

The question regarding what adhesives should be used with STYROFOAM in any given application is a question that is often asked by customers, architects, and suppliers. It is a question that must be addressed from many points of view.

T Clear Corporation recognizes that there is a vast array of high quality adhesives suitable for use with expanded polystyrene foam. Many of these adhesives are formulated to perform as a general purpose adhesive in many different applications with a variety of substrates. Others are for very specialized purposes. It is our belief at T Clear that the ability to make a recommendation for one of these adhesives over the other would require more information than is reasonably available to us. The continuous performance quality of an adhesive is the responsibility of the manufacturer. Therefore, the only recommendation we can rightfully make is to use an adhesive that the manufacturer claims as compatible with polystyrene foam.

The user needs to be aware of a few basic considerations when selecting an adhesive. Foremost on this list is the adhesive's chemical compatibility with the polystyrene foam. The adhesive must not attack and cause cavitations of the polystyrene foam during the curing process. Open time and cure are other areas of consideration. Open time is the amount of time the user has from adhesive application to assembly completion. Cure time refers to the time period from the assembly to when the bond reaches optimum strength. The user should also consider the environment of the bond after it is cured. Does it need to withstand freeze/thaw cycles that would be common in the outdoors during the winter? Will water or high moisture levels affect the adhesive during or after it is cured? Will the adhesive need to remain pliable after cure to allow for slight movement in the assembly? The manufacturer generally considers these variables plus many others when formulating an adhesive. It is the responsibility of the user to determine if the adhesive chosen is suitable for the intended application.

T Clear does not recommend a particular adhesive for the use with STYROFOAM brand plastics. However, previous laboratory evaluations have shown certain adhesives to perform well with STYROFOAM. These adhesives demonstrated little or no cavitations to polystyrene foam at cure temperatures below 100°F. The bond strength of these adhesives after cure was greater than the tensile strength of the foam.

The following is a list of these adhesives and their manufacturers:

DAP BEATS the NAIL	DAP Inc.	(800) 543-3840
DAXCEL 161D Foamastik	Dacar Products Co., Inc	(412) 922-2536
DAXCEL Foamgrab PS Adhesive	Dacar Products Co., Inc	
Henry #117	W. W. Henry Co.	(800) 232-4832
Henry #317	W. W. Henry Co.	
INSTA-STICK	The Dow Chemical Co.	(888) 868-1183
LN 601, 901 and 915	MACCO Adhesives SCM Corp.	(800) 634-0015
QB-300	Ohio Sealants, Inc.	(800) 321-3578
PL Premium	Ohio Sealants, Inc.	
PL300	Ohio Sealants, Inc.	
OLYBOND	OMG	(800) 633-3800
Pliodeck	Ashland Chemical	(800) 322-6580
Sonneborn 200	ChemRex, Inc.	(800) 433-9517
Titebond	Franklin International	(800) 347-4583

Latex-base, non-flammable adhesives.

One-part urethane-based nonflammable adhesive.

LIGHTGUARD® is a registered trademark of T. Clear Corporation.

Mameco Weatherproofing Sealant

Vulkem 116

One-Part High Performance Elastomer



Product Description:

Vulkem 116 is a one-part moisture curing, gun grade polyurethane sealant. Vulkem 116 is durable, flexible, and offers excellent performance in moving joints. Vulkem 116 does not require a primer on most construction materials.

Basic Uses:

Vulkem 116 is an excellent general purpose sealant designed for use in precast, masonry, window frame perimeters and similar types of construction joints. Vulkem 116 is suitable for continual immersion in water. Vulkem 116 is designed for exterior and interior use. Also suitable for varied manufacturing uses, such as, production of travel trailers and mobile homes and in assembly

of galvanized air conditioning duct work.

Limitations:

... Do not apply over damp or contaminated surfaces.

... Use with adequate ventilation.

Packaging:

1/12 gallon and quart cartridges, 2 and 5 gallon pails and 55 gallon drums.

Colors:

Almond, Aluminum, Black, Bronze, Dark Tan, Gray, Limestone, Patina Green, Redwood Tan and White.

APPLICABLE STANDARDS:

Conforms to U.S. Federal Specification TT-S-00230C, Type II, Class A and ASTM C920-87, Type S,

Grade N S, Class 25, Use NT, M, T, A, and O. USDA approved.

INSTALLATION

Joint Design:

May be used in any vertical or horizontal joint designed in accordance with accepted architectural/engineering practice. Joint width should be 4 times anticipated movement, but not less than 1/4" wide. Movement should not exceed 25% of the minimum joint width.

Joint Dimensions:

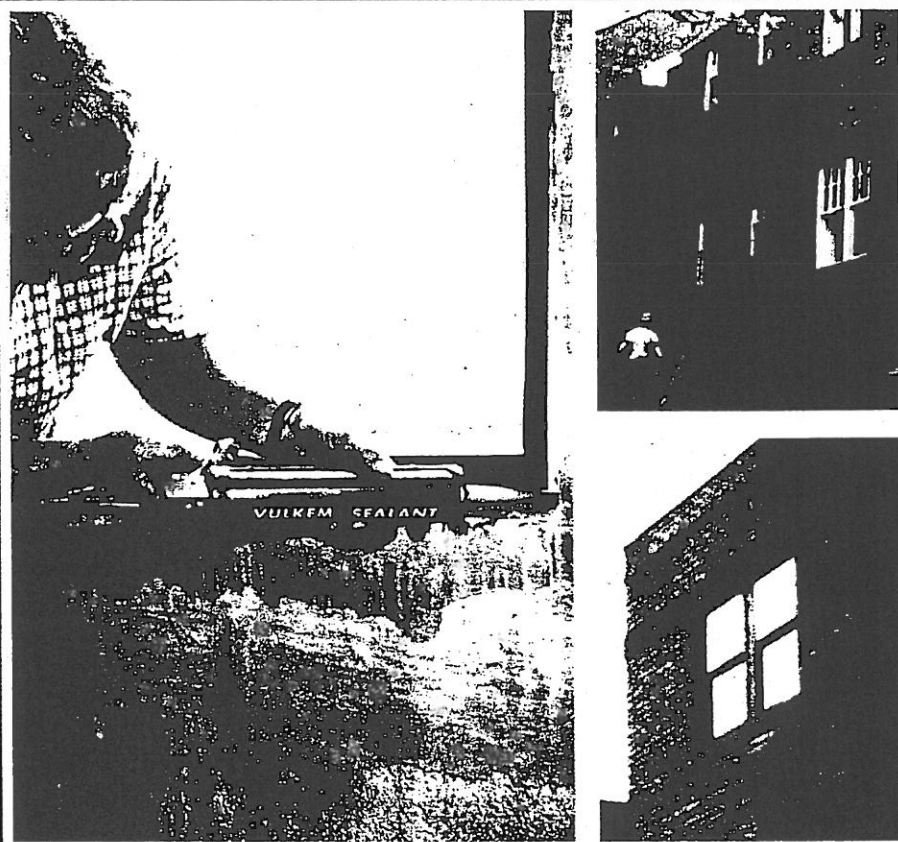
For joints 1/4 inch to 1/2 inch wide, the width to depth ratio should be equal. Joints 1/2 inch wide or greater should have a sealant depth of 1/2 inch. Minimum joint size is 1/4 inch by 1/4 inch.

