roof?
- 3) For an accurate estimate, use the square foot figure for the building's roof that you would normally estimate for standard faced blanket fiberglass insulation.
- 4) To place an order, a set of detailed steel erection drawings showing purlin dimensions, purlin spacing, bay sizes, and location/number of runs of bridging will be needed.

Vapor Retarder Fabric

The vapor retarder fabric is available in custom roll widths and lengths. Silvercote Lamination will provide a layout sheet that will show roll widths & lengths along with the Purlin Glider location(s).

Vapor retarder fabric rolls will always be deployed parallel with the purlins. You should closely review the layout sheet for your building to verify how many rolls of vapor retarder fabric you will receive.

In some cases, specifically at the ridge on the return slope of a double slope building, fabric rolls may have to be field cut to width. Simply saw or trim the roll, using a handsaw or reciprocating saw with a coarse tooth blade. You should wrap tape around the fabric roll where you are going to saw to keep the edges from fraying.

Vapor Retarder Fabric - Maximum Length

Typically, the maximum length for the fabric roll is approximately 325 feet. Fabric rolls in excess of this length are awkward to maneuver and difficult to dispense from the Purlin Glider. If your building length is in excess of 325', Silvercote Lamination recommends that we make the rolls approximately half as long as the building and splice them together over a rafter. Many double slope buildings can be roofed with the same fabric roll(s).

Fiberglass Insulation

The fiberglass insulation on single layer Purlin Glide FP jobs always installs perpendicular to the purlins. With a double layer Purlin Glide FP job, the bottom layer runs parallel with the purlins and will be cut to a narrower width so that it will lay down within the secondary steel space. The top layer runs perpendicular to the purlins.

The unfaced fiberglass insulation is available in R-8, R-10, R-11, R-12, R-13 and R-19 for single layer applications, and R-20, R-25, R-28, R-30 and R-32 for double layer applications. The fiberglass insulation is easily cut using a utility knife. The advantage to cutting the unfaced fiberglass insulation to fit your building roof is that there is no waste on the job. Typically on a single layer job, installers or erectors will begin the roof with a thirty-six (36) inch or forty-eight (48) inch starter width and use seventy-two (72) inch width for the balance of the roof. It is a personal preference as to what width of fiberglass insulation you use. We recommend seventy-two (72) inch wide fiberglass when possible.

For detailed insulation specifications, visit silvercote.com.

Purlin Glider

When determining the number of Purlin Gliders you need for the job, we figure two (2) per roll for all rolls less than 17 feet in width, and three (3) Purlin Gliders per roll for all rolls of vapor retarder fabric 17 feet wide or wider. You will need at least two (2) Purlin Gliders per each roll of fabric regardless of the width.

If roofing a single slope building and the complete roof will be insulated, or roofing a double slope building and installing the Purlin Glide FP System on both slopes at the same time, you will need enough Purlin Gliders for all the rolls of fabric needed at the start of the roof. If installing a double slope roof and insulating one side at a time, half as many Purlin Gliders will be required.

Two-Faced Tape

Always order enough two-sided tape to run the length of the endwalls. Add additional tape for two (2) runs the width of the building for each splice. You may decide to use fasteners with washers to start the system at the rake angle. We recommend the use of the supplied fasteners and washers for securing the fabric at the building eaves.

Estimating Cost

The Purlin Glide FP Insulation System is sold as a complete system. The fabric rolls, Purlin Gliders and unfaced fiberglass insulation are priced as a single component, much like faced metal building insulation. Contact your Silvercote sales representative for pricing.

Installation Labor

This is the most commonly asked question, and one that is difficult to answer as it is highly dependent upon the skill and cooperation of the roofing crew. Typically, labor should not exceed that required to install standard faced metal building insulation while using other means of fall protection. With a small amount of experience, Purlin Glide FP installation rates should be considerably faster.

Jobsite Preparation

Make sure all purlins/secondary steel are in place, clear of debris and ready to attach the Purlin Gliders.

On buildings that require banding to be fastened to the top of the purlins, we recommend installing after the fabric is in position. We suggest that on your first job, you start at the most easily accessible point. If possible, start the roof with prevailing winds to your back. If you have to roof into the prevailing wind, try to have the endwall sheeted.

Manlifts, cranes or forklifts with OSHA approved workbaskets or appropriate scaffolding should be used to lift the Purlin Glide FP materials to the roof.



CAUTION

Do not use ladders and ropes to carry or hoist the materials onto the roof. We suggest that you do not top load the roof sheets before installation. This eliminates safety problems and the risk of damaging machines while lifting the sheets over them.

We suggest that you start up the Purlin Glide FP system from the inside of the building using a man lift, as this could decrease your setup time.

System Shake-Out

Review inventory of all materials on the jobsite per the order acknowledgement and layout sheet to ensure that you have all the necessary equipment and insulation to start or complete your project.

A layout sheet and insulation cutlist will be faxed to you before the job ships, and will also be included with the Purlin Gliders shipped to the jobsite. Check it for:

- 1) Adequate rolls of vapor retarder fabric to reach from eave to eave, laying the rolls by width, perpendicular with the purlins. If any rolls have been damaged during shipment, be sure to mark it on the carrier's bill of lading.
- 2) Purlin Gliders for each roll of fabric: two (2) Purlin Gliders for each roll of fabric less than 17 feet in width; three (3) Purlin Gliders for each roll of fabric 17 feet or wider. There will be safety chains, installation instructions, roll guides, extension cradles and push pole adapters in the shipping crate with the machines.
- 3) Enough roll guide extensions to have one at each end of the fabric roll(s).
- 4) Push poles with adapters to advance the Purlin Gliders (minimum of three (3) per job).
- 5) Adequate two-sided and patch tape.
- 6) Correct R-value of unfaced fiberglass insulation per your specification and adequate square footage to either start or complete your project.
- 7) Splice strips if the building length exceeds the maximum vapor retarder roll length.

