

POST FRAME BUILDING RETROFIT

Installation Instructions

There are three popular methods used to insulate existing post frame structures.

Each is discussed in detail.

- Faced fiberglass blanket insulation
- The Energy Saver Retrofit System
- Steel liner panels combined with blanket insulation

Faced Fiberglass Blanket Insulation

This system is installed within the purlin spaces and is a good choice for buildings where obstructions make it difficult to fasten to the bottom of the rafters. Consisting of faced blanket insulation and white steel banding, it is an easily installed attractive product which requires minimal hardware. Available R values range from R-10 to R-30 although since roof purlins are usually 4" tall the typical request is for R-13.

Roof

We custom laminate faced blanket insulation to fit parallel to the roof purlins (which are generally 24" on center). Facing tabs are overlapped at the bottom of the purlins to improve appearance and provide vapor retarder consistency. We highly recommend "seal tabs" (factory applied double stick tape). This low cost option saves time, improves appearance, and enhances vapor retarder consistency. White steel banding is installed perpendicular to the purlins for support. Best results are achieved by positioning the end of each fiberglass roll above one of the roof rafters.

Step 1: Cut the faced blanket insulation to the desired length (one or two bay lengths) taking care to keep it clean and dry.

Step 2: Fasten one piece of banding to the eave strut and ridge purlin in the middle of each bay. This band is used to support the fiberglass during step 3. For wide buildings, it will be helpful to fasten the banding to additional purlins – approximately every 12'.

Step 3: Position the insulation within the purlin spaces using the banding installed during Step 2. Additional temporary support can be provided using bungee cords, small pieces of wood cut at a length to friction fit from purlin to purlin, etc.

Step 4: Overlap the tabs underneath the purlins. If you purchased the optional seal tabs, pull the release paper from the tape and adhere to the adjacent roll. When you reach the banding that was installed during Step 2, temporarily remove the fastener while you wrap the tabs at that point. Replace the fastener.

Step 5: Install additional strands of banding 30" on center from eave to ridge and back to the opposite eave using TEK screws or galvanized nails.

Walls

Laminated faced blanket insulation is produced to fit within the wall columns and field cut to fit from the eave to the floor. Facing tabs (also available with optional seal tabs) are lapped across the front of the columns to achieve vapor retarder consistency and improved finished appearance. White banding can be installed perpendicular to the wall columns for added support.

Step 1: Cut 24" pieces of Insul-Hold strap (a system component) and fasten to the wall girts approximately 36" to 48" on center. Bend the punched shape resembling an arrow inward at a 45-degree angle.

Step 2: Cut the faced blanket to the desired length (generally the eave height plus a few inches) taking care to keep it clean and dry.

Step 3: Position the insulation within each column space and impale it onto the Insul-Hold arrows for support – taking care not to push so hard as to penetrate the facing material. Fasten to the eave strut at the top and to the base girt or other framing at the bottom using TEK screws or galvanized nails with white poly washers (available from Silvercote LLC.).

Step 4: Lap the facing tabs across the front of the columns.

Step 5: Install white steel banding perpendicular to the columns and fasten with TEK screws or galvanized nails.

Energy Saver System – Retrofit Application

This system is installed at the bottom of the wood rafters and consists of a cross woven polyethylene film/vapor retarder supported with banding. The insulation used can either be unfaced fiberglass blanket or blown fiberglass.

Roof - Fiberglass Blanket Insulation

Step 1: When using fiberglass blanket insulation, installation begins by installing support banding 48" on center from endwall to endwall. Fasten the banding to the bottom of each wood rafter at the point where they intersect. Note that depending on the distance from rafter to rafter; it may save time to fasten to every other rafter during this step.

Step 2: Unroll the fiberglass insulation from sidewall to sidewall using the banding for support.

Step 3: The vapor retarder/support film is a cross woven polyethylene film supplied in rolls that are custom produced to fit your building. Place the rolls on/above the banding and beneath the fiberglass.

Step 4: Deploy the fabric down the length of the building overlapping the adjacent roll of fabric by approximately 12" +/- . When you reach the intersection with a rafter, temporarily remove the fastener that connects the banding to the rafter. Move the fabric past that intersection and smooth the fabric. Replace the fastener. Each roll of fabric should be adhered to the adjacent roll with double stick tape or adhesive. These accessories are available from Silvercote.

Roof - Blown Fiberglass Insulation

Step 1: Install support banding 48" on center from endwall to endwall. Fasten the banding to the bottom of each wood rafter at the point where they intersect. Depending on the distance from rafter to rafter, it may save time to fasten to every other rafter during this step.