Surface Preparation:

For good adhesion, the joint interface must be sound, clean and dry. Depending on the substrates, or presence of form release agents, masonry waterproofings, dust, loose mortar or laitance, architectural paints or finishes, the joint surface may require a thorough wire brushing, grinding, sandblasting, solvent washing and/or a primer.

Tooling & Cleaning:

Tooling is recommended immediately after application to insure firm, intimate contact with the joint interface. Dry tooling is preferred, although tooling agents can be utilized. Excess sealant and smears adjacent to the joint can be removed with Xylol or Toluol before sealant cures.

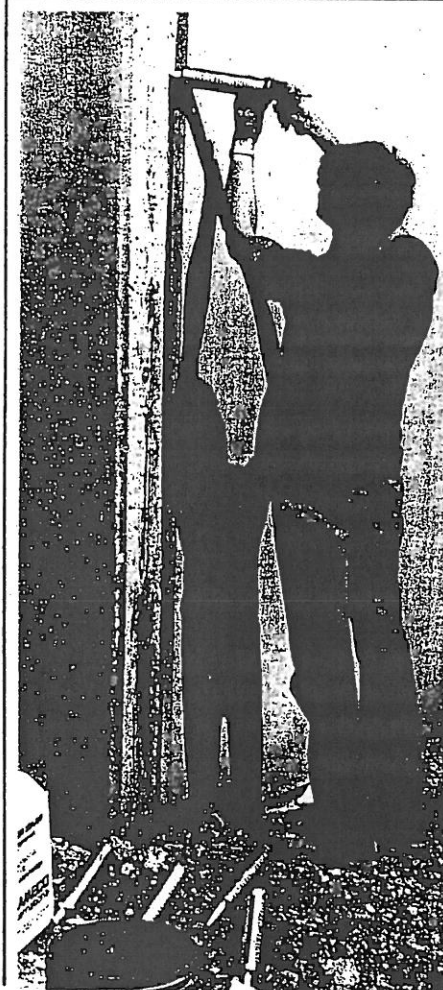


Joint Backing—Bond Breaking Tape

Closed cell polyethylene and some open cell polyurethane rods may be used as joint backing to control depth of sealant bead. Where depth of joint will prevent use of joint backing, an adhesive backed polyethylene tape must be installed to prevent three sided adhesion. Joint backing must be dry at time of sealant application.

Application:

Vulkem 116 is easy to apply with conventional caulking equipment.



Fill joint completely and tool. At 75°F., 50% R.H. a durable skin forms within 24 hours. Curing continues at the rate of 1/16 inch depth per day. The cure rate is reduced at lower temperatures and less humidity.

Maintenance:

Damaged sealant can be repaired. Consult your Mameco Distributor or Representative for repair procedures.

AVAILABILITY

Immediately available from Distributors located throughout the United States, Canada, and overseas.

WARRANTY

MAMECO warrants its Vulkem Sealants to be free of defects in

materials, but makes no warranty as to appearance or color. Since methods of application and on site conditions are beyond our control and can affect performance, MAMECO makes no other warranty, express or implied, including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, with respect to Vulkem Sealants. MAMECO's sole obligation shall be, at its option, to replace, or to refund the purchase price of the quantity of Vulkem Sealant proved to be defective and MAMECO shall not be liable for any loss or damage.

Typical Physical Properties

ASTM C920-87
TT-S-00230C

	Requirement	Vulkem 116 Results
Rheological Properties at 40 and 122°F.	3/16" Maximum Flow No Deformation	0 None
Extrusion Rate	45 Seconds Maximum	7
Hardness Properties	15-50	40
Weight Loss	Less than 10%	9.0
Tack Free Time	Tack Free 72 Hours Maximum	30
Stain & Color Change	No Visible Change No Stain	None None
Durability-Cyclic Movement Adhesion & Cohesion	1-1/2 square in. Max Total Bond Loss	Passes
Bubble Formation	1/16 Diameter Max.	Passes
Adhesion-in-Peel	Not less than 5 pli	Aluminum—18-22 pli Concrete—20-25 pli Brick—19-23 pli
	Less than 25% Bond Loss	No Adhesion Loss
Effects of Accelerated Weathering	No cracks greater than #2 on U.V. and Cold Tempera- ture Bond Test	Passes

MAMECO INTERNATIONAL, INC.

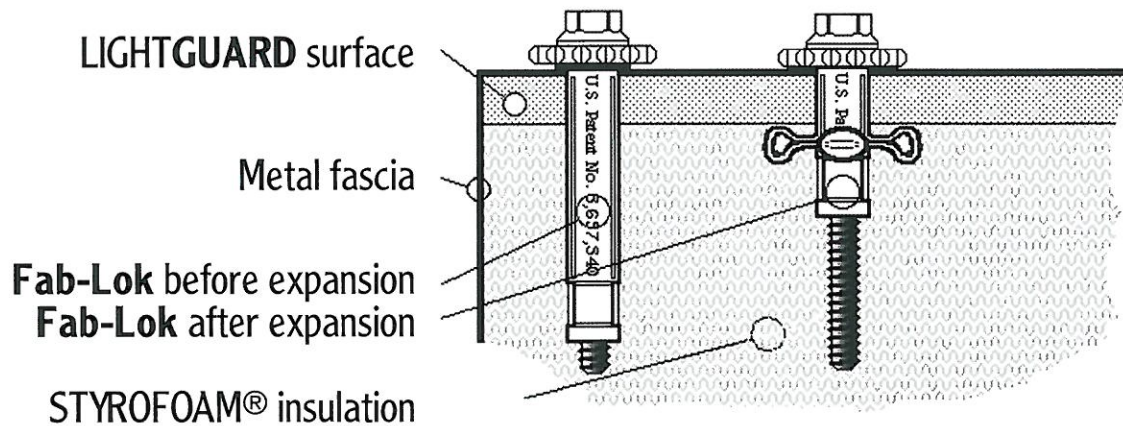
4475 East 175th Street • Cleveland, Ohio 44128-3599
Telephone: (216) 752-4400 • (800) 321-6412 • FAX (216) 752-5005

5/16/05

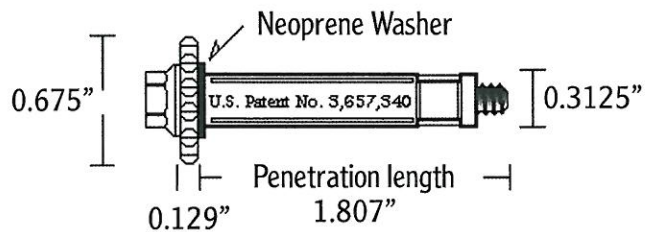
Installation Accessories

Fab-Lok® Fasteners

Used with LIGHTGUARD®



Screw Metal: 305 Stainless
Rivet/Sleeve Material: 5052-H32 Aluminum
Grip Range: 0.5" - 0.75"
Penetration Length: 1.807"



This fastener is a stainless steel threaded machine screw, mechanically joined to a slotted rivet sleeve. The sleeve is aluminum. A 0.5" O.D. neoprene composition washer provides a positive seal.