Tools/Equipment Required

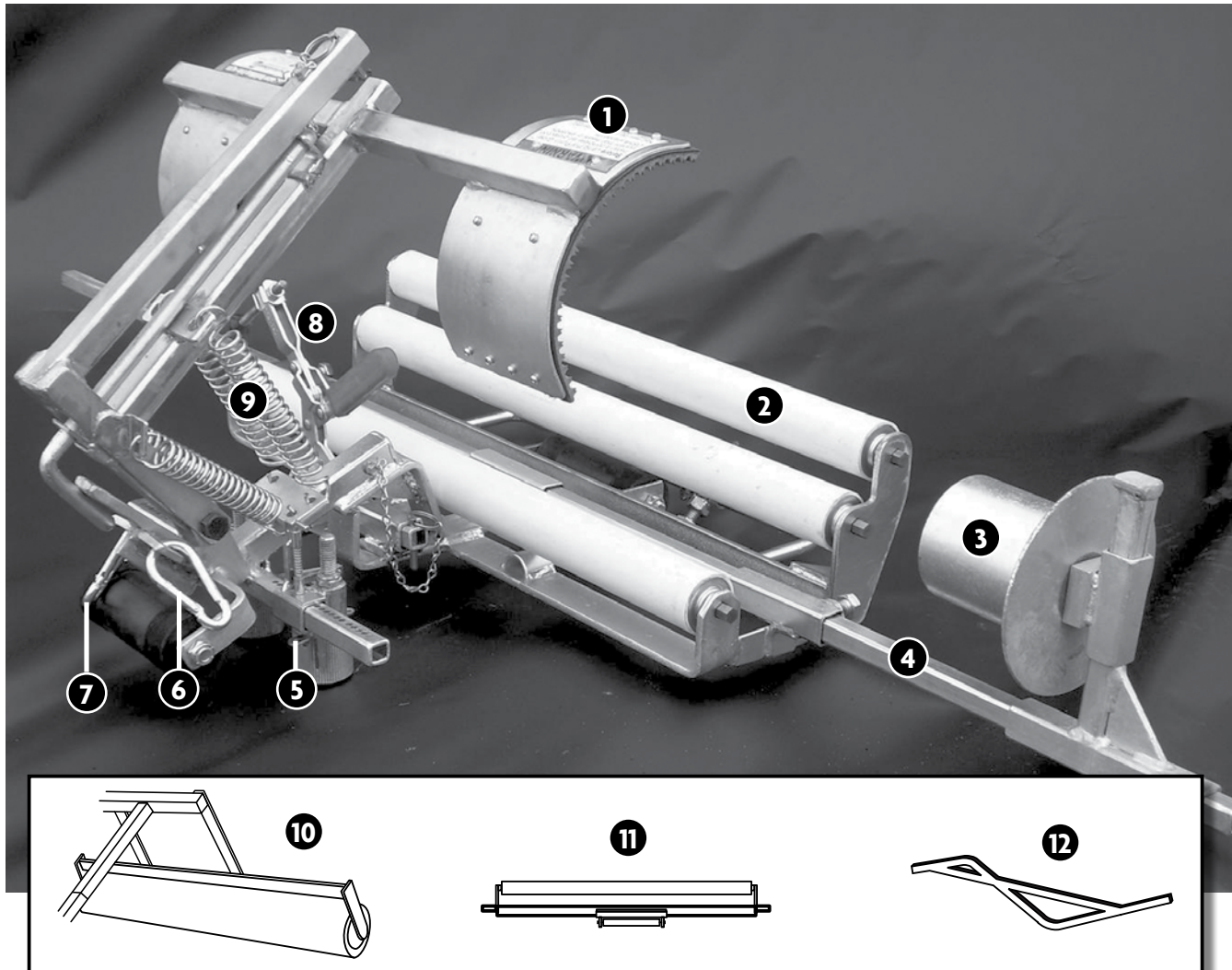
1. Utility knife to cut unfaced insulation and vapor retarder fabric.
2. Handsaw or reciprocating saw to cut rolls of fabric, if necessary.
3. Size 3/4 inch and 9/16 inch wrench or a crescent wrench, needle nose and regular pliers to adjust roll holders.
4. Screw guns to fasten the self-drilling tek screws at building eave.
5. Telescopic or scissor lift, or appropriate scaffolding.

Installation Instructions

Certified Installer Status

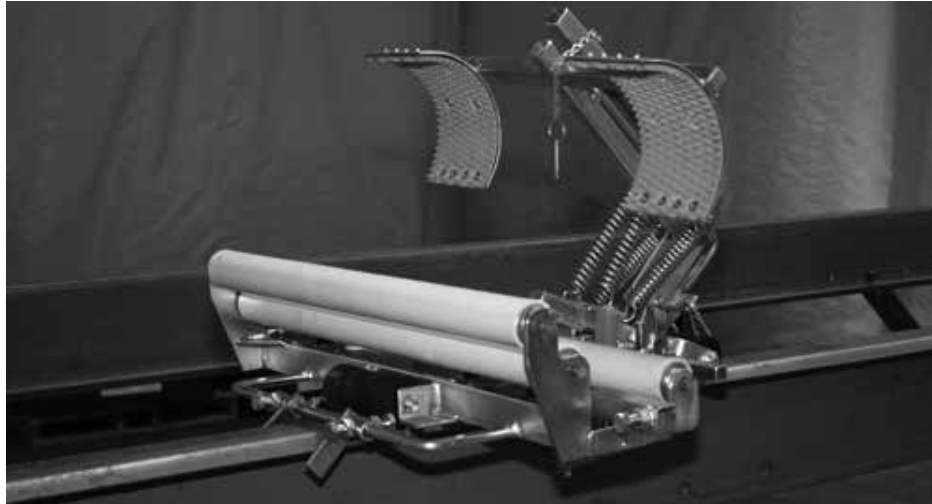
A certified installer must be present on the rooftop during all stages of the installation of the Purlin Glide FP System. Failure to meet this requirement voids the fall prevention feature of this insulation system and the warranty. If a certified installer is not present during installation, the contractor must provide an alternative means of fall protection. The Purlin Glide FP System offers leading edge fall prevention only. It is the contractor's responsibility to provide fall protection for other roof edges or whenever required by OSHA.