Step 2: The vapor retarder/support film is a cross woven polyethylene film supplied in rolls that are custom produced to fit your building. Place the rolls on/above the banding.

Step 3: Deploy the fabric down the length of the building overlapping the adjacent roll of fabric by approximately 12" +/- . When you reach the intersection with a rafter, temporarily remove the fastener that connects the banding to the rafter. Move the fabric past that intersection and smooth. Replace the fastener. Each roll of fabric should be adhered to the adjacent roll with double stick tape or adhesive. These accessories are available from Silvercote.

Step 4: Stop every 12' to 16' and blow the fiberglass insulation on to the fabric. Repeat the process until you reach the end of the building.

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Important note: It is a critical design feature that adequate ventilation be a part of the building system in order to properly control condensation.

Walls

Most Energy Saver wall systems are single layer applications of R-19, R-25 or R-30, depending on available girt depth.

Step 1: Cut 24" pieces of Insul-Hold strap (a system component) and fasten to the wall girts approximately 36" to 48" on center, with the arrows pointing up. Bend the arrows inward at a 45-degree angle.

Step 2: Unfaced insulation is provided in roll widths of 36", 48", 60", 72" or 93" and would be chosen based on your preference and building dimensions. Cut pieces of insulation to the eave height plus 3" for a tight fit. Place the insulation within the girt space and impale it onto the Insul-Hold arrows for support.



Step 3: The vapor retarder/support film is a cross woven polyethylene film supplied in rolls that are 20' wide and 100' long. Depending on the eave height and column spacing, the fabric may be installed from the ground to the eave or from endwall to endwall. Unwrap and position the Energy Saver fabric against the columns - taking special care to keep it clean. Temporarily clamp it in position.

Step 4: Install a series of horizontal bands (an included system component) 48" on center from end wall to endwall. Fasten the banding to each column at the point where they intersect making sure that the fabric is tight and smooth.

Steel Liner Panels & Fiberglass Insulation

This system is installed at the bottom of the wood rafters and consists of fiberglass insulation combined with a vapor retarder and steel liner panels.

Roof

Step 1: This method requires temporary support of the insulation. Install banding from endwall to endwall 72" on center to the bottom of each wood rafter at the point where they intersect.

Step 2: Unroll the fiberglass insulation from sidewall to sidewall supporting it with the banding installed during step 1.

Step 3: It is our recommendation that a good quality vapor retarder material be positioned beneath the insulation - supported by the bands. Regardless of the direction this is installed, each roll of facing should overlap the adjacent roll by 6"-12". During deployment and depending on the vapor retarder dimensions, you may need to temporarily remove some of the fasteners installed during Step 1. Slide the vapor retarder past that point and replace the fastener.

Step 4: Install steel liner panels to the bottom of the purlins per manufacturer recommendations.

Walls

Step 1: Install 2'x4' nailers to the inside of the wall columns; parallel to the girts. These nailers will provide the framing to which the liner panels will be fastened.

Step 2: Unfaced blanket insulation of the desired R value (it is recommended that you completely fill the cavity from the liner panel to the wall panel to avoid condensation) can be deployed between the wall girts and the nailers you installed during Step 1. Friction between the fiberglass and the wood is generally sufficient to support the fiberglass. If you have any concern that the fiberglass may settle, you can mechanically fasten (staple, nail, etc.) it to the eave strut, rack angle or other framing near the top of the walls.

Step 3: Staple a good quality vapor retarder to inside of the nailers installed during Step 1.

Step 4: Install steel liner panels to the bottom of the purlins per manufacturer recommendations.



Background & Additional Information

Silvercote LLC. takes great care in the manufacture and lamination of your faced fiberglass insulation to help insure that the products will deliver their maximum possible thermal performance. Our fiberglass insulation is manufactured to exacting standards that include control of such key items as fiber diameter, binder content and roll compression. In our lamination process we use hot melt adhesive technology and surface rewind systems that improve recovery over traditional water-based adhesive and center wind systems. It is equally important that the material be installed correctly in order to provide maximum in-place thermal performance.

Because fiberglass insulation works by trapping air between the interwoven fibers, it is important to allow it to recover to its maximum thickness in order to optimize performance. Proper installation involves placing the insulation with enough drape over the purlins or girts to allow it to recover to its full thickness in the central zone of the purlin or girt space.

Because faced fiberglass insulation often provides the finished appearance on the interior of the building, **it is not uncommon for the installer to apply excessive tension to the insulation during installation in order to create a smoother interior finish.** Doing so is likely to prevent the insulation from recovering to its maximum possible thickness and **which would not allow the material to perform as designed.**

**PLEASE CONTACT YOUR SILVERCOTE SALES REPRESENTATIVE
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