Order: For LIGHTGUARD, order EZJ250

Contact: Fabco Fastening Systems

For Distributor nearest you, call:
Elco Construction
800-435-7213, ext. 5430
www.fastenersforconstruction.com

®LIGHTGUARD is a registered trademark of T. Clear Corporation
®Styrofoam is a registered trademark of the Dow Chemical Company

5/16/05

Installation Accessories

TPR™ Rivet

Approved for LIGHTGUARD® and HEAVYGUARD®

The new peel rivet, TPR, offers a unique solution to the problems associated with the mechanical attachment of commercial roofing materials and systems. Designed to curl tightly either inside or underneath the concrete surface of LIGHTGUARD or HEAVYGUARD, the fingers create a gripping area four times wider than the fastener

itself. The TPR is made from an aircraft-grade, high magnesium-aluminum alloy that can't rust and is extremely resistant to corrosion, even in the harshest environments. That's why TPR's are warranted against corrosion as well as backout for 15 years.

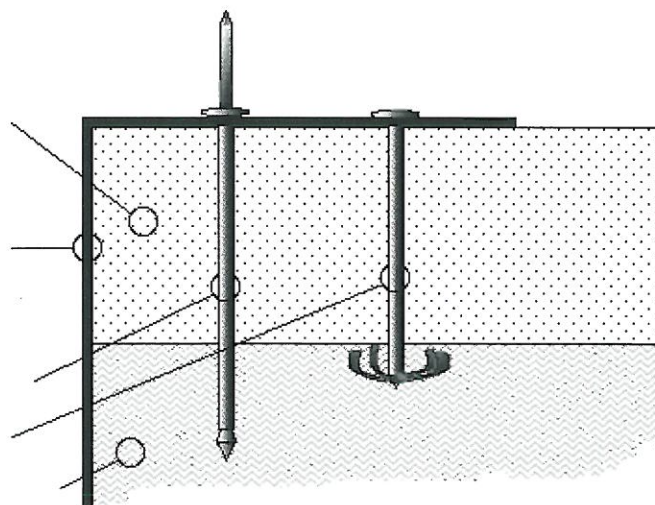
LIGHTGUARD/HEAVYGUARD surface

Metal fascia

TPR before expansion

TPR after expansion

Styrofoam® insulation



The TPR has undergone extensive testing at Factory Mutual and has achieved I-90 wind uplift approvals for use in conjunction with a wide variety of deck, insulation and membrane materials.

To Order:

For LIGHTGUARD, order TPR-1 1/2

Contact:

Dekfast Group

SFS Intec, Inc.

Spring St. & Van Reed Rd.

Wyomissing, PA 19610

800-335-3278 • 610-376-8551

www.sfsintecusa.com

For HEAVYGUARD, order TPR-2

Contact:

T. Clear Corp.

Call 800-544-7398

The TPR is protected by U.S. Patents 4,736,560 with additional U.S. and foreign patents pending

