

NEW CONSTRUCTION WALL DETAILS

SIMPLE SAVER SYSTEM[®] INSTALL INSTRUCTIONS

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E-mail us at: custserv@thermaldesign.com



SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

INTRODUCTION

Thermal Design is the nation's leader in the ongoing development of thermal insulation technologies for pre-engineered and other non-residential buildings.

Born out of a successful contracting business, Thermal Design brought together practical methodology and cost efficient materials to solve the problems of insulating pre-engineered buildings. With well over 40,000 installations to date, the Simple Saver System® is still being improved with superior quality control of materials and installation procedures. A new United States Patent was issued covering the use of the Simple Saver System® as a means of providing fall protection for insulation and roofing workmen. Because of the life saving importance, Thermal Design has included this recently patented feature in the standard Simple Saver System® without any extra charge. Due to the critical, life-dependent importance of the materials and installation, only legitimate, quality controlled Simple Saver System® materials, installation drawings and instructions should be used. By rights granted under U.S. patent law, only authorized licensed distributors will be allowed to sell the products used in the patented systems and marketed under the Simple Saver System service mark.

The content of this manual contains proprietary information, drawings and instructions which are copyrighted and made available for use under the shrink wrap license agreement on the cover or the wrapper of this manual. This manual and associated video tapes, CD's, software and other documents covered under the license agreements remain property of Thermal Design, Inc. and are solely intended for the exclusive use with the legitimate materials and systems of Thermal Design.

We request that all designers and users only allow the purchase of legitimate materials from authorized sources and follow installation drawings and instructions to assure satisfactory performance of the products. We take job site safety very seriously and we expect that no exceptions will be allowed that breaches the integrity of our quality control processes. A persons life could depend on it! Caution! Look-a-like products designed to be sold put workmen and end users at risk of installed product failures. Experience can not be copied!

Technical information, support and quotations may be obtained by calling Thermal Design at (800) 255-0776 or an authorized Simple Saver System® distributor.

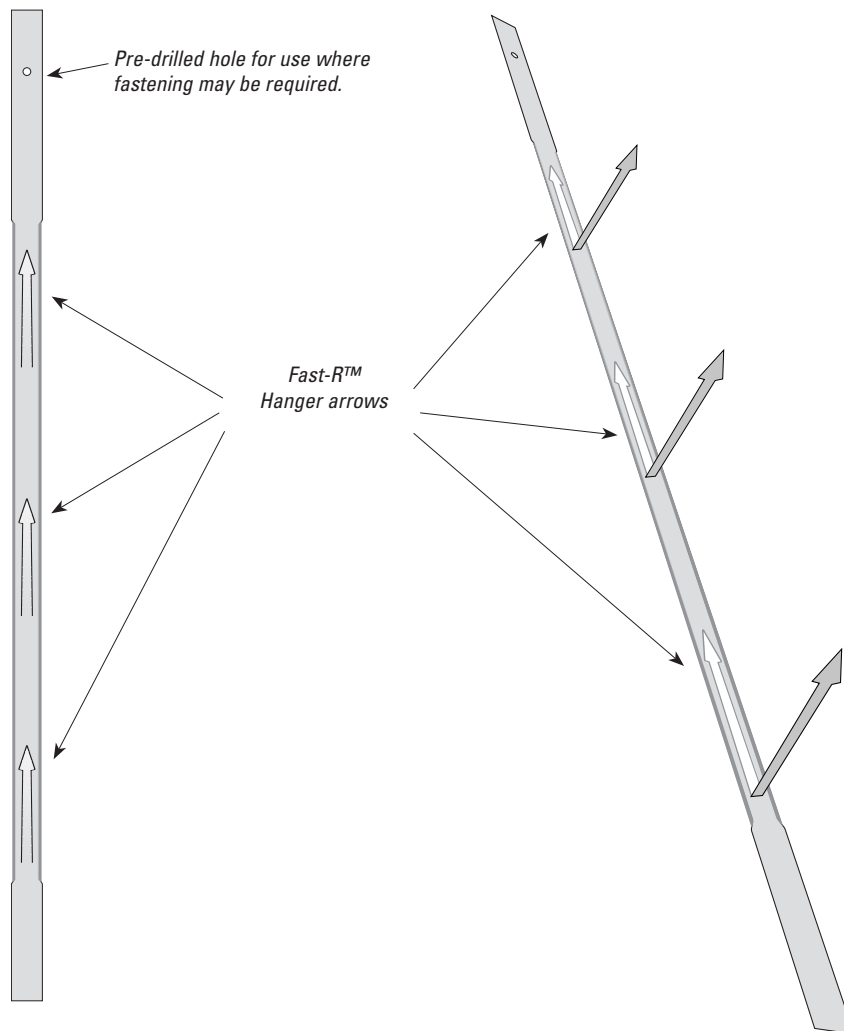
Thermal Design is dedicated to improving the quality and performance of these multipurpose systems for insulating pre-engineered buildings and providing an economically desirable means of building energy efficient buildings.

SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

FAST-R™ HANGER INSTRUCTIONS

Fast-R™ hangers have been developed to quickly hang Simple Saver blanket fiberglass wall insulation. They are pre-cut metal strips with barbed arrows punched into them every 8" on center. These special hangers are shipped in boxes of 80 pieces, which will cover approximately 1000 sq. ft. with girts spaced 48"-96" apart.

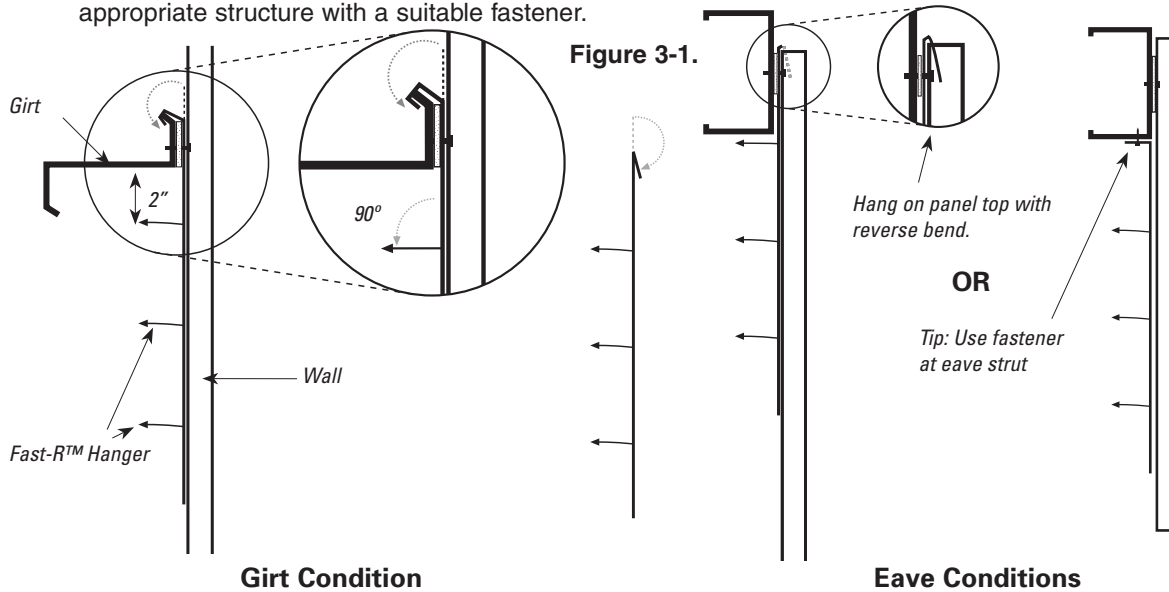
(Narrow girt spaces, such as 24", may not require hangers if insulation will support itself.)