Purlin Glider Parts Identification



- | | | | |
|-----------------------|-----------------------|-------------------------------|-------------------------------|
| 1 Fabric Brake | 4 Extension | 7 Front Roller | 10 Tension Roller |
| 2 Roller | 5 Purlin Brake | 8 Clamp | 11 Trail Roll Cradle |
| 3 Roll Guide | 6 Carabiner | 9 Fabric Brake Springs | 12 Push Pole Z Adapter |

Three components of the Purlin Glide FP Insulation & Leading Edge Fall Prevention System



Purlin Glider



Purlin Glide Fabric Rolls



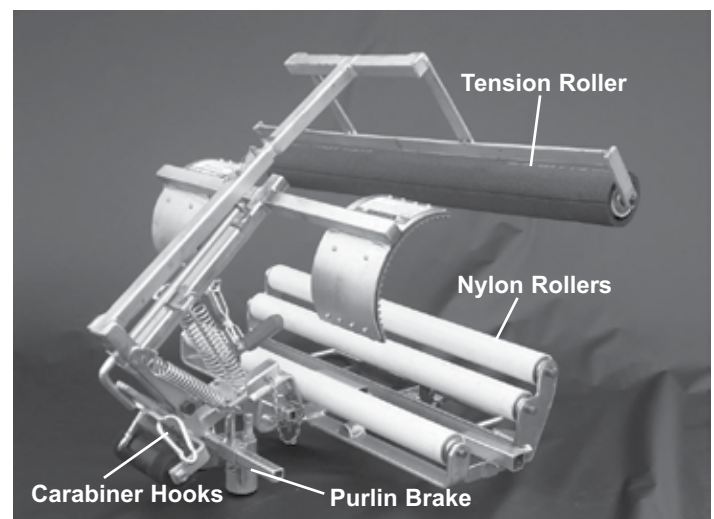
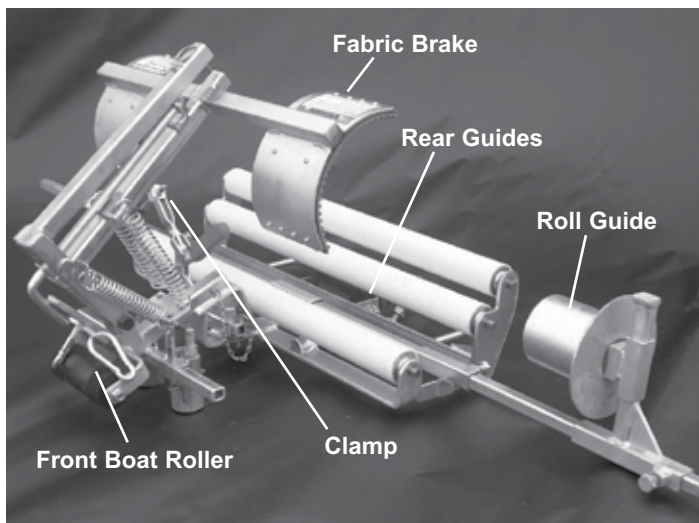
Unfaced Insulation

Purlin Glider Identification

The Purlin Glider is the key to a safe, clean installation of the Purlin Glide FP system. They are lightweight – only about 50 lbs. each. The quantity of Purlin Gliders needed on the jobsite is calculated based on the building size and fabric roll layout as determined by Silvercote Lamination.

When possible, the Purlin Gliders will be shipped with your unfaced insulation order. If timing does not allow the Purlin Gliders to ship with your unfaced insulation, they will be delivered separately to arrive at your jobsite at approximately the same time as the other necessary system components.

The Purlin Gliders are shipped in water resistant containers that are palletized, banded and poly wrapped. It is important to save the shipping pallet for use in packing and returning the Purlin Gliders to Silvercote Lamination.



Purlin Glide FP Fabric

The second key component of the Purlin Glide FP system is the fabric roll. These rolls are shipped with a protective outer film to reduce damage to the rolls during shipment and from harsh weather conditions. Each fabric roll is labeled with the roll size, job name, delivery address and contractor contact information.

Unwind arrows are placed on the roll to ensure the fabric will dispense properly when loaded into the Purlin Gliders. The fabric rolls will dispense from the bottom, with the white side toward the interior of the building. The unwind arrows will point in the direction you are roofing.



Lift straps are also included on the fabric rolls. The strap positions are carefully chosen to eliminate damage to the cardboard core when hand-carrying or hand-lifting the roll into position on the roof. Failure to use the suggested pick up points may cause damage to the core which will make it difficult or impossible to install properly. Do not use the lift straps for lifting the rolls to the roof with a crane or by other mechanical means. These straps are only taped in position and may shift.

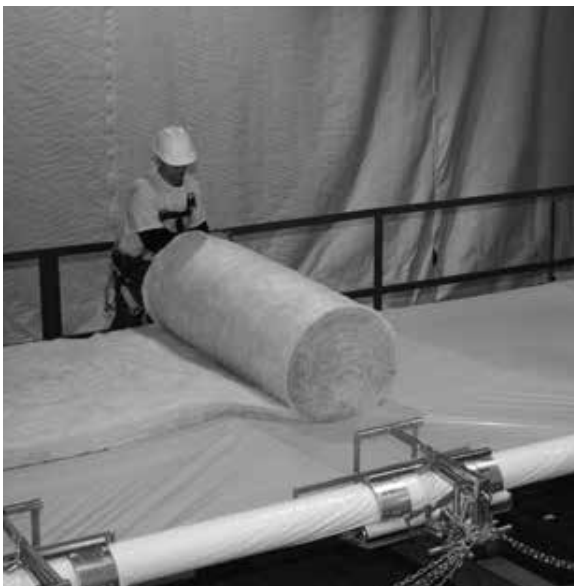
Each fabric roll fits a specific location on the roof. Refer to the Purlin Glide FP layout sheet that is provided with your order for information regarding the proper location of each roll provided.