®LIGHTGUARD and HEAVYGUARD are registered trademarks of T. Clear Corporation

®STYROFOAM is a registered trademark of the Dow Chemical Company

5/16/05

Installation Accessories

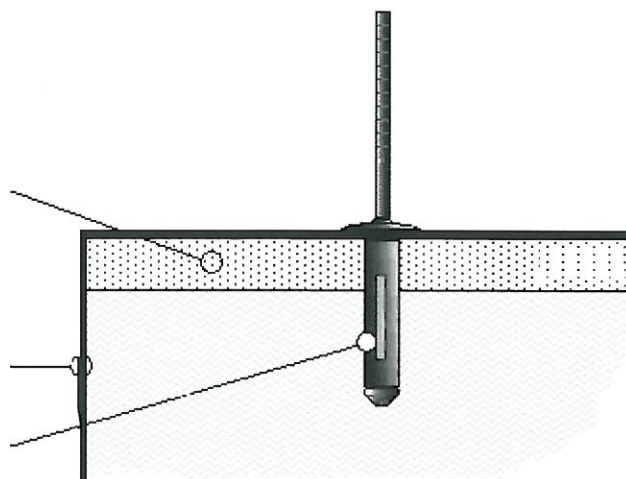
Bulb-Tite Fasteners

Approved for LIGHTGUARD®

LIGHTGUARD concrete surface

Metal fascia

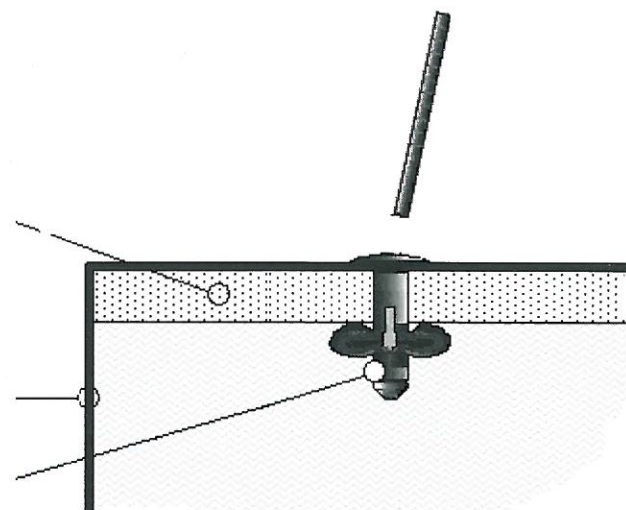
Bulb-Tite Fastener
before expansion



LIGHTGUARD concrete surface

Metal fascia

Bulb-Tite Fastener
after expansion



Order: For LIGHTGUARD RV6604-8-10, Aluminum Rivet, Aluminum Mandrel

Call T. Clear Corporation 1-800-544-7398

®LIGHTGUARD is a registered trademark of T. Clear Corporation

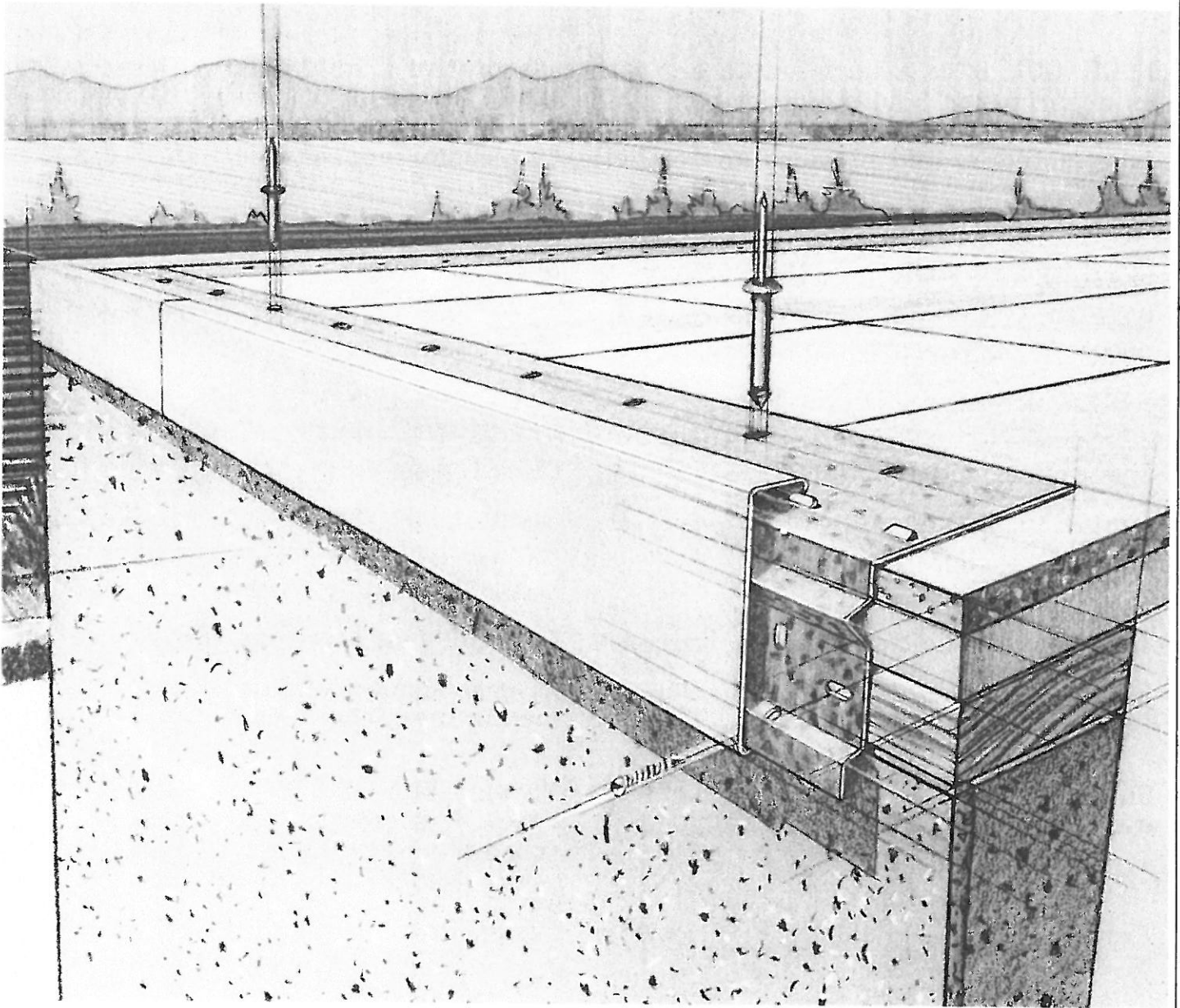
weight = 15 lbs per box

HICKMAN®
The Leading Edge®

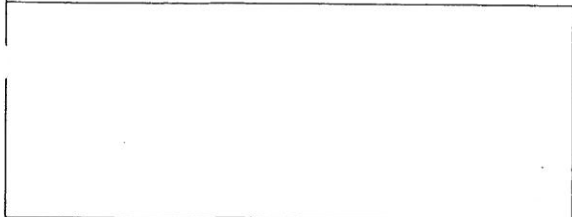
Edge-Guard™

Termination Fascia and Perimeter Hold-Down System
for Lightguard® and Heavyguard® Brand Insulation

Lightguard® and Heavyguard® are trademarks of T. Clear Corporation



REPRESENTED BY:



W.P. Hickman Company
P.O. Box 15005
Asheville, NC 28813

Edge-Guard™

Termination Fascia and Perimeter Hold-Down System for Lightguard® and Heavyguard® Brand Insulation

Lightguard® and Heavyguard® are trademarks of T. Clear Corporation

EDGE-GUARD™ is a termination bar with a decorative fascia, designed especially as a perimeter hold down device. EDGE-GUARD™ consists of a heavy 20 gauge aluminized steel retainer with a snap-on fascia which conceals all exposed face fasteners and provides an aesthetically pleasing appearance.

EDGE-GUARD™ provides the following architectural benefits:

FEATURE:

Positive paver hold down. Paver becomes part of the edge system.

Full 6" coverage of Paver Edge.

Economical construction.

Simple to install.

Retainer is face fastened.

Internal drip holes.

Retainer acts as a Termination Bar for the roof membrane.

Snap-on fascia locks in place securely, but is free to expand and contract.

Fascia trim is available in a variety of gauges and colors.

KYNAR 500™ finish on Fascia trim.

EDGE-GUARD™ is a product of the W.P. Hickman Company

BENEFIT:

Withstands high winds at the building perimeter to prevent roofing blowoff.

Full compliance with Lightguard® and Heavyguard® specifications.

Gives top performance at low cost.

Saves money. Speeds up installation.

No penetration through the membrane across the top.

Does not trap water at the edge.

Assures secure holding of the roof membrane at the perimeter.

No wind blow-off, no buckling. Fascia trim can move without tearing roof membrane or breaking the perimeter seal of the roofing.

Design flexibility, and economy.

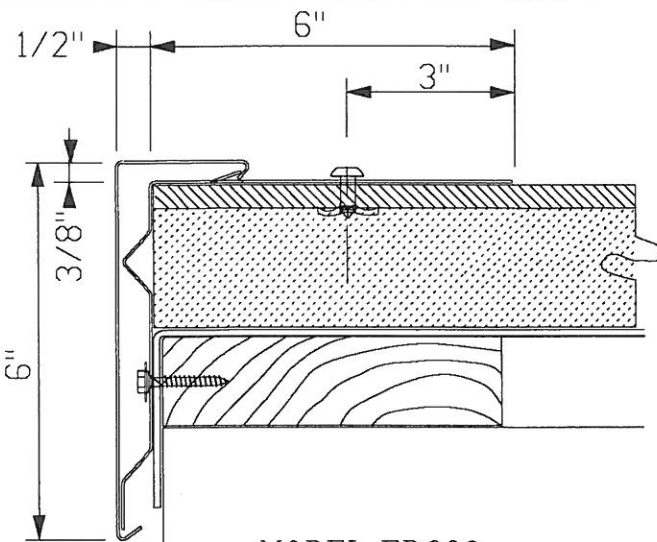
Long life, so you won't need to repaint or replace Fascia.

W.P. Hickman Company
P.O. Box 15005
Asheville, NC 28813

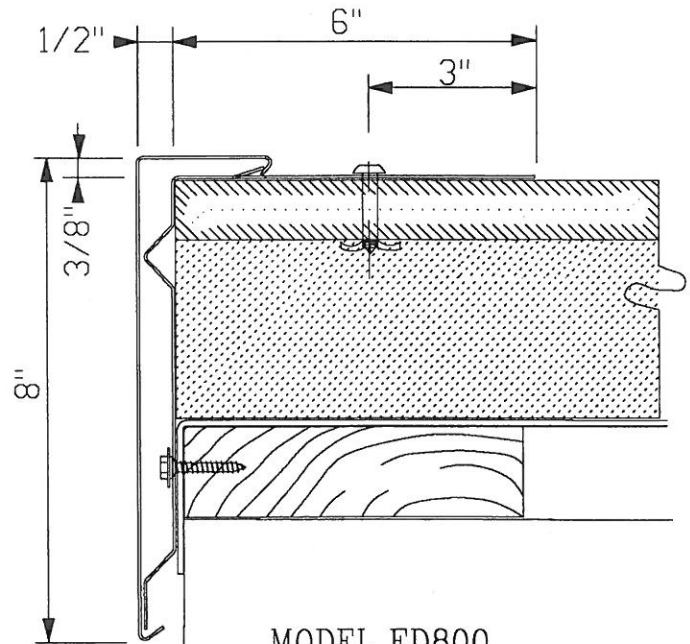
Edge-Guard™

Termination Fascia and Perimeter Hold-Down System for Lightguard® and Heavyguard® Brand Insulation