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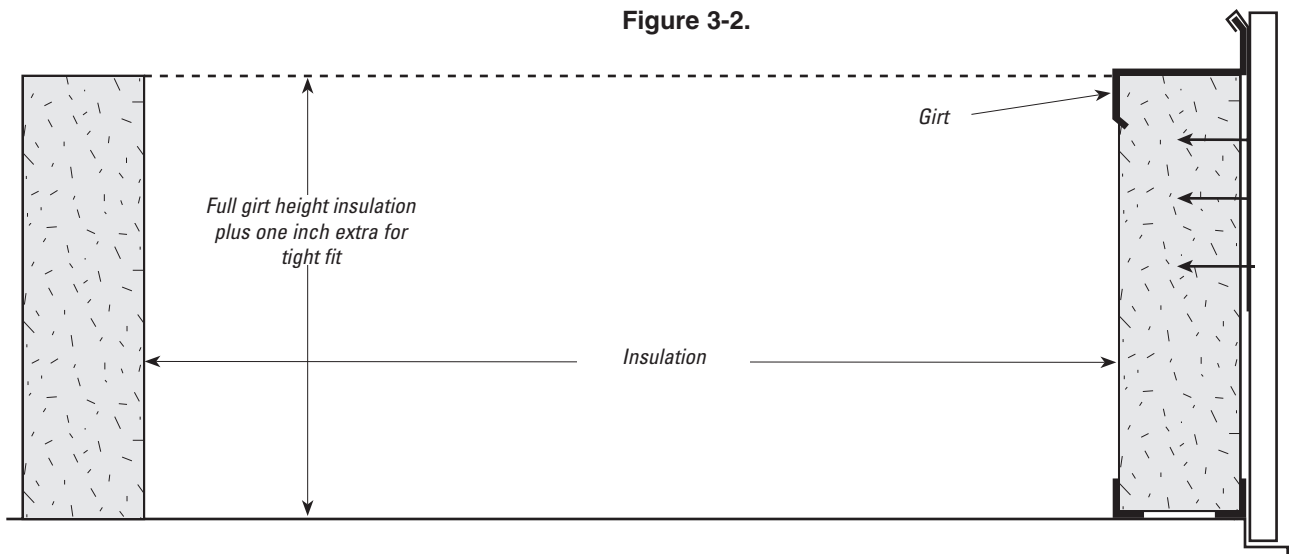
FAST-R™ HANGER INSTRUCTIONS

Step 1: Start at one end of the wall area to be insulated. Remove a Fast-R™ hanger from the box and bend the three barbed arrows perpendicular (90°) to the main body of the hanger. From the interior of the building, slide the top end of the hanger upward between the girt and the tight wall panel until the end protrudes above the girt lip approximately 1.5". Do not install in corrugations of the panels! In some instances fastening may be required. Bend this protruding end sharply inward around the girt lip to secure the Fast-R™ hanger. Typically two hangers are placed per 60" or 72" insulation blanket width or symmetrically, 30" to 36" apart, respectively. Ideally, hangers positioned 15" or 18" from each side of the blanket, respectively. If any part of the building structure does not allow the above hanging process, simply fasten the hanger to an appropriate structure with a suitable fastener.



INSTALLING THE INSULATION

Step 2: Cut the insulation to fit exact length between girts, plus one inch extra. Shake insulation to aid in maximum thickness recovery. Carefully lift up the insulation blanket into position setting the bottom of the insulation into the insulation space first, tilt it and impale it on the barbed arrows. Bend the arrow heads up to lock insulation in position starting at the top arrow and gently pull and fluff the insulation to full uniform thickness around the rigid supporting arrows. Insure that there are no gaps between the insulation and the girts nor any gaps between insulation batts.

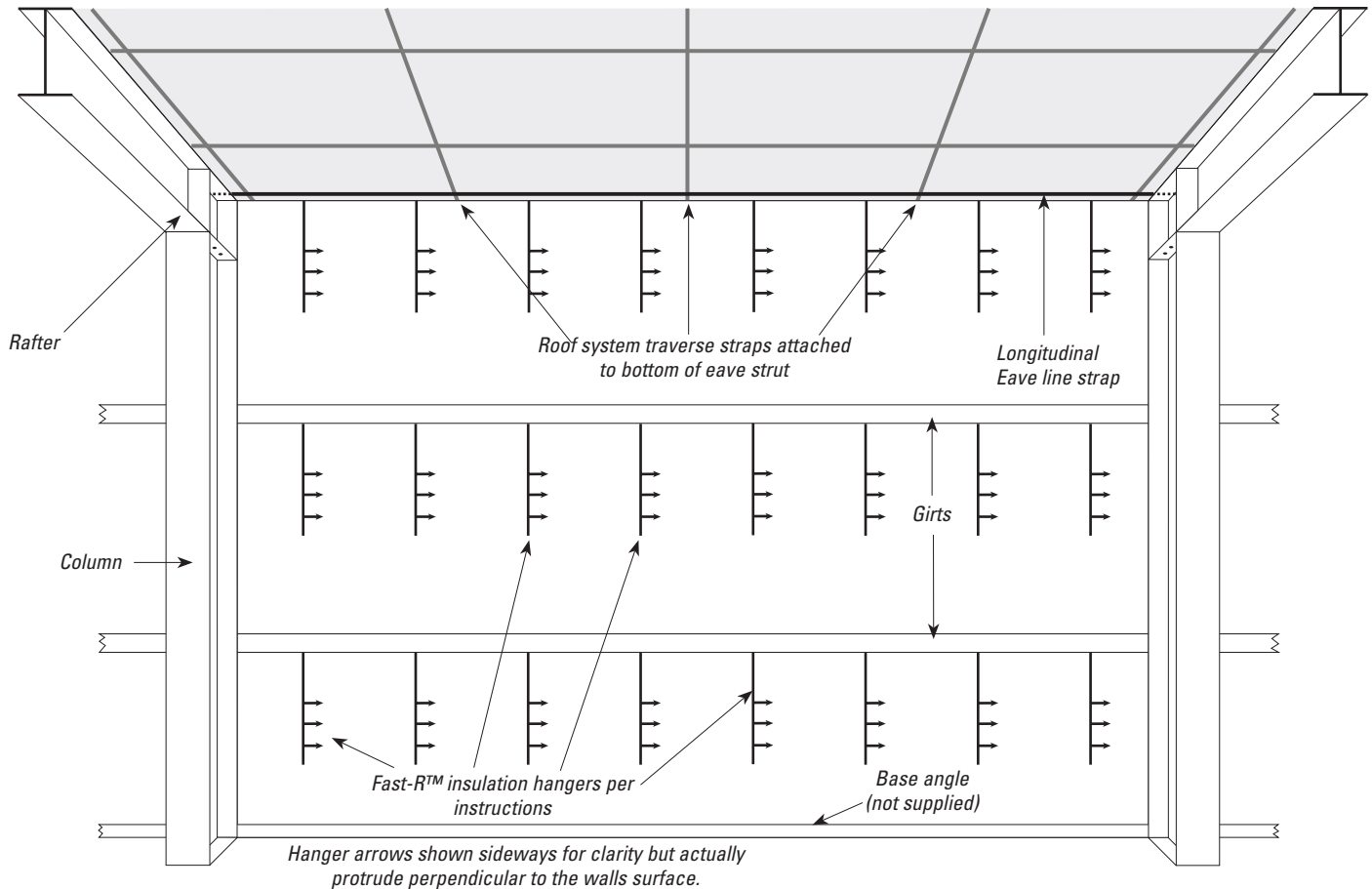


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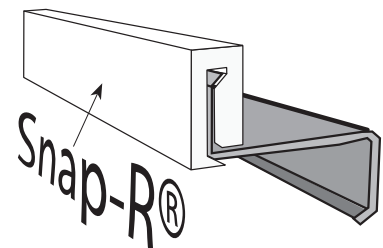
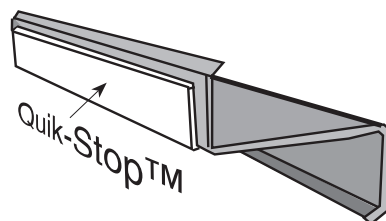
EAVE LINE STRAP INSTALLATION

Step 3: If the eave line strap was not installed along with the longitudinal roof straps, it must now be installed below the traverse ceiling straps from rafter to rafter. Cut the eave line strap the length of the bay (e.g. 20 feet for 20 feet long bay spacing) and install it plumb with the inside plane of the girts.

Figure 3-3.