The layout sheet must be followed exactly. Failure to use the fabric rolls in the proper position on the roof may result in fabric rolls falling short of the end of the roof or not providing the necessary 12 inches of fabric roll overlap that is required for fall prevention and proper, safe installation of the Purlin Glide FP System.



Unfaced Fiberglass Insulation

The last key component provided is the unfaced fiberglass insulation. It is available in R-values from R-8 to R-32, and is available as either a single layer (left picture) of insulation or a double layer (right picture) depending on your desired system total R-value. The number of layers would also be influenced by the type of roof panels used – screw down or standing seam.



Arrival of the Purlin Glide FP System

Upon arrival, remove all of the Purlin Glide FP equipment, fabric rolls and unfaced insulation from the truck. Do not drag fabric rolls across the floor of a truck's trailer. This will result in cuts or other damage. Be sure to note any damage on delivery receipt. Carefully review your order list to ensure that the order is complete. It is recommended that the Purlin Glide FP equipment and materials be stored in a secure, dry location if possible.

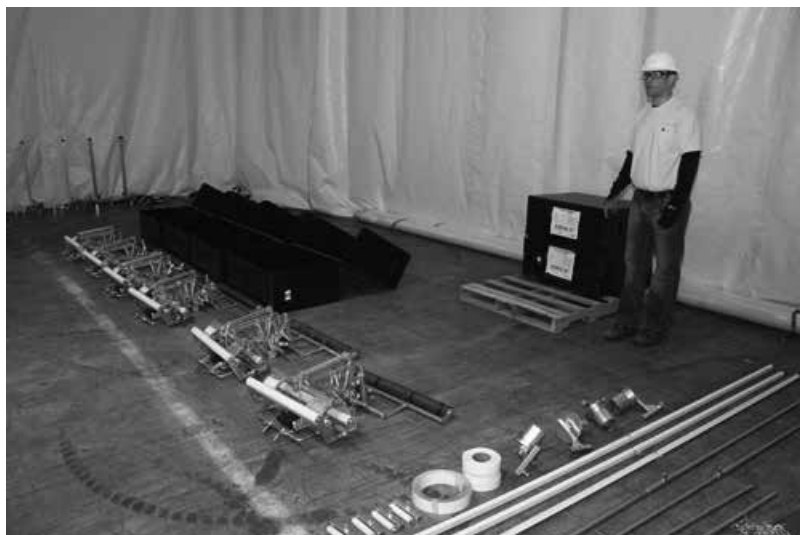
Remember to use the pick up straps provided when unloading the fabric rolls. Fabric rolls must be stored properly to ensure the cardboard cores do not become bent or warped. Store them only on a flat surface. Bent or warped fabric rolls will make it difficult to advance the Purlin Gliders and to install the fabric smoothly.



System Shake Out

Before setting up your Purlin Glide FP System, shake out all system components to verify you have received all the items necessary to install your system. The quantities of each item will be specified on your order acknowledgement and packing list.

Once the system shake out is complete and you have determined that all components necessary to begin roofing have been received, refer to the Purlin Glide layout sheet included with your system.



CAUTION

During the Set-Up Process, the Purlin Glide FP System does not provide fall prevention. Another form of OSHA-compliant fall protection **MUST** be used.

NOTE: For purposes of demonstration, the trainers shown throughout this manual are not on a roof where other fall protection is required; harnesses were worn during the demonstration as a visual reminder that fall protection is required until the Purlin Glide FP system is properly in place to provide leading edge fall prevention and for additional fall hazards other than the leading edge.

Two Approaches for Starting the Purlin Glide FP System

The first method involves working from a basket or platform off the endwall. With this method the Purlin Gliders are placed at an equal distance from the rake angle, approximately one foot away. This will make loading the fabric rolls into the Purlin Gliders simple. More importantly, it will help ensure the Purlin Glide FP System is started square and is kept square with the building, eliminating any potential wrinkling of the fabric rolls that may otherwise occur.



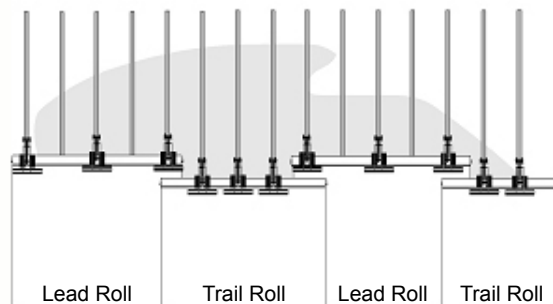
To use the second method, the Purlin Gliders are positioned on the purlins or bar joist from a basket or platform beneath the roof plane, approximately 8 feet from the endwall. With this method, the fabric is unwound from the gliders by a crewmember in a basket and the fabric is fed back to the endwall where another worker attaches it to the taped rake angle. The greater distance from the endwall can be helpful in getting a smooth, wrinkle-free start.



Purlin Glide FP System Setup

To begin setting up your Purlin Glide FP System, lock all the Purlin Glider fabric brakes in the open position. This should be done on the ground, before loading the Purlin Gliders onto the lift equipment.

Next, refer to the Purlin Glide FP layout sheet. Position the Purlin Gliders onto the purlins or bar joists as detailed in the layout sheet.



Note: A fabric roll 17' or wider will require 3 Purlin Gliders. A fabric roll less than 17' wide only requires 2 Purlin Gliders.