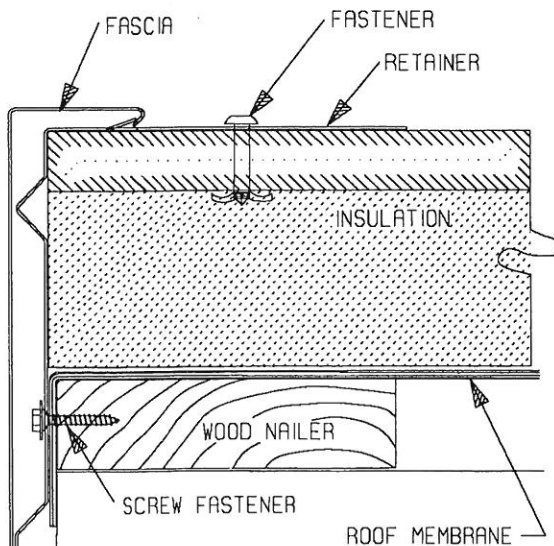
Lightguard® and Heavyguard® are trademarks of T. Clear Corporation



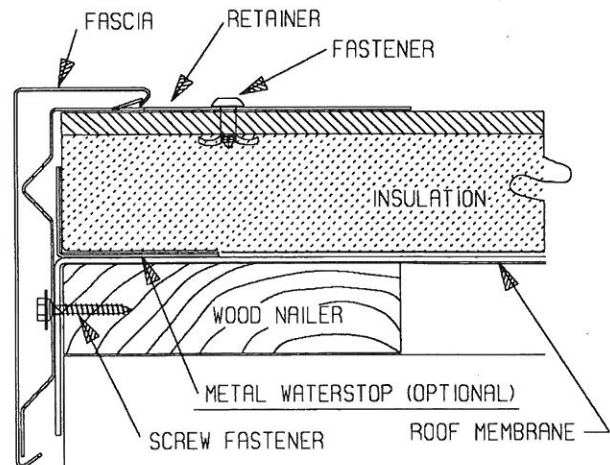
MODEL ED600
for 2" & 3" Lightguard™ and 2" Heavyguard™



MODEL ED800
for 3.5" Lightguard™ and 3" and 3.5" Heavyguard™



MODEL ED800
with Modified Bitumen or Built-up Roofing



MODEL ED600
with Single-Ply Elastomeric Membrane
and Optional Metal Waterstop set in mastic

INSTALLATION:

STEP ONE:

Install Roofing and Insulation:

Install roofing membrane and insulation or ballast boards according to manufacturer's specifications. If desired, a light gauge metal waterstop may be installed at the edge. W.P. Hickman can supply these in .032 aluminum or 24ga aluminized steel.

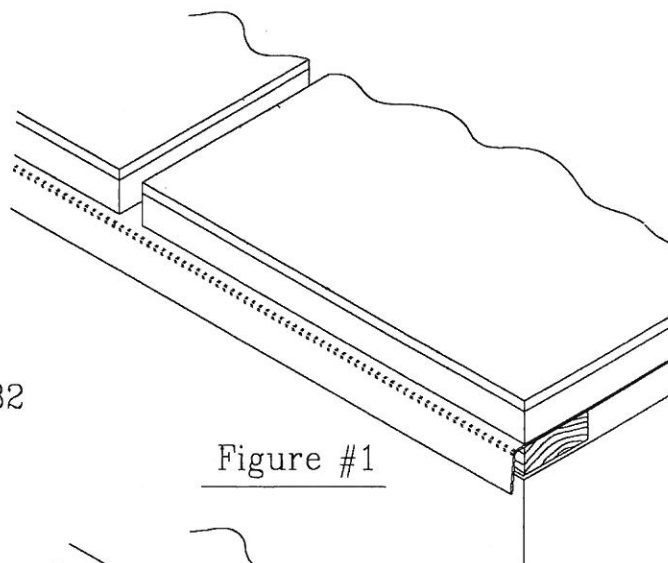


Figure #1

STEP TWO:

Install Retainer:

Install EDGE-GUARD aluminized steel Retainer at the perimeter using fasteners supplied by Hickman for attachment to perimeter nailers. The EDGE-GUARD retainer serves as a termination bar for the roof membrane. Using fasteners as specified by the insulation manufacturer, fasten through the top flange of the EDGE-GUARD retainer as close to the center of each insulation board as possible. Use only one fastener per insulation board. Installer should miter the retainer at the corners.

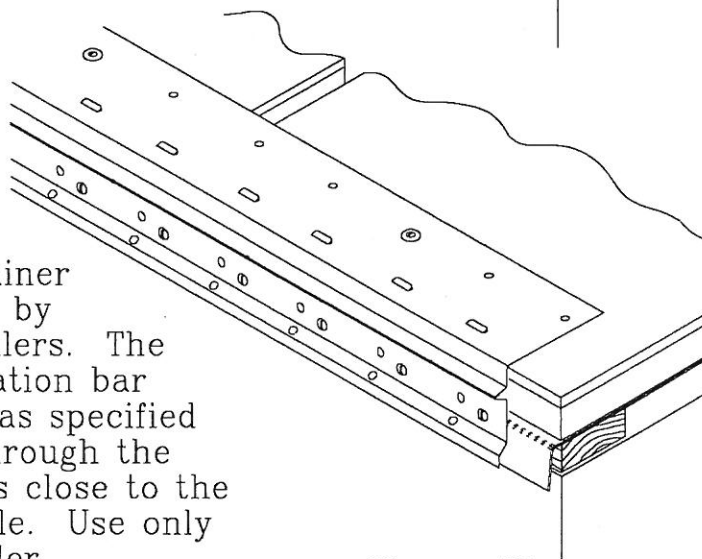


Figure #2

STEP THREE:

Install Decorative Fascia:

Snap a decorative EDGE-GUARD Fascia over the retainer by hooking the fascia on the lower edge of the retainer and rotating the cover back toward the roof. Securely lock the fascia into the anchor tabs on the top flange of the steel retainer. Notch and lap adjacent sections of fascia for a continuous, clean, sight-line. Fascia may be notched and hand-formed to fit at the corners.