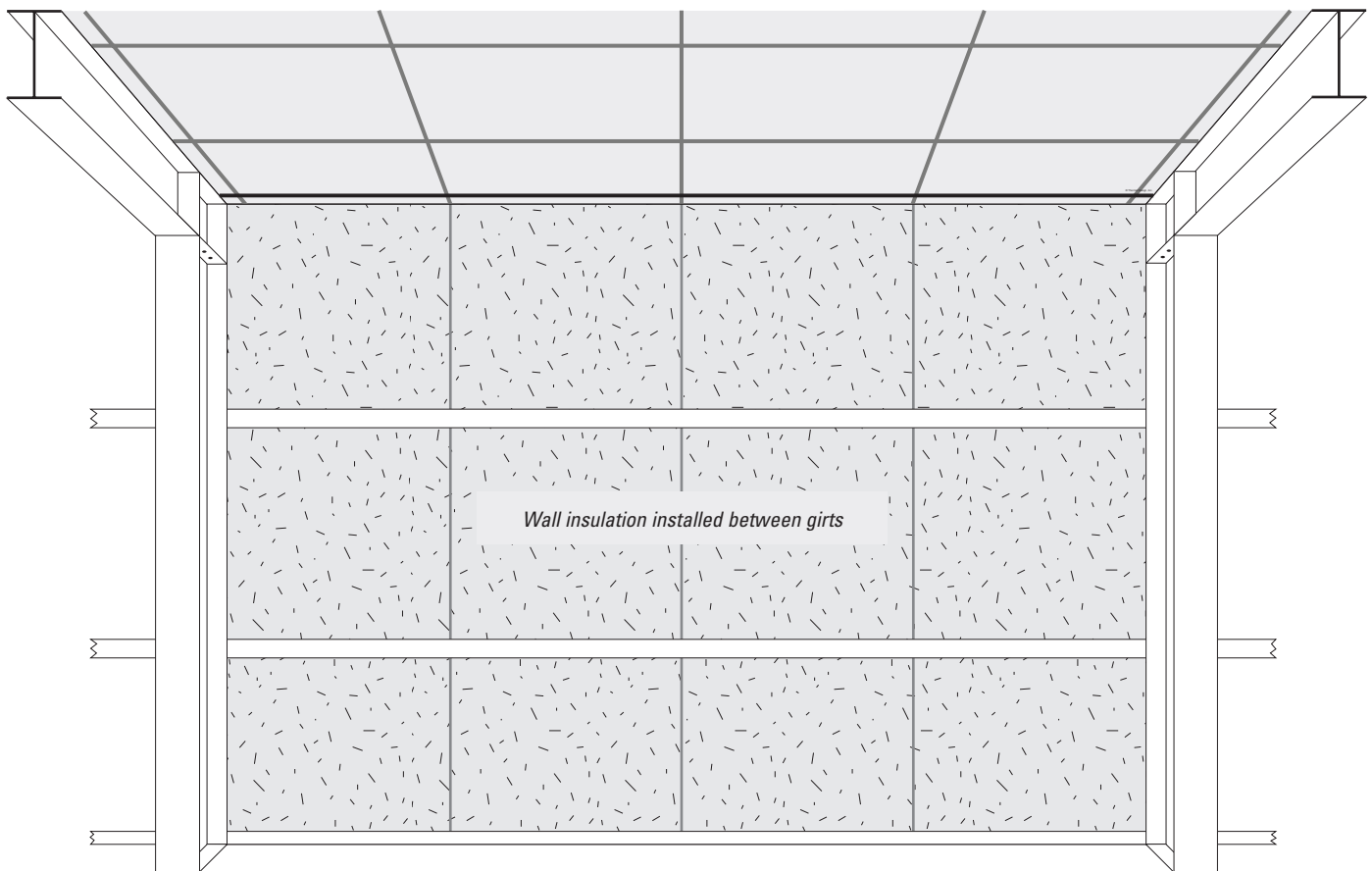
Thermal Design recommends applying a minimum 3/16ths inch thick Quik-Stop™ self-adhering thermal break to the outside of girts, jambs and headers before applying wall sheets and/or between the interior flanges and the wall liner fabric to reduce conductive heat transfer. Snap-R™ Thermal Blocks may be used for greater thickness on the interior of the girts to create the desired insulation depth space.



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NEW WALL SYSTEM INSULATION IN STEEL FRAME BUILDINGS

Figure 3-4.



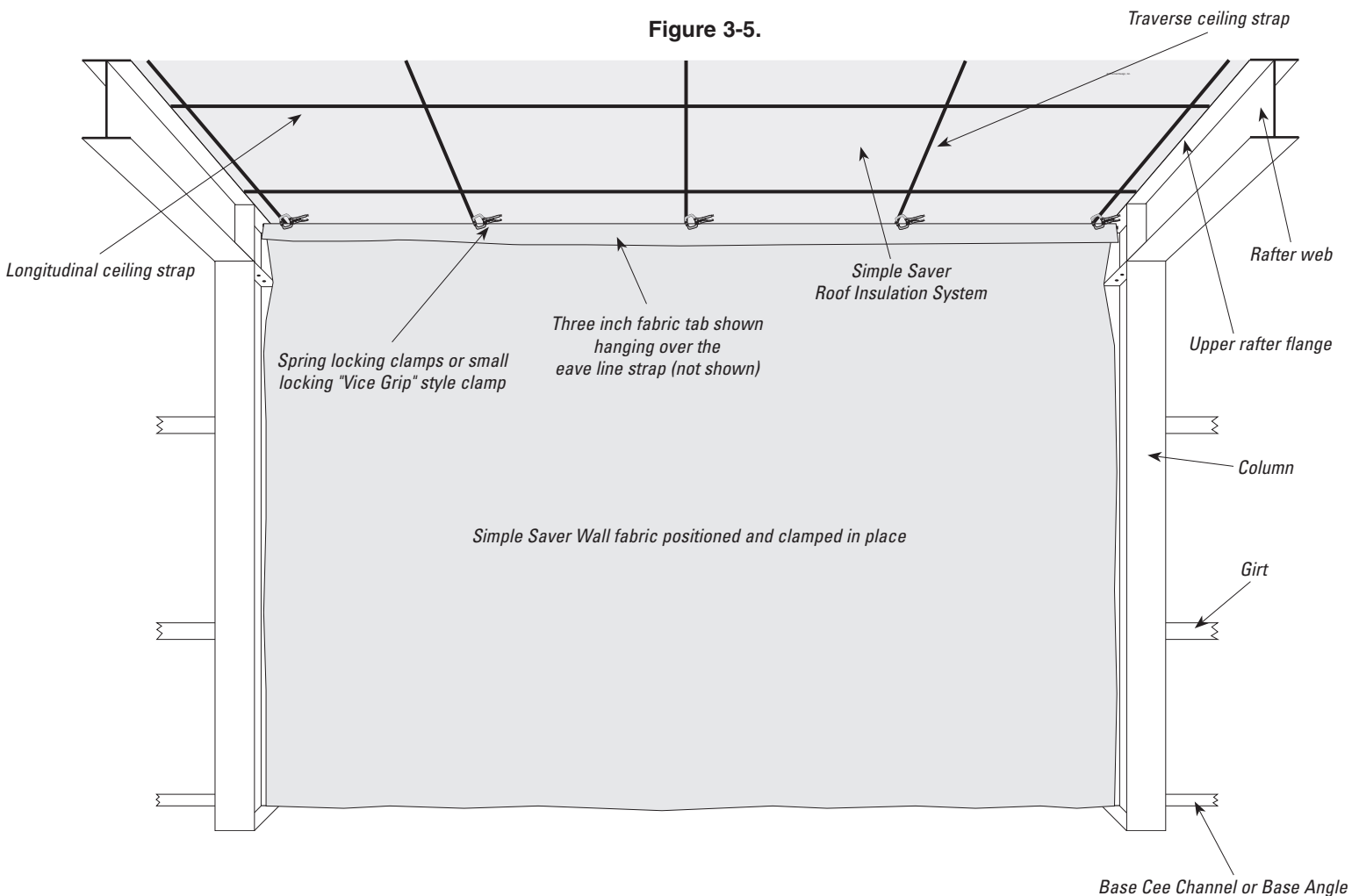
Cut the insulation to the proper lengths, shake each piece to exceed it's specified thickness and impale it squarely between the girts on the rigid Fast-R™ hanger arrows. Abut the insulation joints tightly together and leave no gaps. Filling the full depth of the space is critical for optimum performance because of convection currents.

Filling the wall depth with high quality blanket fiberglass insulation will inhibit vertical convection currents and tightly fitting the insulation on all sides will minimize the loss of performance.

SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

NEW WALL SYSTEM INSTALLATION IN STEEL FRAME BUILDINGS

Step 4: Position appropriate sized fabric on wall bay (see sketch provided with system for sizes). Factory seams, if any, should run vertically on wall fabric. Start positioning the wall fabric in either inside corner at the rafter and eave line strap intersection. Position the wall fabric behind, up and around the eave line strap toward the interior by three inches and temporarily clamp it in this exact position. Allow sufficient fabric to the side to seal the fabric all the way to the column web and have at least one inch of side trim. (At least two inches are allowed by Thermal Design for this trim.) Proceed laterally toward the opposite inside corner of this eave line bay, positioning the wall liner fabric behind, up and around the eave line strap by the three inches, temporarily clamping the wall fabric squarely in position between the eave line strap and each overlying traverse ceiling strap (see "Figure 3-5.").