Adjusting the Purlin Glide FP Brake Drum

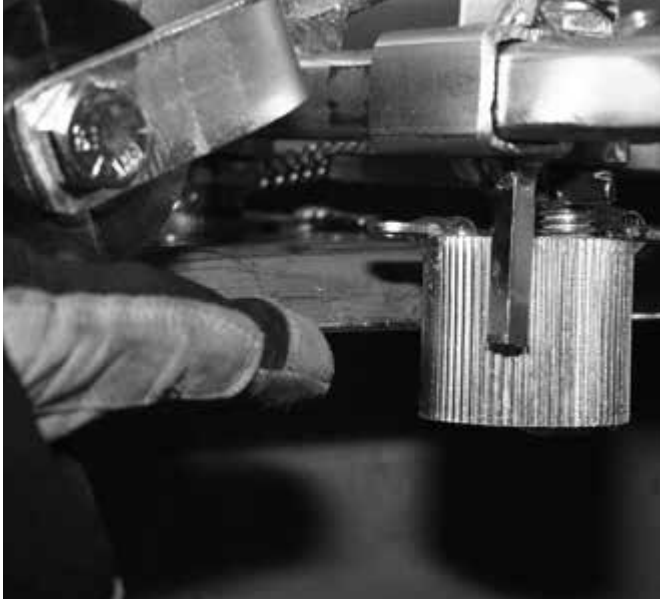
Adjust the purlin brake to fit the purlin or joist. Brake adjustment is achieved by removing the pin and sliding the brake in or out, depending on the purlin or bar joist top flange width. Proper fit is usually achieved with a brake width opening that is one half inch narrower than the purlin or bar joist top flange width.

The purlin brakes are properly adjusted if the Purlin Glider advances forward with little effort, but doesn't slide backward.



Adjusting the purlin brake drum depth is simple - loosen one nut and tighten the other. The optimum position for the brake drum is approximately half way down on the purlin or bar joist "lip".

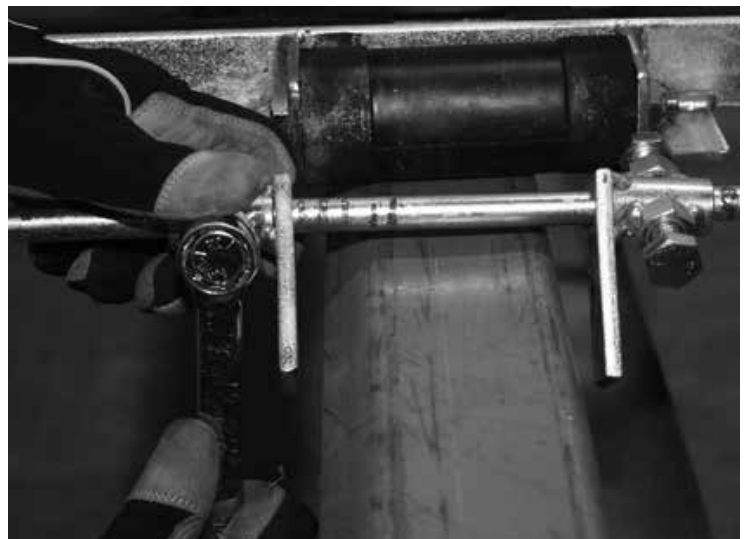
If the drums are not adjusted down far enough, it will create a hazard, as the Purlin Glider may disengage from the purlin or bar joist. If the brake drum is adjusted down too low, it may cause some interference with bracing and tends to increase the resistance when advancing the Purlin Gliders.



Installing the Clamp & Rear Guides

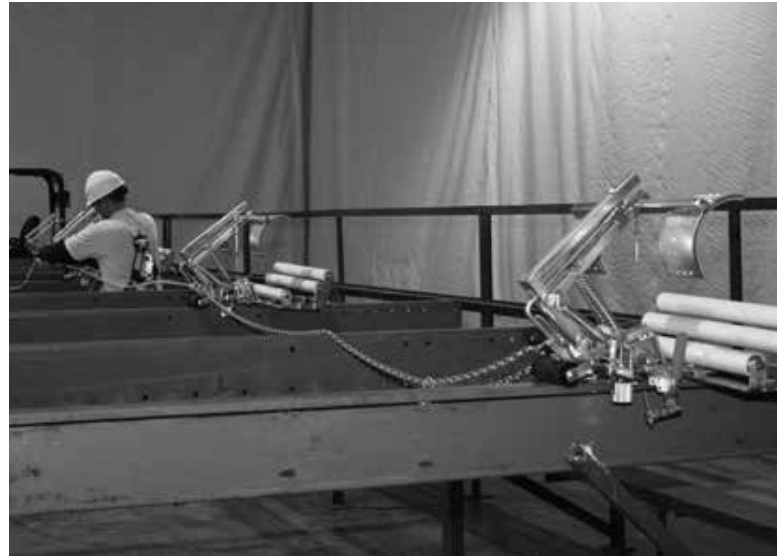
Install the clamp. This clamp is used to hold and steady the Purlin Gliders on the purlin or bar joist until the fabric roll is loaded.

Next, position and secure the rear guides at a 45 degree angle, leaving approximately a thumb width gap between the rear glide and the purlin or bar joist.



Chaining the Purlin Gliders Together

As the Purlin Gliders are positioned on the roof, chain together the Purlin Gliders that are being used to handle the same fabric roll. For example, if the roll is 17' wide, chain together the three (3) Purlin Gliders that will transport this one roll.



Loading the Fabric Rolls

Begin loading the fabric rolls once all Purlin Gliders are positioned on the roof according to the Purlin Glide FP Layout Sheet, are secured in place with the clamp, and are chained together.

When positioning the fabric rolls into the Purlin Gliders, be sure there is an equal fabric overlap of 12" on both sides of the last purlin or bar joist that is covered by that fabric roll. Trail rolls on a double-layer system will require 24" of overlap.

Note: When installing the lead fabric roll Purlin Gliders and trail fabric roll Purlin Gliders, be sure to maintain a minimum distance of 1½ feet between them. This will provide room to load the lead fabric roll without the trailing Purlin Gliders interfering.



