



ProLiner™ Banded Liner System

Technical Bulletin 01

Topic: Patch Tape Application (and Cutting of Liner Fabric)

IMPORTANT – Always keep the slit/cut length of the liner fabric to a minimum, not to exceed 6” in length. This aids in preserving the system’s overall cosmetic appearance while maintaining water vapor and air barrier integrity. Always take care during fabric deployment and installation to not cut or damage fabric on adjacent steel members, banding or fixtures.

ProLiner™ Banded Liner System is shipped to your jobsite including a color matched (white or black) patch tape with release liner, to conceal and repair small fabric penetrations or overlaps. Lengths of cut patch tape should always be kept to a minimum. At times, scissor cutting rounded edges to the patch can aid in preventing the possibility of corner peeling over time.

When cutting the liner fabric is required to make a mechanical attachment to a purlin or girt, it is best to cut perpendicular to the secondary steel member and not allow the cut to extend to the steel or fabric edge. This will give your crewmen the ability to get their hands and tools above/within the fabric to make the attachment. Once completed, use the provided patch tape to cover the cut. If attachments are able to be installed without cutting the fabric (for example, when using a self-tapping screw), no patch tape is required.



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Technical Bulletin 02

Topic: Liner System Design Considerations

The ProLiner™ Banded Liner System is an important component of the building envelope. Proper coordination with the building designer, manufacturer, general contractor, steel erector and Therm-All will positively impact the overall project and ensure a smooth and cost-effective installation of the product.

Purlin/Girt Spacing

- To avoid any unnecessary field cutting of insulation, request purlin/girt spacing from your metal building manufacturer that best matches standard insulation widths (e.g. 36", 48", 60" or 72").
- Roof insulation is provided in custom widths to match your building's purlin spacing. Wall insulation is provided in the widest width possible (typically 72" wide) to reduce onsite cutting when installing vertically. Standard girt heights allow for a horizontal application.
- Contact your sales representative for information on additional costs, lead time and minimum order quantities.

Purlin/Girt Depth

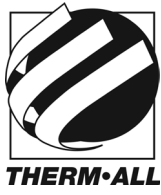
- It is recommended to completely fill the purlin/girt cavity with unfaced fiberglass insulation. This will help avoid air gaps that may lead to concealed condensation.
- The depth of the secondary members will affect the recommended insulation system. It is important to specify the target purlin/girt depth when requesting a system quote.

Flange Braces

- Flush mount connections between any brace and the purlin/girt are recommended but not required. Minimizing penetrations through the vapor barrier helps to ensure optimal performance of the system and avoids additional labor required to cut/patch around bracing.
- It is recommended to request a flush mount design or flange brace adapters when ordering your metal building. Aftermarket flange brace adapters are available if needed. Consult your building manufacturer for approval before making this change.

Wall Transitions

- When using a liner system in wall applications, it is necessary to have either a full base channel or additional base angle at the interior to properly terminate the liner fabric and banding. This channel/angle should be attached to the floor (and caulked) flush with the interior girt flanges.
- It is also recommended to include a metal eave angle to aid in transition of roof/wall systems.



Effect on Other Trades

- Coordinate with subcontractors to utilize flush mount attachments whenever possible to maintain the integrity of the vapor barrier and minimize any penetrations.
- If “up lighting” is used, installation of a UV filtered lens or a low UV light source may extend the life of the system, as the impact of UV rays on the fabric degradation is reduced.

Additional Components

- Special considerations for liner system installation at roof transitions, hips, valleys, dormers and other special field conditions may need to be addressed by the installer. Additional support steel or transition members at these conditions may be beneficial but are the responsibility of the installer or metal building manufacturer.



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Technical Bulletin 03

Topic: Fabric Cleaning, Care and Maintenance

Polyethylene fabrics require minimal maintenance. Care should be made to ensure the panels are properly installed and correct tension is maintained in all sections of the material. ProLiner™ fabric contains no solvents or plasticizers that migrate or provide a tacky surface to trap airborne dirt.