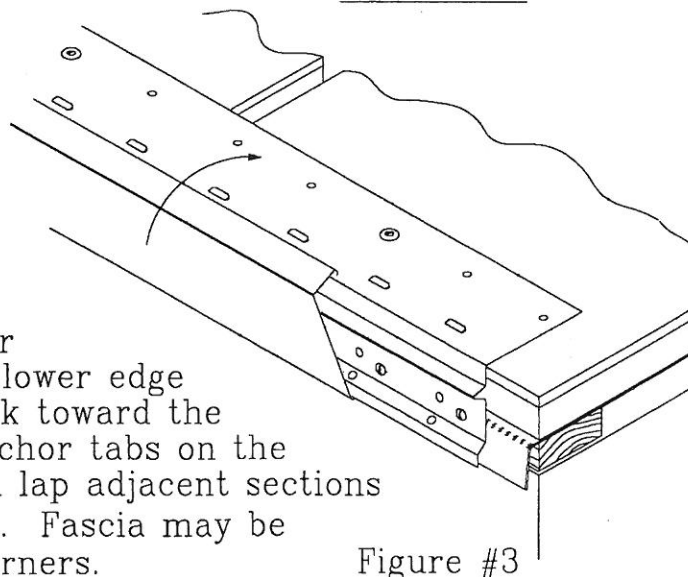
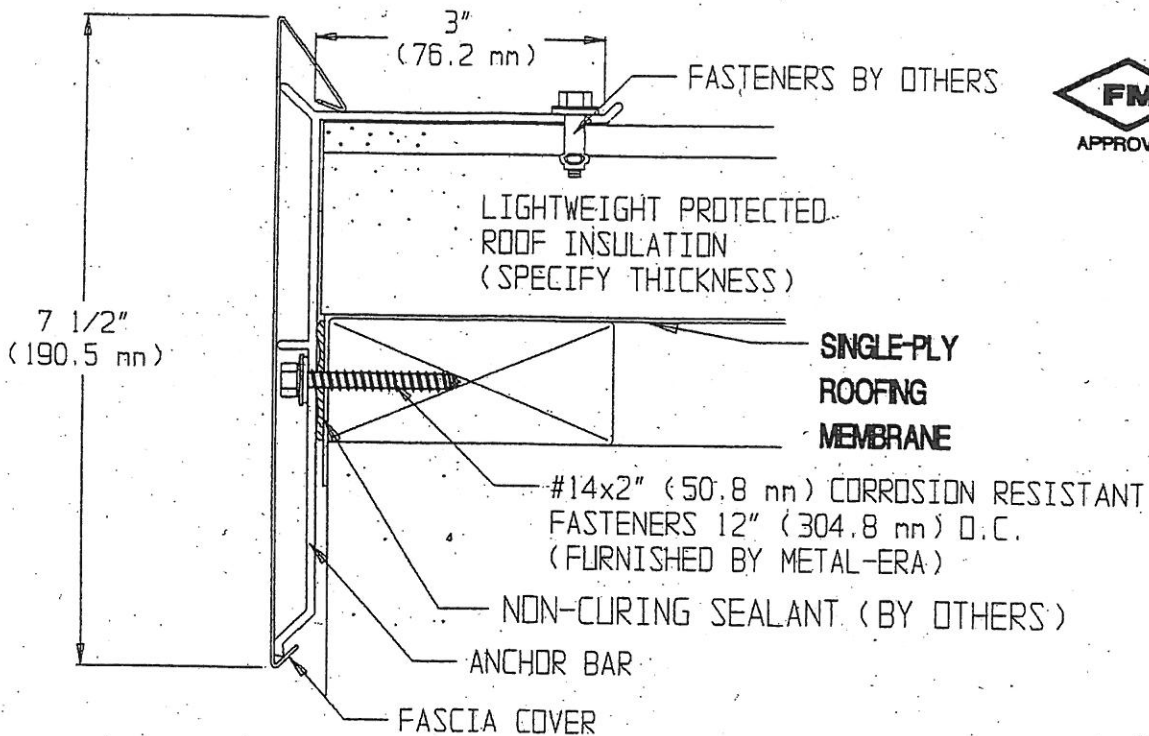


Figure #3

ANCHOR-TITE PMR/LOCK VERSION FASCIA SYSTEM

FOR USE WITH LIGHTWEIGHT PROTECTED MEMBRANE ROOFING



METALS:

24 GA. (.65 mm) STEEL
.040" (1.01 mm) ALUMINUM

COLOR: _____

FINISH: _____

INSULATION THICKNESS:

- ☐ 2" [2 3/8" (60.3 mm) ACTUAL]
☐ 3" [3 3/8" (85.7 mm) ACTUAL]
☐ OTHER: _____

Fabrication will proceed only after receipt of signed print approval.

Print Approval:

Architect and/or contractor shall verify all dimensions, sizes, and quantities. All products to be installed in strict accordance with Metal-Era, Inc. printed instructions.

Approved by: _____

Date: _____

QUANTITIES:

_____ LINEAL FEET [12'-0" (3.65 m) LENGTHS]
_____ OUTSIDE MITERS ()
_____ INSIDE MITERS ()
_____ OVERFLOW SCUPPER
_____ SPILLOUT SCUPPER
_____ DOWNSPOUT SCUPPER () SIZE

PROJECT

ARCHITECT

ROOFING CONTRACTOR

REPRESENTATIVE/DISTRIBUTOR

Corporate Offices, Manufacturing
N4 W22450 Bluenound Road
Waukesha, Wisconsin 53186
Telephone: (414)-549-6900
Watts Line: 800-558-2162
Fax: (414)-549-6009

Metal-Era
ROOF EDGE SYSTEMS
PHONE 1-800-558-2162

DATE: 12/13/93

DRN BY: RMG

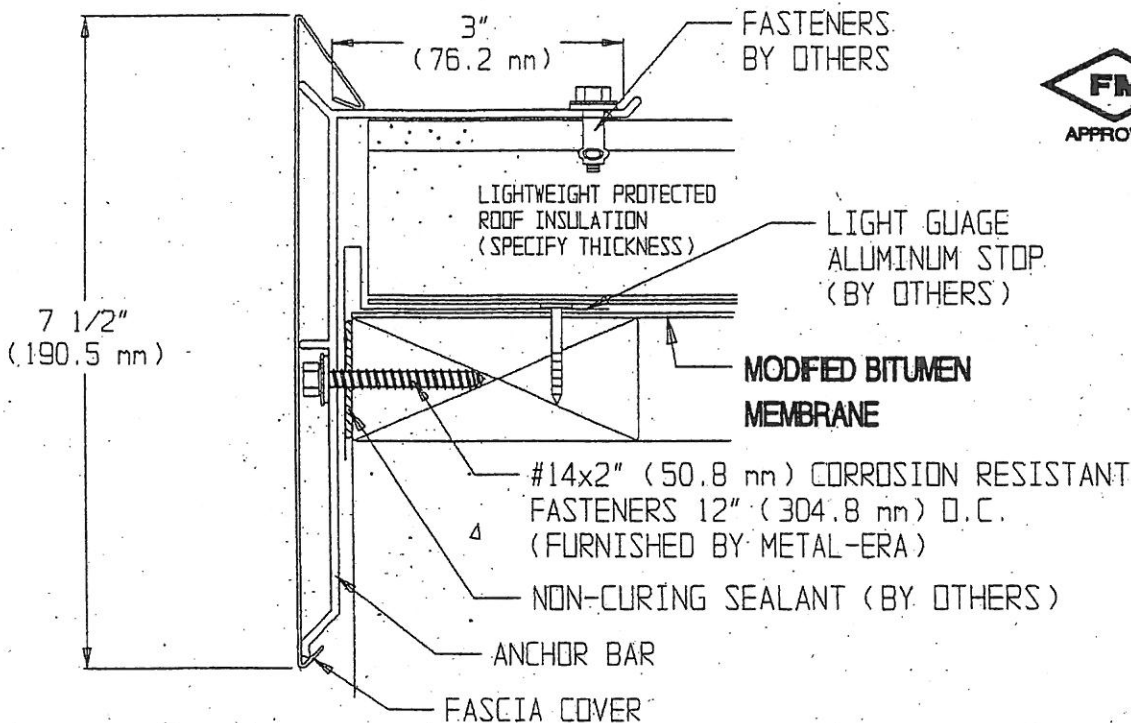
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SHT# ____ OF ____

DWG#: 1116A000

ANCHOR-TITE PMR/LOCK VERSION FASCIA SYSTEM

FOR USE WITH LIGHTWEIGHT PROTECTED MEMBRANE ROOFING



METALS:

24 GA. (.65 mm) STEEL
 .040" (1.01 mm) ALUMINUM

COLOR: _____
 FINISH: _____

INSULATION THICKNESS:

- ☐ 2" [2 3/8" (60.3 mm) ACTUAL]
☐ 3" [3 3/8" (85.7 mm) ACTUAL]
☐ OTHER: _____

Fabrication will proceed only after receipt of signed print approval.

Print Approval:

Architect and/or contractor shall verify all dimensions, sizes, and quantities. All products to be installed in strict accordance with Metal-Era, Inc. printed instructions.