Installing the Lead/Trail Extensions, Cradles & Roll Guides

After verifying the fabric roll is properly centered in the Purlin Gliders, insert the extensions, cradles and roll guides into the end of the fabric roll cores. Once inserted, tighten the extension locking bolt to ensure the fabric roll remains centered and does not “walk” down the slope of your building as roofing progresses.

Note: After all fabric rolls are loaded into the Purlin Gliders, the clamps can be disengaged and allowed to spring out of the way, avoiding any interference with the bracing.



CAUTION

The Purlin Glide FP system does not provide leading edge fall prevention until (1) the start up process is complete, (2) at least one run of roof panels have been positioned and secured, and (3) the lead and trailing Gliders have been advanced a minimum of six feet beyond the leading edge of the installed roof panels. Until this time, it is necessary to employ other means of OSHA-compliant fall protection. It is the responsibility of the contractor to meet all applicable OSHA guidelines.

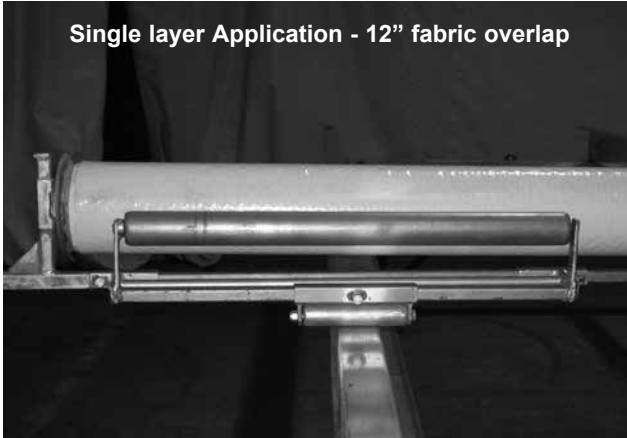
Cradles

In 2009, the cradle was added to the Purlin Glide FP System. This device is designed to be used primarily on the trail fabric rolls but, can effectively be used anywhere the fabric roll has to span an entire purlin space without the support of Purlin Glider.

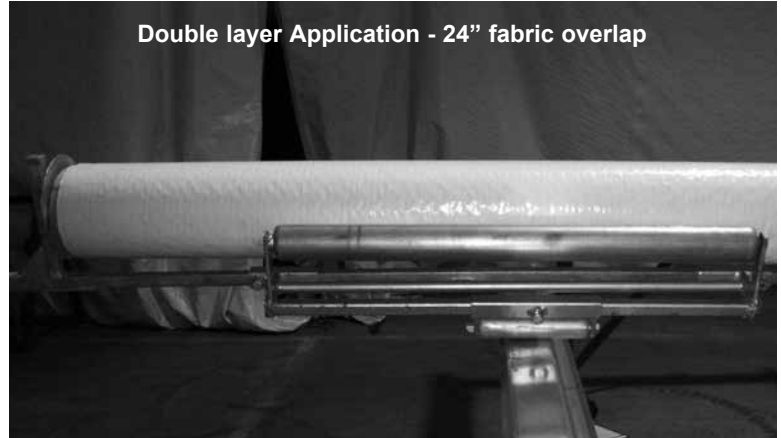
The placement of the cradles will be identified on the Purlin Glide FP Layout sheet.

The cradles are installed on to the identified extensions prior to installing the roll guides and secured with two 9/16 inch locking bolts. For single layer systems, the cradle should be positioned so that it is close to or even with the end of the fabric. For the double layer systems, the cradle should be positioned so it is approximately 1 foot from the end of the fabric.

Single layer Application - 12" fabric overlap



Double layer Application - 24" fabric overlap



Securing the Fabric

Install the two-sided tape to the rake angle and remove the release liner. Pull the fabric of the lead roll back and secure it to the rake angle. Now install the tension rollers and lower the fabric brakes onto the fabric rolls. The tension rollers help keep the fabric from lifting up in windy conditions.

Once this has been completed, perform the same steps with the trail rolls.

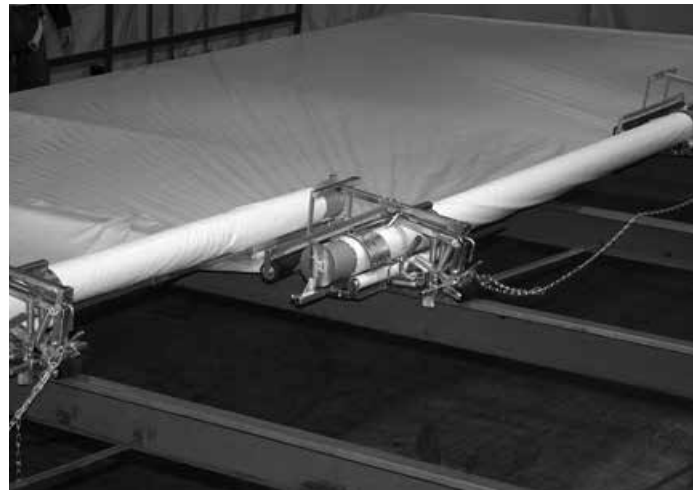
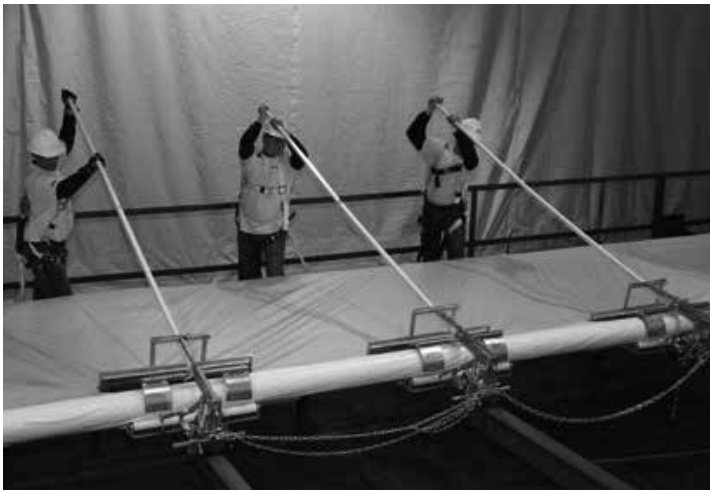


Advancing the Purlin Glide FP System

With a crew member for each Purlin Glider on a Lead Roll, lift up on the push pole to disengage the fabric brake. It is important that all crew members work together. When all are ready, begin to push out the gliders - low, slow and in unison to minimize wrinkles. Advance the gliders 12' to 15'.