Chemical solvents (acids, bleach, chlorine or peroxide) and petroleum-based products (gasoline, diesel fuel or oils) should be avoided when attempting to clean the liner fabric. Mild dishwashing detergent, a damp towel or sponge and low-pressure water should be used to hand wash away any dirt or debris, then dried with a soft towel. While the cross-woven polyethylene fabric is quite durable, power washing should be avoided as the pressure or operator allow for potential fabric damage or tearing.



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Technical Bulletin 04

Topic: Fabric Painting

Painting of fabric should be avoided at all costs, regardless of paint type or advertised use with plastics, as it will void the warranty of both Therm-All and the fabric manufacturer. Polyolefins, which includes polyethylene fabrics, are non-polar, meaning paints will not adhere in a permanent or even coverage and lead to peeling or flaking over time. Additionally, the valued properties of the film's UV inhibitors and fire-retardant additives will be eliminated. If painting of structural steel or surrounding objects is necessary, paint prior to the fabric liner system installation or completely mask off and cover nearby fabric sections to avoid contact.



ProLiner™ Banded Liner System

Technical Bulletin 05

Topic: Moisture and Liner System Components

Liner Fabric

Since made of polyethylene, the liner fabric will not absorb water but every effort should be made to remove small amounts of rain or snow prior to insulating and sheeting a metal building. Larger pools of water, if left alone, could cause tearing of the fabric. If possible, allow the edges of the fabric and banding to stay unattached at the eaves to promote water flowing down and out of the system.

Fiberglass

Owens Corning states, "Owens Corning recommends that insulation materials and accessories be kept dry and protected before, during and after installation. If insulation material becomes wet because of transit or job site exposure to moisture or water, the material may be dried in place and once dry, the thermal performance will be unaffected provided the original insulation thickness is maintained. The primary concern with wetted insulation is the possibility that dirt and other contaminants may have been carried into the insulation. These contaminants may then serve as a nutrient source for mold or mildew growth. An additional concern is that wet insulation will contribute to corrosion and degrade the service life of the system. If these concerns are addressed, the insulation material should function as designed." -8/11/2004 letter

Banding and TEK Screws

The liner system utilizes a hot-dipped zinc coated and galvanized steel banding. Prolonged exposure to a high moisture environment may allow the slit edges to show rust over time, however, it should not advance into the painted white surface area. The TEK screws used in the ProLiner™ Banded Liner System are not coated to prevent rust.



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Technical Bulletin 06

Topic: Buildings with High Moisture Environments

While capable of being installed in high moisture environments, these buildings require a very careful selection of heating, ventilation and air conditioning equipment. Adequate ventilation of the enclosure is the most effective way to control condensation, however, it is also the dominant source of heating/cooling loss. This can motivate a building owner to curtail the ventilation process resulting in condensation issues. Corrosion to metal components and condensation formation can occur, especially during the winter months.

For these reasons, Therm-All can offer no warranty whatsoever relative to the performance of the insulation or liner fabric when the intended application houses open sources of water – swimming pools, fisheries, utility buildings, vehicle wash facilities, open floor equestrian centers, etc.



ProLiner™ Banded Liner System

Technical Bulletin 07

Topic: Suspending Hangers from Liner System

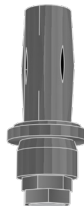
Third party fasteners are available for fastening ductwork, pipes, conduit and other items from the ceiling without having to cut large holes in the vapor retarder. Angles and side beam connectors should be installed prior to the liner system fabric. The below hanger options are available at any local industrial supply house or big box hardware store. Always check with your metal building manufacturer prior to installation to confirm hanging weight loads permissible from secondary steel members.