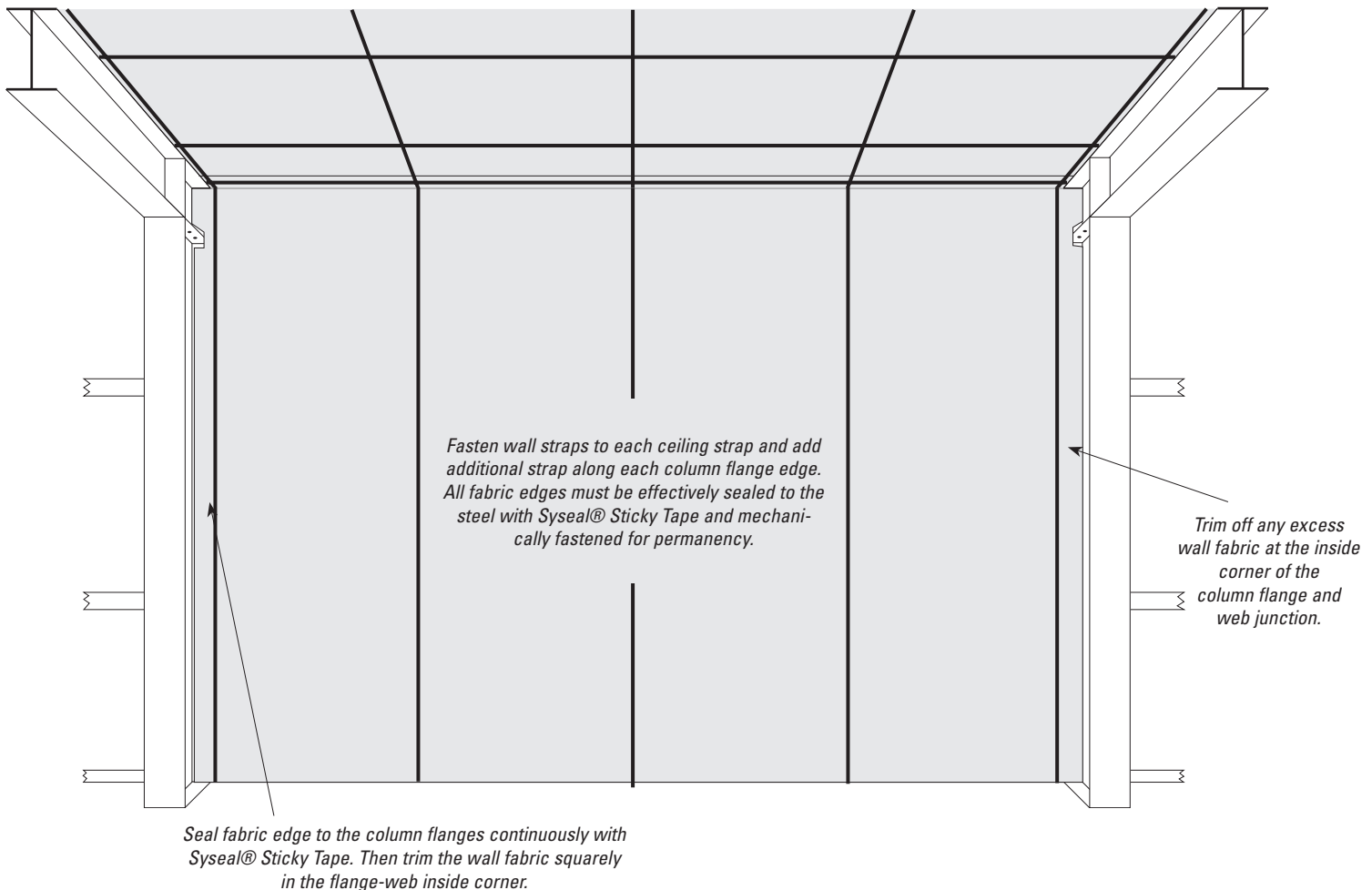
SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

NEW WALL SYSTEM INSTALLATION IN STEEL FRAME BUILDINGS

Step 5: Cut the number of vertical wall straps required. Straps shall reach from ceiling to floor plus 8 inches extra. Install wall retaining straps by drilling self drilling screws through wall strap, about 3 inches from one end; then through the eave line strap, the overlying wall fabric and into the traverse ceiling strap, thereby fastening them together. Remove temporary clamps upon each permanent fastening. Also install a steel retention strap vertically, along the column flange to mechanically fasten the edge conditions for permanency.

Step 6: Adhere Syseal® Sticky Tape to this upper side of the wall fabric three inch tab. Then neatly bond this upper wall fabric edge to the ceiling fabric adjacent to the eave line strap. (See "Figure 3-8." on page 9)
Hint: Installing a small piece of Syseal® Sticky Tape between the traverse ceiling strap and the ceiling fabric prior to bonding the fabric edge insures that this small condition is also effectively sealed.

Figure 3-6.

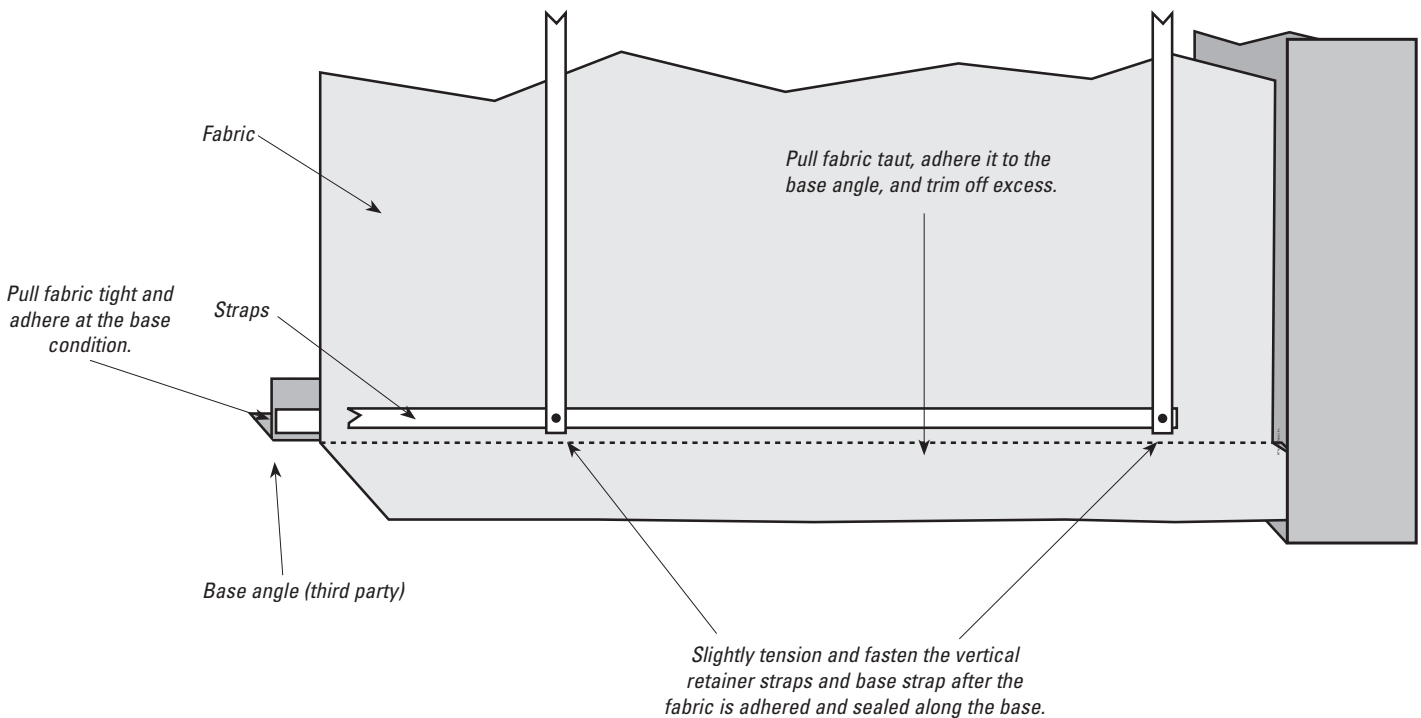


SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

NEW WALL SYSTEM INSTALLATION IN STEEL FRAME BUILDINGS

Step 7: Install Syseal® Sticky Tape or the Simple Saver High Tack™ Sealant continuously along the base angle near the floor and up the column flanges near the inside corner of the column web to column flanges. Allow to get very tacky. Beginning in the center of the wall bay at the base angle, pull the wall fabric straight downward with some tension, and stick the wall fabric under slight tension to the Syseal® Sticky Tape or Simple Saver High Tack™ Sealant. Proceed to pull the wall fabric tight and stick it to the base angle laterally to each column web. Then trim the wall fabric squarely in the floor-wall inside corner. It is highly recommended that a sill seal (by others) is installed between the floor foundation and the base structural members. Fasten the wall straps at the base in slight tension and then at each intersection with underlying girts when self-drilling fasteners. Similarly, pull taut and adhere the wall fabric side edges to the column flanges with Simple Saver High Tack™ Sealant or Syseal® Sticky tape, trim off any excess fabric at the inside corners. With some tension, fasten the lower end of the side edge straps to the base and then fasten at each intermediate girt location. Refer to installation sketches with these instructions.