Upon completion of the push out, lower the fabric brake and do a "bump out" that will tighten the fabric and eliminate any potential wrinkling. Repeat this process for the other lead fabric rolls and advance the trail fabric rolls in the same manner.

When advancing the trail fabric rolls, it is necessary to maintain a minimum distance of 1½ feet between the lead fabric rolls and trail fabric rolls. Failure to do so will not leave sufficient distance to do the final bump out to tighten the fabric. When all fabric rolls have been advanced, remove the push poles and place them out of the way to avoid creating tripping hazards.

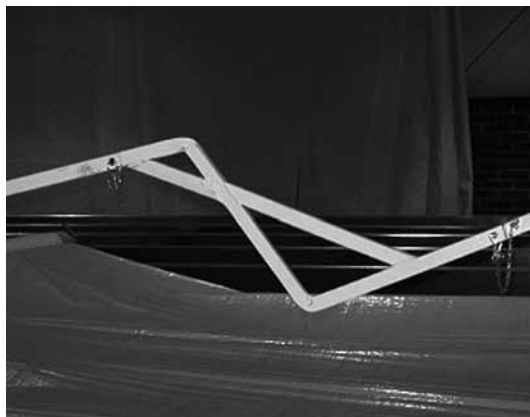


Push Pole Z Adapter

Another new addition to the Purlin Glide FP System in 2009 is the Z Adapter. The Z Adapter provides two primary advantages over using the straight push pole:

1. Allows the user to push the rolls out approximately 3 additional feet over the current set up.
2. Decreases the angle and height the push pole must be raised to release the fabric brakes.

To install, simply place between the two straight push pole pieces and pin together.



Securing the Fabric to the Eave Strut

Before installing the insulation, secure the Purlin Glide FP fabric to the eave strut. This is done by rolling the 12" (or 24" if installing a double layer system) of excess fabric into 1 - 1½ inch wide strips and securing them to the top of the eave strut with a provided screw and washer. The excess must be firmly fastened every 24" to 30" for the entire length of the building.

We recommend using the supplied ¾" Tek screws for this step.

Use caution not to allow the Purlin Glide FP fabric to interfere with the closure designed by your metal building manufacturer.



Installing the Unfaced Insulation

Depending on the total pre-installed R-value, you will be placing either a single or double layer of insulation on the installed fabric rolls. To install a single layer of insulation, simply unroll the unfaced insulation down the slope of the building, perpendicular to the purlins. Extra insulation extending beyond the eave should be trimmed and used on the next run.



To install a double layer of insulation, the bottom layer is placed between and parallel with the purlins. The width of the bottom layer of insulation provided will be custom cut to a width smaller than the purlin or bar joist space to allow proper sag. Once the bottom layer of insulation has been installed, the top layer of insulation is laid perpendicular to the purlins in the same manner as described for a single-layer system. Next, install your roof sheets according to your metal building manufacturers' specifications. Repeat this process for the entire length of the building.

Roofing with Purlin Glide FP Providing Leading Edge Fall Prevention

Now that at least one run of roof sheets are screwed into place and the fabric rolls are advanced a minimum of 6" from the leading edge with the fabric brake engaged, the Purlin Glide FP System can be considered leading edge fall prevention.

It is necessary for the installing contractor to provide some form of OSHA-compliant edge-of-roof warning behind and to the sides of the Purlin Glide FP system. Installers must be protected from fall hazards that are not covered by the Purlin Glide FP System.



Splicing



CAUTION

During the splice process, the Purlin Glide FP System does not provide fall prevention. Another form of OSHA-compliant fall protection MUST be used.

On large projects, the building length may be too long to complete with one continuous roll of Purlin Glide FP fabric, therefore a splice will be needed. Splices should typically be made above a rafter so that after installation is complete, it will not be noticeable from the building interior.

Near the end of the first set of fabric rolls, a yellow warning tape will indicate that this is a splice location. At this point, discontinue use of that fabric roll and begin making preparations to splice. Never roof beyond the warning tape. The Purlin Glide FP system does not provide leading edge fall prevention once the yellow warning tape appears.



To make a splice, install the provided splice strip across the width of the building. Secure the splice strip to the top of each purlin or bar joist using a self-drilling fastener and washer.



Run two-sided tape the length of splice strip. After applying the tape, cut the old fabric rolls off approximately 6"-8" in front of the splice strip and fold the fabric back onto the two-sided tape.

Next, firmly apply another run of two-sided tape the length of the splice on top of the fabric that has been folded back. At this point, remove the used fabric rolls from the gliders and load the new fabric rolls.



To do this, lock the fabric brakes in the open position and engage the clamps in order to hold the Purlin Gliders in place. Next, unlock and slide the roll guides out from the end of the fabric roll core. Remove the used fabric rolls from the gliders and from the roof. Reload the Purlin Gliders with the new fabric rolls. After verifying the correct fabric overlap, reinstall the extensions, roll guides and securely tighten.

Pull the fabric back and attach to the two-sided tape that you previously applied to the cut fabric at the splice strip location.



System Shut Down



During system shut-down, roof panels should be installed up to the back of the trail rolls. Upon continuing the roofing process, the gliders will initially be less than six feet ahead of the leading-edge roof panel. For these reasons, an alternative means of fall protection must be employed during this time. Once the gliders are advanced more than six feet ahead of the leading edge of the installed roof, the system can be considered leading edge fall prevention.

