

# THERMAL-GRIP Masonry Veneer Anchor

The Thermal-Grip<sup>®</sup> Masonry Veneer Anchor from TRUFAST<sup>®</sup> Walls helps solve the challenge of thermal-bridging, air and water hold-outs, and labor costs. It is designed to anchor masonry veneer and continuous insulation to steel, concrete, CMU, wood stud and other masonry substrates while maintaining thermally efficient design and air barrier performance.



# SUMMARY OF PARTS

The MVA-Light Duty fasteners are engineered to mechanically attach to a wide variety of substrates such as concrete, CMU, wood stud, plywood, OSB, and metal studs ranging from 16-gauge to 24-gauge. Pre-drilling is not required for wood or metal stud applications, but a 3/16-inch pilot hole is recommended for concrete or CMU applications. Install using a maximum 2,500-rpm screw gun or impact driver.

The fasteners are case-hardened and tempered for easy installation and long-term durability. The included T-30, 6-lobe internal drive offers excellent bit engagement during installation, especially in high-torque applications.

#### **MVA-LIGHT DUTY SCREW**

Light-duty drill point for metal stud (16ga-24ga), wood, concrete, and CMU applications



#### BARREL

SABIC LEXAN 143 polycarbonate barrel lengths available for 1", 1.5", 2", 2.5", 3", 3.5", or 4" insulation thickness





#### **CODE APPROVALS & LISTINGS**



FM Global CE European Technical Approval ETA 19/0616



MIAMI-Dade County State of Florida FL# 4500-R4 DrJ Certification Technical Evaluation Report TR 1909-04

# **THERMAL-GRIP MVA**

### **THERMAL ANALYSIS**

**Evaluated Scenarios:** A third-party thermal evaluation was performed on the MVA system to determine the effective U-value and R-values within various wall assemblies. The parameters and variations of these wall assemblies are shown in Table 1.1 below. A summary of results, comparing the thermally broken MVA to a non-thermally broken veneer tie can be seen in table 1.2. To review the full report, please contact your local PROSOCO representative for a copy.

Table 1.1 THERMAL ANALYSIS EVALUATED SCENARIOS			
Parameters	Variations		
Backup Wall Assembly	3-5/8" & 6" steel stud wall		
Cavity Insulation	None, R-12 (for 3-5/8" cavity) and R-20 (for 6" cavity)		
MVA spacing	16" x 16"		
Exterior Insulation	Mineral Wool (R-4.2/in), XPS (R-5/0/in) and Polyiso (.6/in)		
Insulation Depth	2", 3", 4"		
Wire Tie Material	Galvanized Steel		

**Evaluation Assumptions:** The Thermal-Grip MVA system assemblies for this report were evaluated using three-dimensional thermal modeling, which allows for the analysis of the entire wall system to provide a more comprehensive assessment of the impact of thermal bridging for the assembly that accounts for lateral heat flow. Thermal modeling was performed in general conformance with ASHRAE 1365-RP, CSA Z5010: *Calculation of Thermal Bridges in Building Enclosure Assemblies* and the ASHRAE Handbook Fundamentals. Per industry standard modeling practices, the analysis was conducted under steady-state heat flow using published material properties assuming isotropic and temperature independent thermal conductivities, and assembly information provided.





# **THERMAL-GRIP MVA**

### **THERMAL ANALYSIS**

Table 1.2: Masonry Tie System Thermal Performance Comparison (16" On-Center Spacing)						
Anchor	Exterior Insulation Depth (Mineral Wool)	Nominal Exterior Insulation R-Value (ft²·hr·ºF/Btu)	Whole System Theoretical R-Value (ft²·hr·ºF/Btu)	Simulated Effective R-Value with Fasteners (ft²·hr·ºF/Btu)	Thermal Efficiency	
PROSOCO Thermal	2″	8.4	12.2	11.1	91.0%	
Grip MVA	3″	12.6	16.4	14.6	89.0%	
(Stainless Steer ne wire)	4″	16.8	20.6	17.8	86.4%	
PROSOCO Thermal Grip MVA (Galvanized Steel Tie Wire) <sup>1</sup>	2″	8.4	12.2	11.0	90.2%	
	3″	12.6	16.4	14.5	88.4%	
	4"	16.8	20.6	17.7	85.9%	
	2″	8.4	12.7	11.1	87.4%	
Anchor	3″	12.6	16.9	14.2	84.0%	
(Galvanized Steel Tie Wire) <sup>2</sup>	4"	16.8	21.1	17.1	81.0%	
Carbon Steel Adjustable Veneer Tie (Galvanized Steel Tie Wire) <sup>3</sup>	2″	8.4	12.7	10.1	79.5%	
	3″	12.6	16.9	12.5	74.0%	
	4"	16.8	21.1	14.6	69.2%	