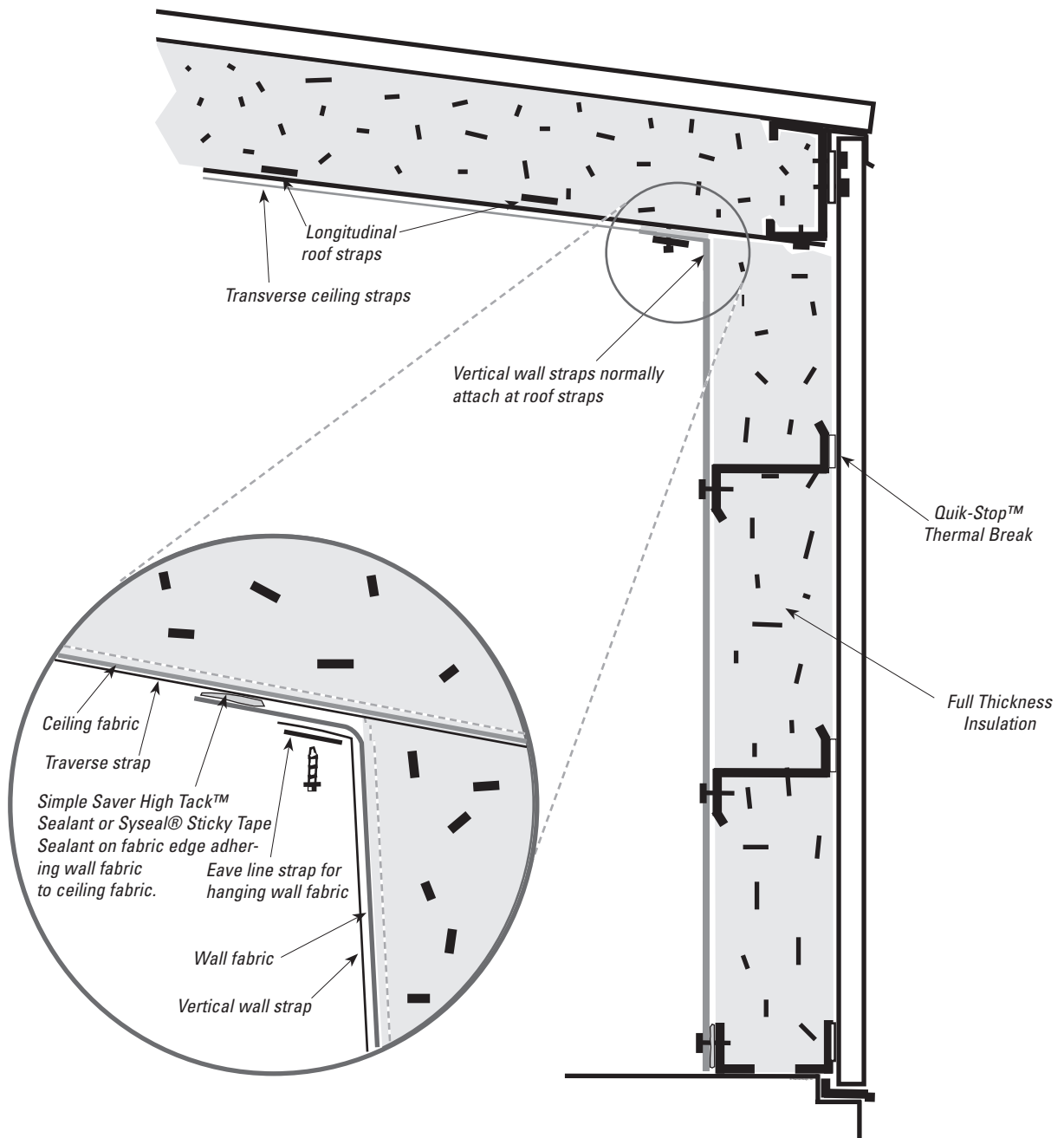
Figure 3-7.



SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

PROPER INSTALLATION OF WALL STRAPS

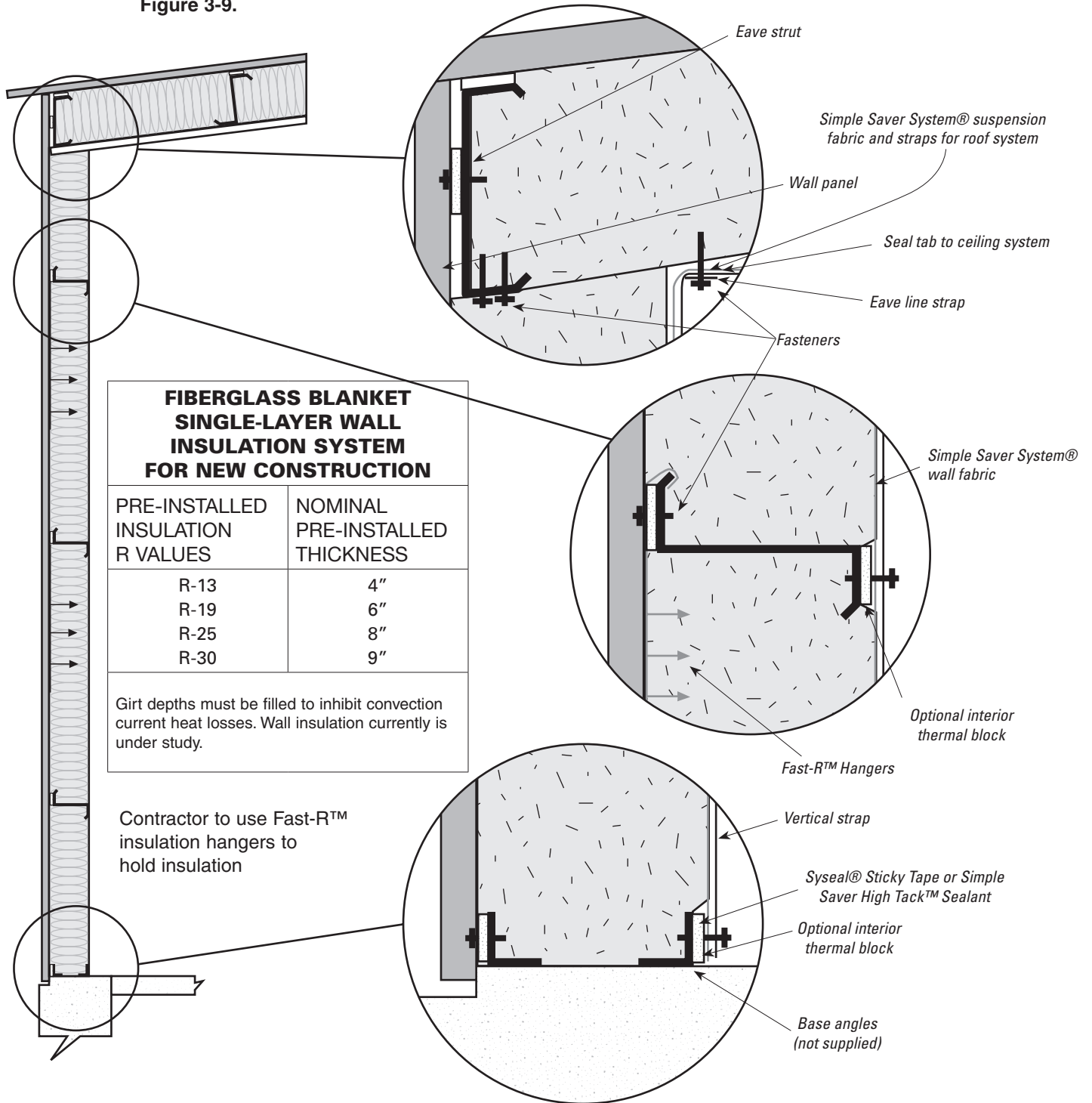
Figure 3-8.



SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

SINGLE-LAYER WALL SYSTEM INSULATION IN STEEL FRAME BUILDINGS

Figure 3-9.