The Purlin Glide FP System will need to be properly shut down for any of the following situations: inclement weather, the end of the work day, or any time the jobsite will be unattended for an extended period of time. Proper system shut-down will help ensure the unfaced insulation remains dry and will also help keep the Purlin Glide FP fabric secure, in the event windy conditions occur.

To begin shutting the system down, install roof panels as close as possible to the trail rolls.

Beginning with the trail fabric rolls, insert the push poles into the Purlin Gliders and push down on the push poles. This will release the purlin brakes allowing the Purlin Glider to slide backward.

Next, leaving all components connected and with a person on each glider, begin rolling the Purlin Gliders back onto the roof deck. Repeat this process for the remainder of the trail fabric rolls, and then repeat for all the lead fabric rolls

The Purlin Glide FP System is properly shut down.



Restarting the Purlin Glide FP System

To restart the Purlin Glide FP system, start by rolling the lead gliders forward, reconnecting the purlin brakes onto the purlin or bar joist. Next, roll all of the trail gliders forward, making sure the purlin brakes are properly re-connected.

As with system start up, leading edge fall prevention is not re-established until all Purlin Glide FP fabric rolls are a minimum of 6 feet ahead of the leading edge of the roof.



Roof Top Obstructions

If banding is installed on top of the purlins or a purlin sag angle brace is present, the Purlin Gliders will need to pass over the obstruction. To accomplish this, advance the Purlin Gliders to the obstruction. Push down on the push poles to disengage the purlin brakes and bump the Purlin Gliders forward over the obstruction. Once the obstruction is cleared, lift up on the push pole and advance forward, locking the purlin brake back onto the purlin. When possible, do not pre-install banding. Instead, install it on top of the fabric as you are roofing.



Rooftop units and framed openings not shown on the framing plan should be conveyed to Silvercote Lamination. All attempts will be made during the system design to avoid having a Purlin Glider in those areas, but in some cases the glider will have to be lifted up and over that area. Where possible, cut all rooftop units in after the roof has been installed or the fabric has been advanced beyond that area.

Finishing the Roof



Once you are within 6' of the end of the roof, the Purlin Glide FP System will no longer provide leading edge fall prevention. When roofing the last 6', and during the removal of the fabric rolls and Purlin Gliders from the roof, an alternative means of fall protection must be employed.

Although the fabric rolls have a warning tape indicating that 6' remain until the end of the fabric roll, the fabric rolls are often several feet longer than needed to complete the entire length of the building. For this reason, it is the responsibility of the Silvercote-certified Purlin Glide FP Installer to recognize when the roofing process is within 6' of the end of the building and to make sure workers are tied off or are employing other means of OSHA-compliant fall protection when finishing the final roof area.

To complete installation of the Purlin Glide FP system, advance the lead rolls to within a few feet of the end of the roof followed by the trail rolls.

There is no longer any need to maintain the 1½" distance between the lead and trail rolls, as installation will be finished manually. Once all gliders are near the rake angle, install roof panels up to the back of the trail fabric rolls. After locking all fabric brakes in the open position, reconnect the clamps. Remove the tension rollers and place them at a safe distance behind the roofing crew on the finished roof deck.



Unlock and remove the roll guides from the Purlin Gliders and from the end of the cardboard fabric cores, placing them on the roof deck at a safe distance behind the roofing crew.



Remove all of the used fabric rolls from the Purlin Gliders and set them down directly ahead of the leading edge of the roof. With all the chains still attached, disengage the clamp and bring the Purlin Gliders back onto the finished roof deck and place them at a safe distance behind the roofing crew.

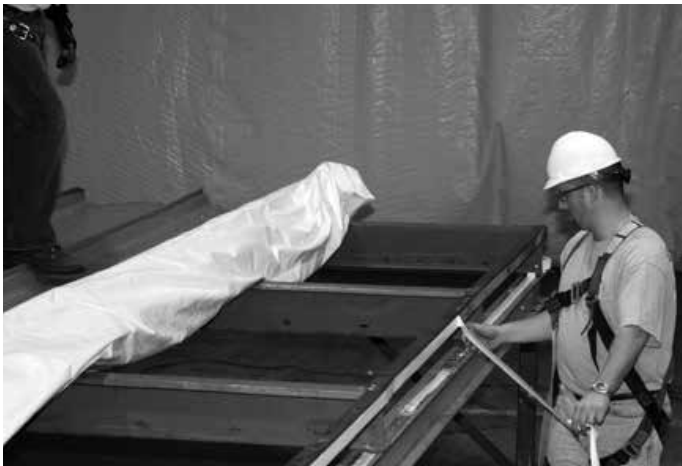


Manually Finishing the Roof

To manually finish the roof, apply two-sided tape to the rake angle and roll out the fabric a minimum of 2' longer than what is needed to cover the remainder of the roof.

Attach the fabric to the two-sided tape.

After cutting the fabric, be careful not to drop the remainder of the fabric rolls off the end of the building.



Trimming the Fabric Overlap

The 12' fabric overlap that is required for fall prevention needs to be trimmed off prior to or upon completion of your Purlin Glide FP installation. If trimming progressively as the roof is being installed, please be sure not to trim the fabric overlap beyond the last secured roof panel. Trim the fabric as close to the secondary steel as possible using a Silvercote Lamination-supplied letter opener or hook blade utility knife. Be careful not to cut the installed Purlin Glide fabric.

Returning the Equipment to Silvercote

Call Silvercote Lamination at 844-232-3701 to notify us of completion of your project or contact your local Silvercote Lamination sales representative. We will make all arrangements for the Purlin Glide FP equipment to be picked up. Often this is done within 24 hours, once scheduled. There is no paperwork necessary. Gliders and other equipment must be palletized and loaded when the truck arrives.

If you have any questions regarding an upcoming project, please contact Silvercote Lamination at 844-232-3701.