Self-Drilling Fastener



Lag Fastener



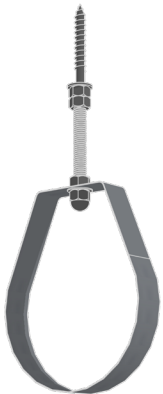
Lag Fastener 2



Eye-Lag Screw



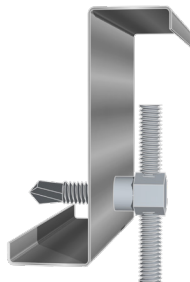
Double-Threaded Nut



Pipe Hanger



Sammys® X-Press with Threaded Rod



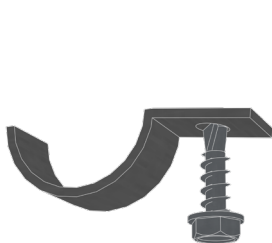
Self-Drilling Double-Threaded Nut



Side Beam Connector with Steel Sammys®



Side Beam Connector with Steel Sammys®



Pipe Strap/Saddle



Channel Strut



Angle Hanger

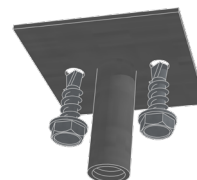


Plate Hanger



Bar Joist Hang



ProLiner™ Banded Liner System

Technical Bulletin 08

Topic: Fall Protection

Therm-All has performed extensive research, design and testing on our ProLiner™ Bi-Directional Banded Liner System, including a comprehensive series of tests witnessed and evaluated by a nationally recognized third-party expert in the fall safety industry. These tests confirmed that the ProLiner™ Bi-Directional Banded Liner System as advertised, meets the requirements of OSHA Title 29 CFR 1926.502 (C)(4)(i) which states:

“Except as provided in paragraph (c)(4)(ii) of this section, safety nets and safety net installations shall be drop-tested at the jobsite after initial installation and before being used as a fall protection system, whenever relocated, after major repair, and at 6-month intervals if left in one place. The drop-test shall consist of a 400 pound (180 kg) bag of sand 30 + or - 2 inches (76 + or - 5 cm) in diameter dropped into the net from the highest walking/working surface at which employees are exposed to fall hazards, but not from less than 42 inches (1.1 m) above that level.”

The ProLiner™ Bi-Directional Banded Liner System passed this strict test several times in various locations around the rooftop including interior structure, near intermediate mainframe and corner (6'0" from endwall and 6'0" from sidewall). Therefore, when installed in strict compliance with the Bi-Directional Banding instructions and by a "Competent Person" as defined in OSHA Standard 29 CFR 1926.751, ProLiner™ meets the requirements of OSHA Standard 29 CFR 1926.502 (c)(4)(i) and OSHA Standard 29 CFR 1926.760 (a)(1) for leading edge fall protection and OSHA Standard 29 CFR 1926.754 (e)(3)(i) covers for roof and floor openings. Any deviation from the installation instructions or substitution of any original components will nullify compliance with these OSHA standards. Other means of fall protection such as perimeter safety or guide lines, must be used at all times during the installation of the support banding and prior to the completed placement of the liner support fabric. The use of ProLiner™ is only one part of the overall site-specific safety plan for the construction site.

The ProLiner™ Bi-Directional Banded Liner System cannot provide fall protection in the following areas:

- Within 6'0" of the roof edge or beyond the edge
- Within 6'0" of any common intermediate rafter where the system (fabric and banding) has not been completely installed in both bays
- Within 6'0" of either side of an intermediate rafter where a longitudinal band has been screwed into
- Within 6'0" of any rooftop opening

The ProLiner™ Bi-Directional Banded Liner System should never be stepped on or walked on and is a single-use leading edge fall protection liner system. Dispose of and replace all fabric/components if a fall should occur.



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Technical Bulletin 09

Topic: Liner Fabric Exposure to Heat

The recommended temperatures for polyethylene fabrics are -60°C to 70°C (-76°F to 158°F). That is based on the low-density polyethylene coating which melts at 103°C (217°F) but softens at about 80°C (176°F) and when it becomes softened, Therm-All's factory seams can become weakened and potentially fail. For that softening to occur, the fabric itself has to heat up to 80°C (176°F).

Therm-All can offer no warranty or claim whatsoever relative to the performance of the polyethylene liner fabric or recommended distance from a heat source if the roof or wall system will be exposed to heat such as described above. This exposure could cause the fabric to pucker, shrink or even melt.