Approved by: _____
 Date: _____

QUANTITIES:

_____ LINEAL FEET [12'-0" (3.65 m) LENGTHS]
 _____ OUTSIDE MITERS (°)
 _____ INSIDE MITERS (°)
 _____ OVERFLOW SCUPPER
 _____ SPILLOUT SCUPPER
 _____ DOWNSPOUT SCUPPER (_____) SIZE

PROJECT

ARCHITECT

ROOFING CONTRACTOR

REPRESENTATIVE/DISTRIBUTOR

Corporate Offices, Manufacturing
 N4 W22450 Bluenound Road
 Waukesha, Wisconsin 53186
 Telephone: (414)-549-6900
 Watts Line: 800-558-2162
 Fax: (414)-549-6009

Metal-Era
 ROOF EDGE SYSTEMS
 PHONE 1-800-558-2162

DATE: 12/20/93

DRN BY: RMG

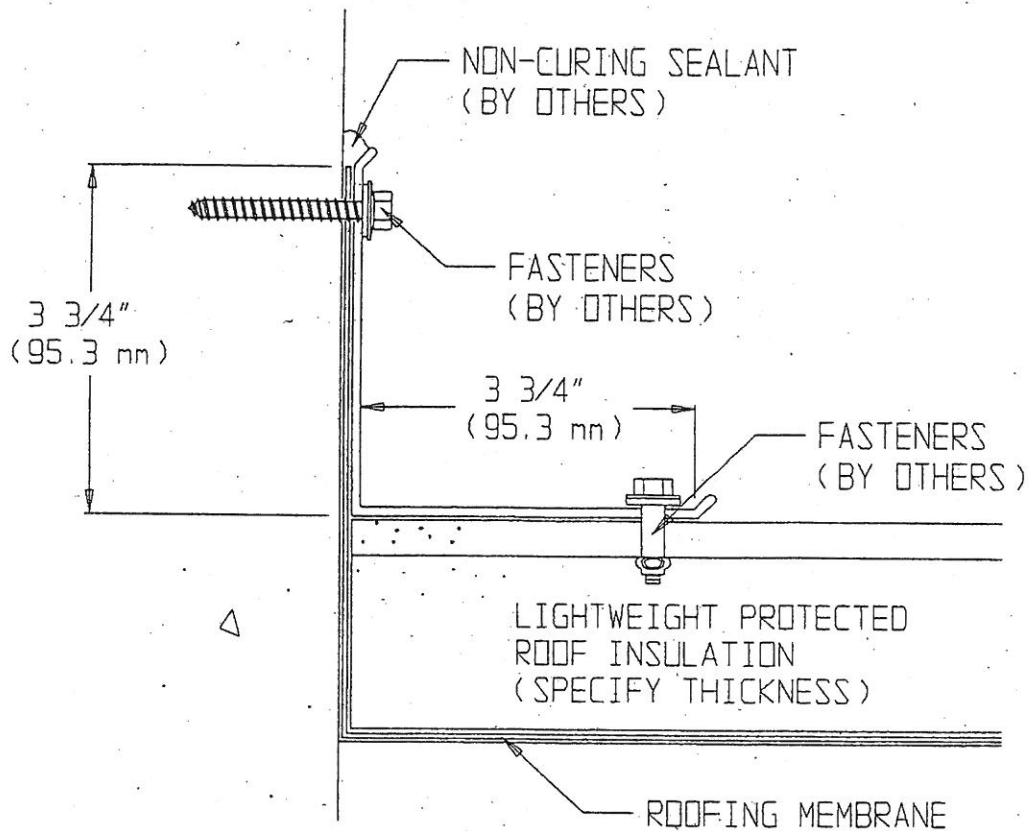
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SHT# _____ OF _____

DWG#: 1116A001

ANCHOR-TITE PMR/LOCK TYPE I COMPRESSION/RETAINER BAR

FOR USE WITH LIGHTWEIGHT PROTECTED MEMBRANE ROOFING



Fabrication will proceed only after receipt of signed print approval.

Print Approval:

Architect and/or contractor shall verify all dimensions, sizes, and quantities. All products to be installed in strict accordance with Metal-Era, Inc. printed instructions.

Approved by: _____

Date: _____

QUANTITIES:

_____ LINEAL FEET [12'-0"
(3.65 m) LENGTHS]
_____ OUTSIDE MITERS (____°)
_____ INSIDE MITERS (____°)

INSULATION THICKNESS:

- ☐ 2" [2 3/8" (60.3 mm) ACTUAL]
☐ 3" [3 3/8" (85.7 mm) ACTUAL]
☐ OTHER: _____

PROJECT

ARCHITECT

ROOFING CONTRACTOR

REPRESENTATIVE/DISTRIBUTOR

Corporate Offices, Manufacturing
N4 W22450 Bluenound Road
Waukesha, Wisconsin 53185
Telephone: (414)-549-6900
Watts Line: 800-558-2162
Fax: (414)-549-6009

ME Metal-Era
ROOF EDGE SYSTEMS
PHONE 1-800-558-2162

DATE: 10/14/93

DRN BY: RMG

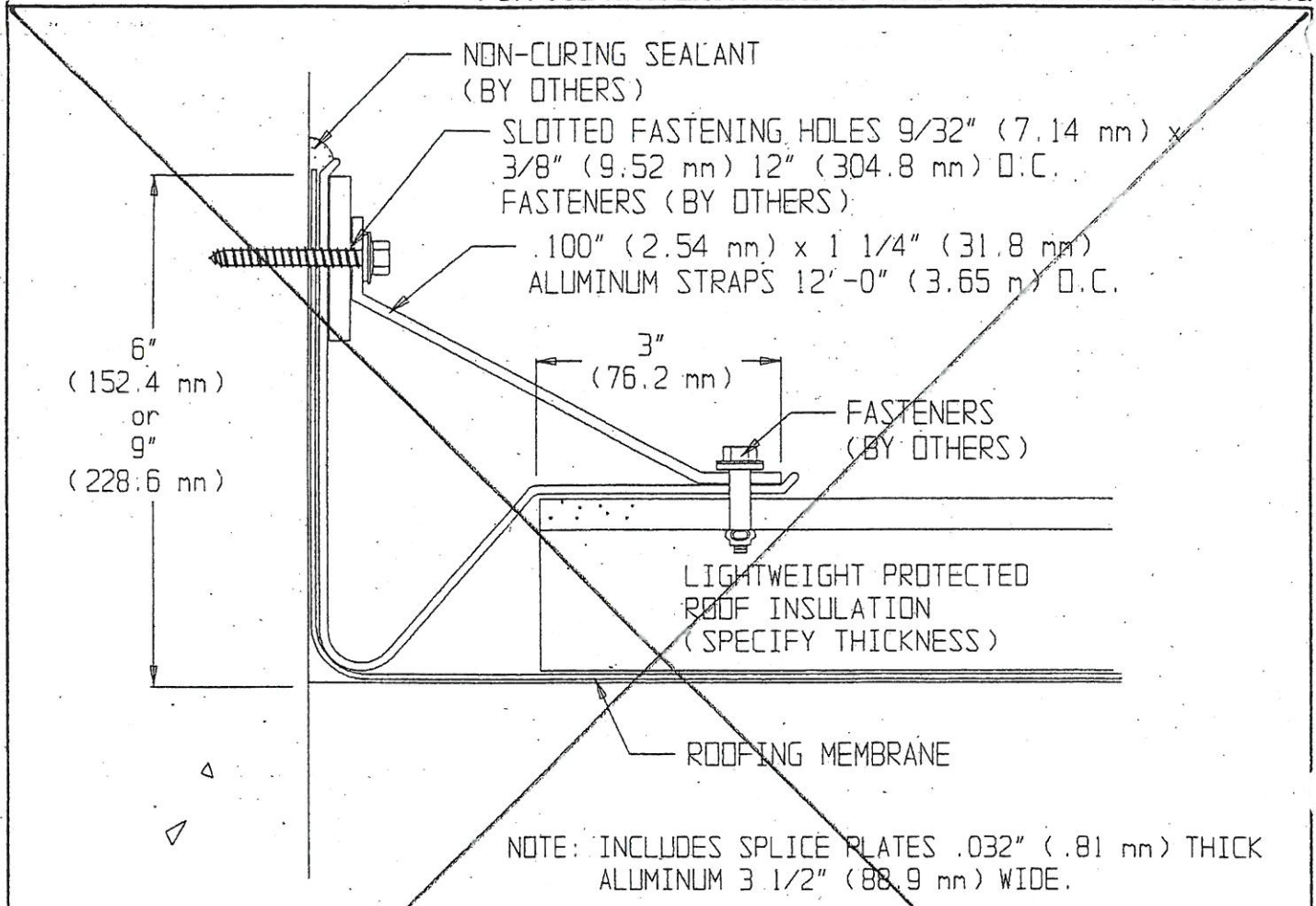
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SHT# ____ OF ____