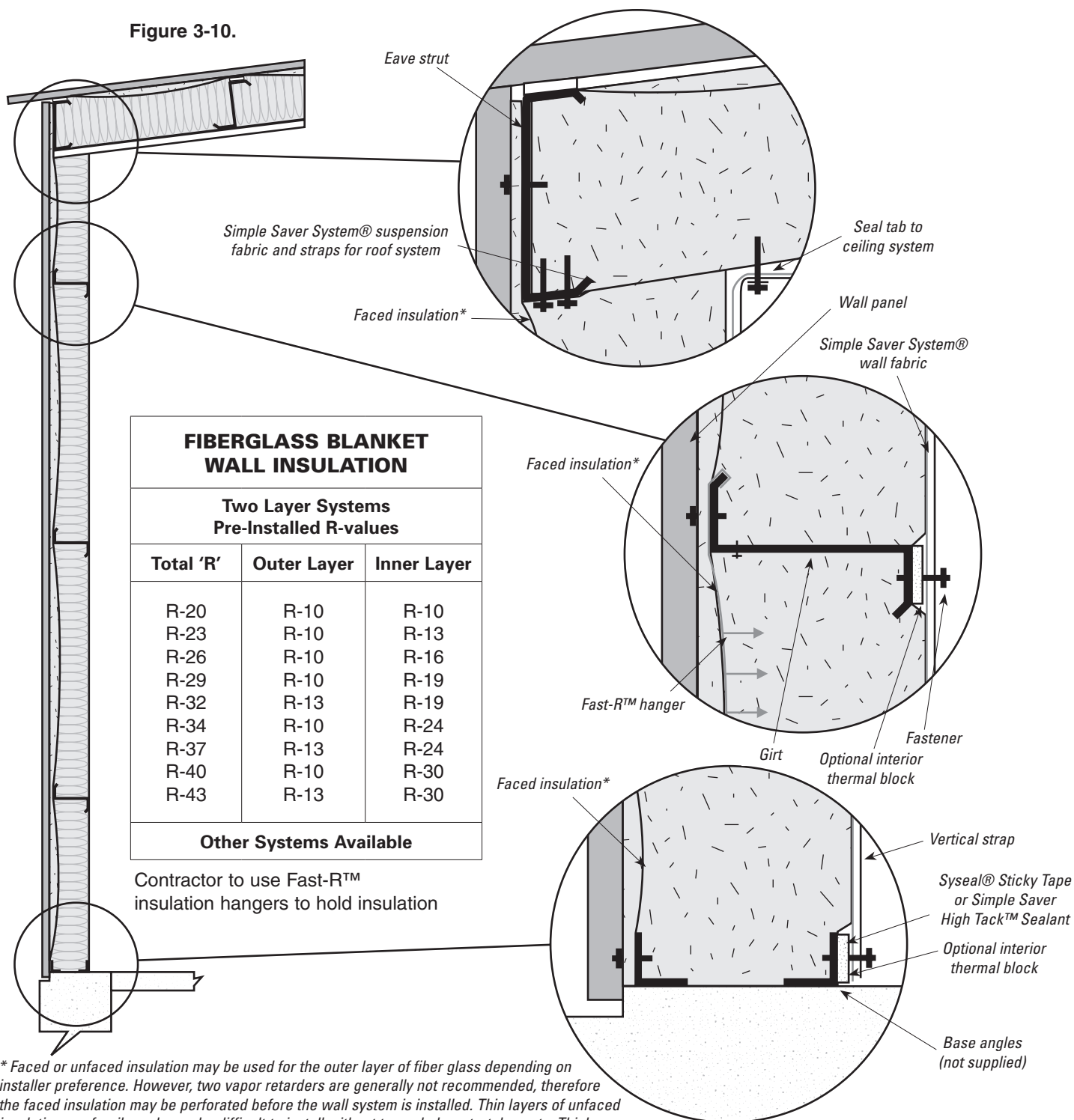


Notice: Vertical wall system performances are currently under research investigation.

SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

DOUBLE-LAYER WALL INSULATION SYSTEM FOR STEEL FRAMED BUILDINGS

Figure 3-10.



* Faced or unfaced insulation may be used for the outer layer of fiber glass depending on installer preference. However, two vapor retarders are generally not recommended, therefore the faced insulation may be perforated before the wall system is installed. Thin layers of unfaced insulation are fragile and may be difficult to install without tears, holes, stretches, etc. Thick single layers of fiberglass are generally recommended with thermal breaks on girts.

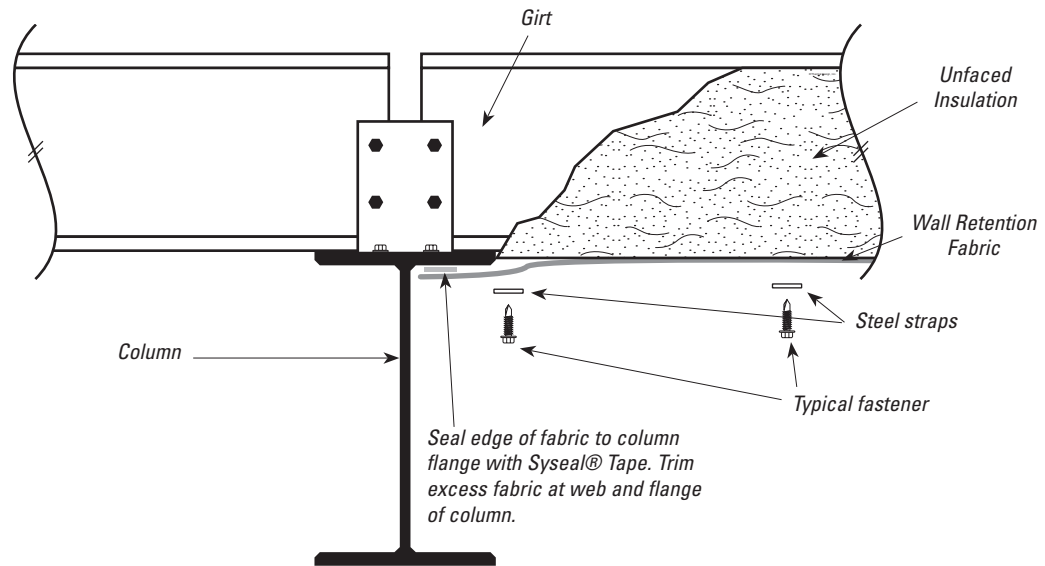
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SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

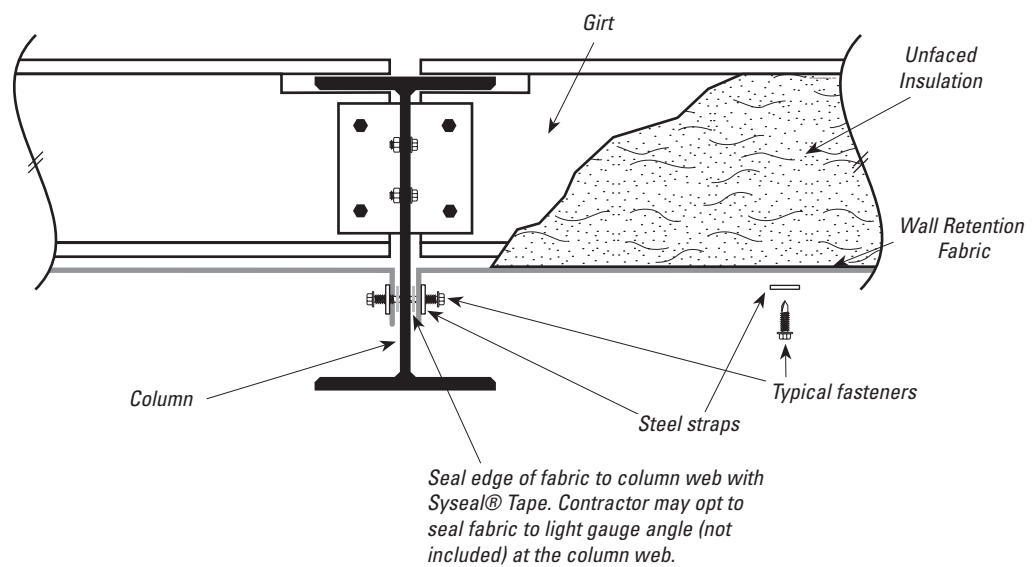
SECTIONAL DETAIL AT GIRT-TO-COLUMN CONNECTION

Figure 3-11.