#### Notes:

- 1. For the full thermal simulation report with U-value and Chi-value data in addition to wall compositions including R-12 & R-20 cavity wall insulation as well as Mineral Wool, XPS, and Polyiso exterior insulation simulations, please contact PROSOCO technical support.
- 2. Performance obtained from the Thermal Envelope Thermal Bridging Guide (thermalenvelope.ca) detail 5.1.67

3. Performance obtained from the Thermal Envelope Thermal Bridging Guide (thermalenvelope.ca) detail 5.1.70

#### **Fastener Properties**

Ultimate Tension AISI S904	Ultimate Shear AISI S904	Bending Yield Strength -Fyb ASTM F1575	Corrosion Resistance ASTM D6294, ETAG 006
3,390 lb	2,490 lb	185 ksi	<15% Red Rust after 30 cycles

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METAL STUD THICKNESS	24-gauge	22-gauge		20-gauge	18-gauge	16-ga	auge
Yield Strength	36 ksi	36 ksi	85 ksi	36 ksi	36 ksi	36 ksi	100 ksi
MVA-Light Duty Screw	250 lbs	381 lbs	435 lbs	449 lbs	694 lbs	896 lbs	1185 lbs

### Fastener Pull Out Values In Metal Stud<sup>1</sup>

<sup>1</sup>Minimum <sup>3</sup>/<sub>4</sub>" penetration of fastener through metal stud

### Fastener Withdrawal Values in Lumber & Engineered Wood, Edge Grain<sup>2</sup>

Wood Type (Specific Gravity)		
SPF/HF (0.42)	DF/SP (0.50)	LVL (0.50)
497 lb/in	720 lb/in	381 lb/in

<sup>2</sup>Load values listed in lbs per inch of embedment (including the fastener tip). Typical installation into wood studs provides a minimum of 1-1/4" embedment, depending on sheathing type and thickness

### Fastener Withdrawal Values in Engineered Wood Substrates (lbs)<sup>3</sup>

	OSB				Plywood		
Thickness	7/16"	1/2″	19/32"	23/32"	15/32"	19/32"	23/32"
MVA-Light Duty Screw	284 lb	261 lb	334 lb	693 lb	344 lb	519 lb	720 lb

<sup>3</sup>Fastener penetrates through the full thickness of board

### Fastener Tension Values in Normal Weight Concrete & CMU<sup>4</sup>

2500-psi Concrete	5000-psi Concrete	CMU⁵
476 lb	648 lb	553 lb

<sup>4</sup>Fastener penetrates 1" into the concrete or CMU block, including the tip <sup>5</sup>Concrete masonry unit (CMU) conforming to ASTM C90

#### DISCLAIMER

The performance specifications published in this PROSOCO product literature are based on controlled laboratory tests and are intended as a guideline only. They are not guaranteed in any way since building design, engineering, and construction, including workmanship and materials, are beyond the control of the manufacturer. The manufacturer recommends that pull-out tests be conducted to verify the substrate provides adequate pull-out values.



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**JEFF Engineering Support** Engineering details and personalized solutions for your specific needs.



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## HOW TO ORDER

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#### **Insulation Thickness**

Backing Material Modifier Gypsum sheathing = 1/2" Wood sheathing = 0" CMU/Concrete = 0"

-ength



### 1. Choose your Barrel Anchor

62160-0100	1"	Barrel Length
62160-0150	1.5"	Barrel Length
62160-0200	2"	Barrel Length
62160-0250	2.5"	Barrel Length
62160-0300	3"	Barrel Length
62160-0350	3.5"	Barrel Length
62160-0400	4"	Barrel Length



- 3" Tie Length = 1" to 2" Air space
- 4" Tie Length = 1-1/2" to 3" Åir space
- 5" Tie Length = 2-1/2" to 4" Air space

62165-0300	3" Hot-Dip Galvanized Wire Tie
62165-0400	4" Hot-Dip Galvanized Wire Tie
62170-0300	3" Stainless Steel Wire Tie*
62170-0400	4" Stainless Steel Wire Tie*
62170-0500	5" Stainless Steel Wire Tie*



\*Special Order

**Note:** Per BIA Tech Note 28D, 1" minimum air space is required dimensionally to account for construction tolerances, but an air space of 2" minimum is recommended too allow for drainage. Cavity measurements provide 5/8" minimum mortar coverage from the exterior and 1-1/2" minimum embedment into standard brick veneer .

## MVA barrel will recess ½" into the gypsum sheathing



#### CMU, Concrete, or Wood Stud Construction