DWG#: 1116A002

"THE ELIMINATOR" PMR/LOCK VERSION COMPRESSION/RETAINER BAR

FOR USE WITH LIGHTWEIGHT PROTECTED MEMBRANE ROOFING



Fabrication will proceed only after receipt of signed print approval.

Print Approval:

Architect and/or contractor shall verify all dimensions, sizes, and quantities. All products to be installed in strict accordance with Metal-Era, Inc. printed instructions.

Approved by: _____

Date: _____

QUANTITIES:

_____ LINEAL FEET [12'-0"
(3.65 m) LENGTHS]
_____ OUTSIDE MITERS (____°)
_____ INSIDE MITERS (____°)

HEIGHT:

☐ 6" (152.4 mm)
☐ 9" (228.6 mm)
☐ OTHER _____

INSULATION THICKNESS:

☐ 2" [2 3/8" (60.3 mm) ACTUAL]
☐ 3" [3 3/8" (85.7 mm) ACTUAL]
☐ OTHER _____

PROJECT _____

ARCHITECT _____

ROOFING CONTRACTOR _____

REPRESENTATIVE/DISTRIBUTOR _____

Corporate Offices, Manufacturing
N4 W22450 Bluenound Road
Waukesha, Wisconsin 53186
Telephone: (414)-549-6900
Watts Line: 800-558-2162
Fax: (414)-549-6009

Metal-Era
ROOF EDGE SYSTEMS
PHONE 1-800-558-2162

DATE: 12/20/93

SHT# ____ OF ____

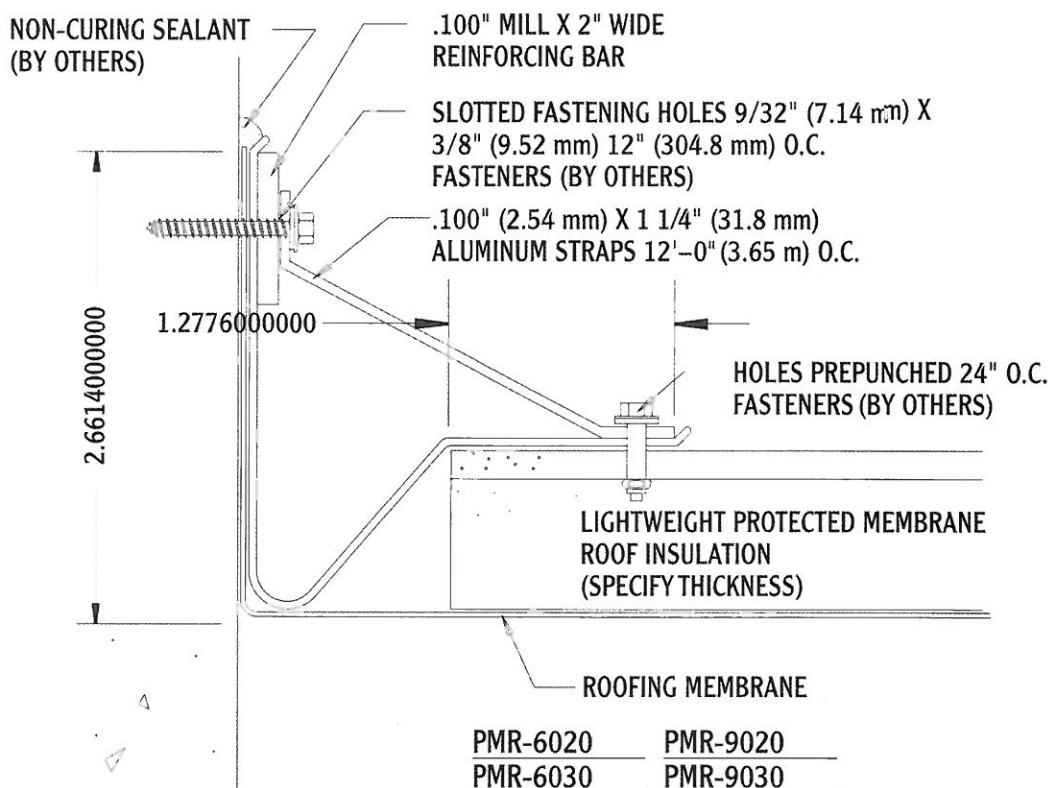
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DWG#: 1116A002

'THE ELIMINATOR' PMR/LOCK COMPRESSION/RETAINER BAR

FOR USE WITH LIGHTWEIGHT PROTECTED MEMBRANE ROOFING



NOTE: INCLUDES SPLICE PLATES .032\" (81 mm) THICK
ALUMINUM 3 1/2\" (88.9 mm) WIDE

Fabrication will proceed only after receipt of
signed print approval.

Print Approval:

Architect and/or contractor shall verify all dimensions,
sizes, and quantities. All products to be installed in
strict accordance with Metal-Era, Inc. printed instructions.

Approved by: _____
Date: _____

HEIGHT: ☐ 6\" (152.4 mm)
☐ 9\" (228.6 mm)
☐ Other _____

INSULATION THICKNESS:
☐ 2\" [2 3/8\" (60.3 mm) ACTUAL
☐ 3\" [3 3/8\" (85.7 mm) ACTUAL
☐ Other _____

QUANTITIES:

_____ Lineal Feet
[12'-0\" (3.65 m) Lengths]
_____ Outside Miters @ (____\")
_____ Inside Miters @ (____\")

PROJECT

ARCHITECT

ROOFING CONTRACTOR

REPRESENTATIVE/DISTRIBUTOR

Corporate Offices, Manufacturing
1600 Airport Road
Waukesha, Wisconsin 53188
Telephone: (262) 549-6900
Watts Line: (800) 558-2162
Fax: (262) 549-6009
<http://www.metalera.com>



DATE: 10/1/99

DRN BY: MAS

CKD BY: SAK

SHT. # ____ OF ____

DWG # 1116A003