Outset Girt Condition (Exterior Mounted Girts)



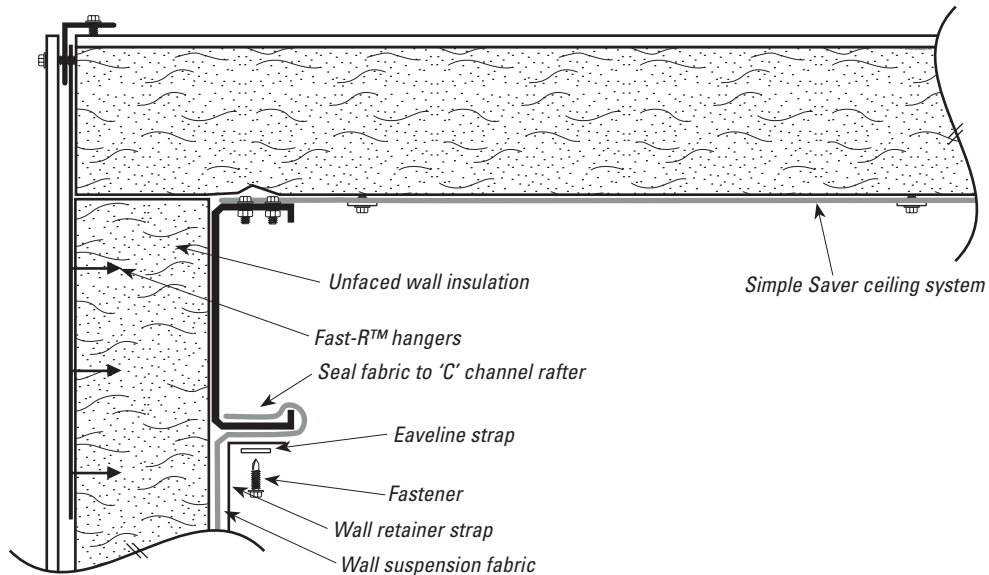
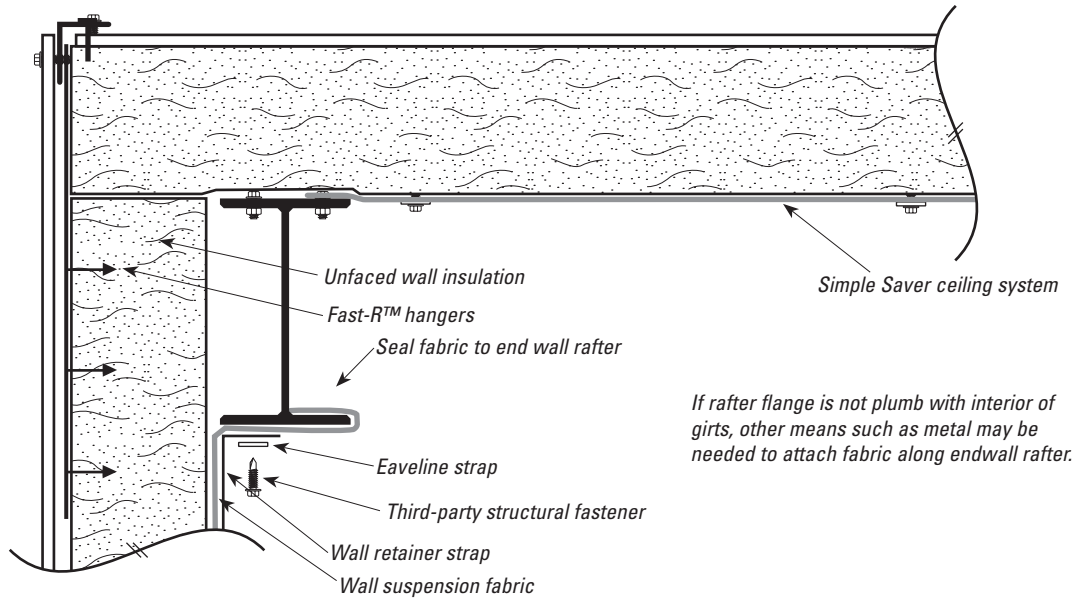
Inset Girt Condition



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SECTIONAL DETAIL AT END RAFTER TO END WALL CONNECTION

Figure 3-12.



Note: Various building lines have different structural details and may be different than these shown. Call (800) 255-0776 or your distributor for recommendations.

SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

SPECIAL EAVE AND WALL DETAILS

The detail to the right shows how a conventional pre-engineered wall with normal sized girts can be well insulated using the Simple Saver System®. Either hat channels or steel studs can be installed vertically on 16" or 24" centers and the drywall applied to them.

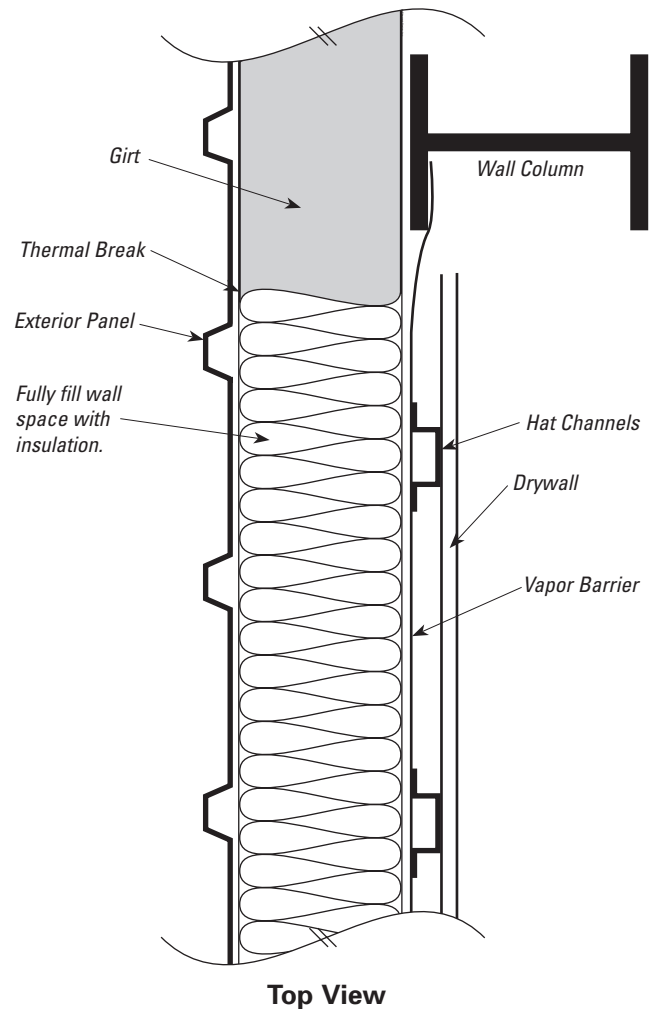
When using hat channels it might be necessary to specify an intermediate girt in the lower seven foot (or more) girt span when ordering the building to provide adequate support for the lighter channels.

All the electric, phone and computer wires can be placed in the open hat channel/steel stud cavity created along with the receptacle boxes. This allows the integrity of the vapor barrier to be maintained, unlike a standard stud wall that is full of subcontractors installations. *(Note: Wires can run horizontally between the vapor barrier and studs by simply pushing in on the vapor barrier.)*

Limited holes can be drilled in the column webs (and in limited numbers) for the horizontal running wires. Contact your building manufacturer for limitations.

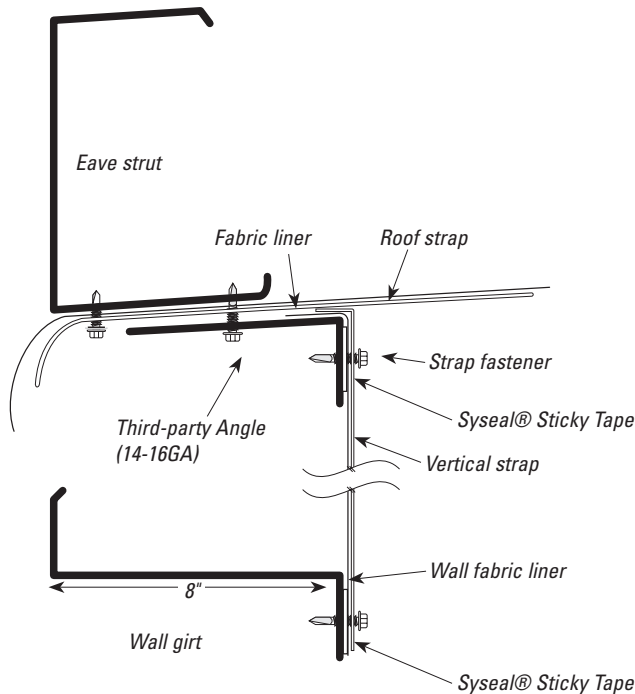
Wall Detail: Full Girt Cavity Insulation

Figure 3-13.



Special Eave Detail

Figure 3-14.

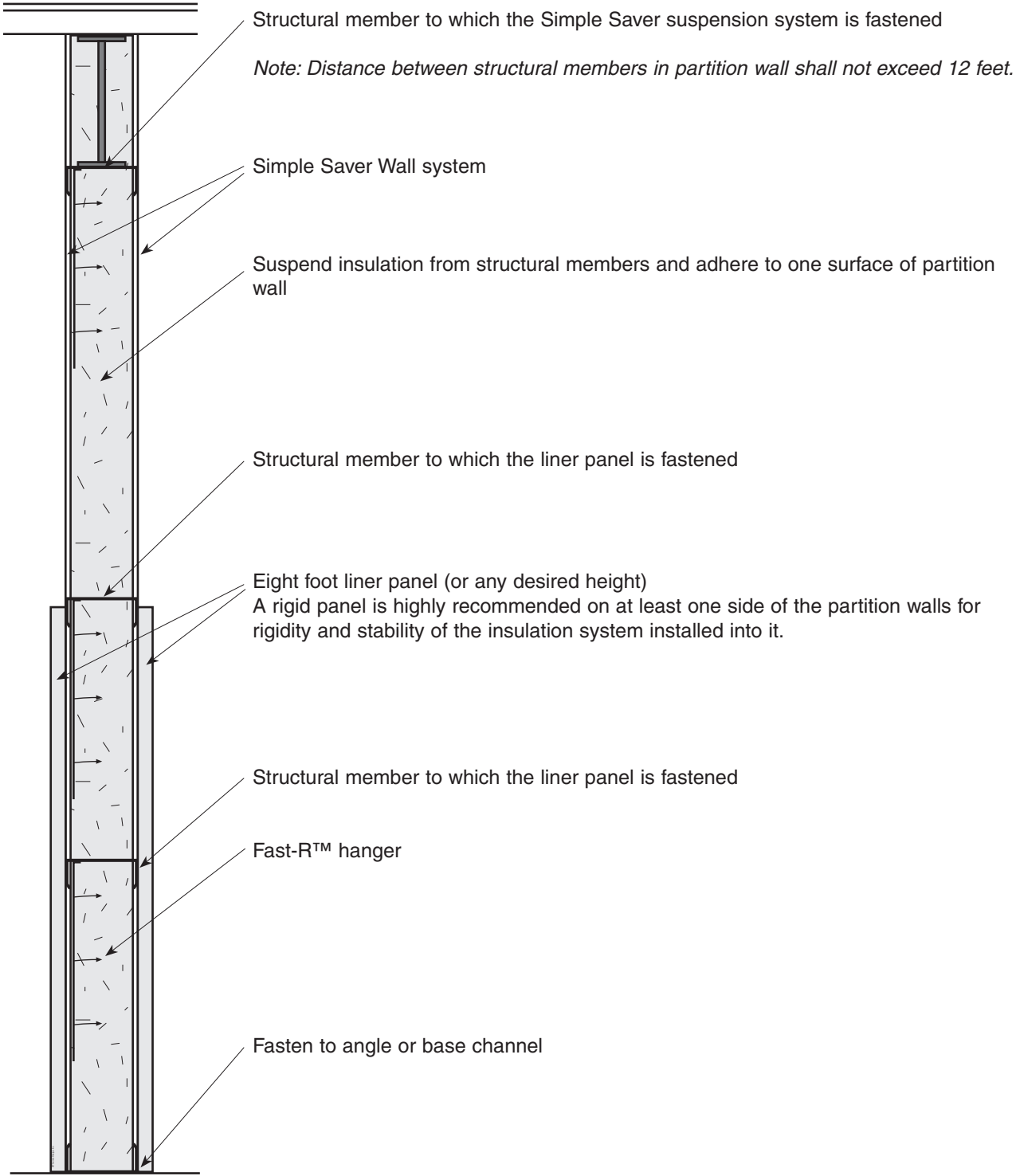


For use if a more finished look is desired where the roof and wall systems adjoin each other. Recommended when roof and wall systems are different colors.

SIMPLE SAVER SYSTEM® INSTALL INSTRUCTIONS BY THERMAL DESIGN

INSULATED PARTITION WALL SYSTEM

Figure 3-15.



Thermal Performance Guarantee: Thermal Design, Inc. will guarantee to the building owner/user that the thermal performance of a Simple Saver System roof assembly, spaced nominally 5', will perform at the average purchased insulation level, plus or minus 10%, when properly installed at the prescribed thickness and sealed against air and water vapor infiltration. Thermal Design shall, at its option, correct any deficiencies of thermal performance or credit to the owner/ user the percentage of the insulation material cost equal to the percentage of any deficiency if a valid claim is filed within one year after delivery.

Ten-Year Limited Material Warranty: The Simple Saver System is warranted against manufacturing defects in materials that are provided by Thermal Design that may become evident within ten years after delivery. This warranty is specifically limited to providing materials for replacement of specific areas affected and only to the extent that the defect is adversely affecting performance, and does not include any expense to remove or install materials, site workmanship or damages that may be caused by defective materials, installation, damage to materials caused by others, abuse and misuse of the product, or design. The warranty is pro-rated (e.g. 100% of the material replacement cost during the first year, 90% during the second year, 80% during the third year, etc.). Labor is typically covered by contractor's warranty for at least one year after installation completion. Thermal Design shall make the final decision as to the validity and extent of any defect claim. Valid claims will be limited to the pro-rated value of the purchased materials cost or the cost value thereof, as determined by Thermal Design. Any claims should be submitted in writing by US Mail to Thermal Design, Inc., P.O. Box 468, Madison, NE, 68748. There are no other expressed or implied warranties that extend beyond these limitations and these are a condition of the sale of these goods. The company shall not be held responsible for consequential, liquidated or other damages under any theory of law.

Notices: All customers will be charged Nebraska sales tax on all products unless sales and use tax certificates are provided. Point of sale and venue for all claims shall be Madison County, Nebraska. Any material not specifically included on a quotation is excluded although additional materials may be provided solely at the discretion of Thermal Design.

Unauthorized making, using or selling of this patented technology or trademarks or service marks or copyrighted works shall be each subject to a minimum royalty and lost profit per square foot of surface insulated from such unauthorized acts. Sellers of any component with the knowledge or intent that such component is to be used to evade the purchase of legitimate materials from authorized sources shall be held liable as contributory infringers and otherwise as lawful. All costs of collection, including legal fees and costs, shall be sought as damages for unauthorized use and infringement.

The EnergyCraft units are factory run tested. Minor adjustment may have to be made on site. Installation of these appliances and framing kits normally do not require a license. Installation of gas piping and electric power to the appliance receptacles should be done by a qualified licensed installer. See Goodman manufacturing warranty documents for limitations and exclusions pertaining to the HVAC products. All sales are subject to the limitations and conditions set forth in those documents as well as the contract of sale.

Simple Saver System is not designed or intended to be walked or stood upon. Any such use will void the fall protection certification. The fall protection feature is strictly for accidental falls while insulating and roofing.

To obtain a project fall protection certificate, all system materials must be purchased from an authorized distributor of Thermal Design, Inc. The erectors/ installers will be required to thoroughly read the installation instructions and sign the form provided that they have read, understood and agree to install the Simple Saver System in accordance with the instructions. A copy of the signed form must be received by Thermal Design, Inc. along with a current erector/ installer insurance certificate listing Thermal Design a certificate holder and show required coverages of liability, property damage and worker's compensation coverage for the project. The primary limits of the insurance coverage shall be those already provided by the erector/installer to cover their workers and liability. The secondary limits shall be that liability coverage carried by Thermal Design.

Safety lines along the rafters and a safety harness with shock absorbing lanyards must be used while installing the Simple Saver liner system for topside workers. A safety harness with lanyard in combination with a suitable lift must be used by bottom-side workers when installing the Simple Saver liner system. Once the Simple Saver System liner is properly installed in the affected building roof area, the through fall protection certificate will become effective for topside workers for subsequent insulation and roof sheathing work. **Workmen must use a safety harness connected to an OSHA compliant lifeline within 6' of any roof edge or liner system edge.**

The Simple Saver liner system must be completely installed in each affected building area prior to reliance on the system as an alternative means of fall protection for that area. Only one installation of the Simple Saver Systems materials will be allowed per certificate. A copy of the installation instructions and the "Certificate of Alternative Fall Protection" signed by the erector/installer must be prominently posted at the job site as notice to all contractors, workers and inspectors. **Workmen must use a safety harness connected to an OSHA compliant lifeline within 6' of any roof edge or liner system edge.**