



## Ambrico EZ-Wall Thin Brick Installation System

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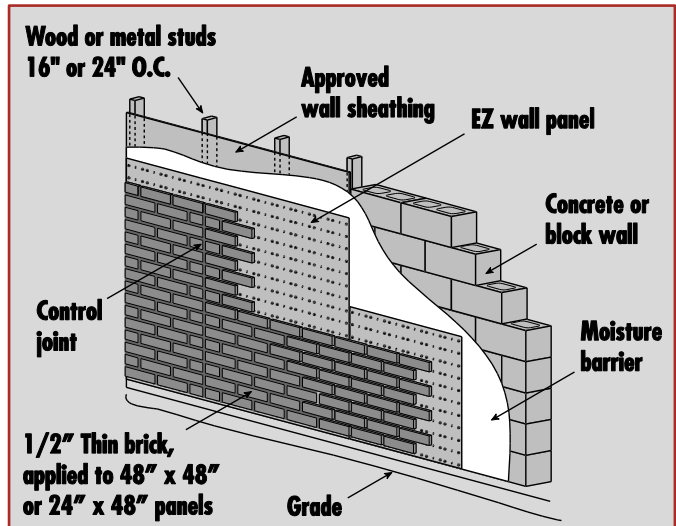
# EZ-Wall Installation Manual

*Engineered Thin Brick Panel System*

## INTRODUCTION

Thin brick is a lightweight masonry veneer used on the exterior walls of homes and commercial buildings to give the appearance of traditional brick at a more affordable cost, easier installation, and lower impact to the environment.

**IMPORTANT!** Ensure that you have read and understand the entire manual before beginning work. If you are not confident in your ability to perform the tasks outlined in this manual, contact Ambrico or a local professional contractor for help.



## BEFORE YOUR PROJECT BEGINS

### Estimate Materials Required

- ◆ Before beginning, determine total square footage of the coverage area.
- ◆ Then, determine the lineal footage for flashings, trims, and starter strips.

### Materials Required: For modular size thin brick

**Note:** Ambrico has easy to use estimating tools and calculators available at <http://www.ambrico.com/thin-brick/samples-estimates/adv-thin-brick-calc/>

- ◆ EZ-Wall Panel Square Footage Required = Total Square Footage + 2% (for waste)
- ◆ EZ-Wall thin brick veneer flats = (Total Square Feet x 7.000)  
(ASTM STD C1088 is 5% breakage permissible)
- ◆ EZ-Wall thin brick veneer corners = (Total Square Feet x 4.70)  
(ASTM STD C1088 is 5% breakage permissible)
- ◆ EZ-Wall Mastic = Total square feet/16)
- ◆ Ambrico Mortar (50# bags) = Total square feet/30

For additional ordering information, see the end of this manual or <http://www.ambrico.com>.



# EZ-Wall Installation Manual



## Engineered Thin Brick Panel System

**Note:** Most projects require only flat and corner thin brick veneer, however some projects may need specialty thin brick veneer such as end-caps. Specialty thin brick veneer can be ordered through Ambrico.

Add additional mastic tubes for first-time jobs as crews tend to put on more than is necessary. Also – corner thin brick veneer uses 50% more than flat thin brick veneer but also cover 50% more wall area than flat thin brick veneer. Corner thin brick veneers cover nominally 8” on one wall and 4” around the corner.

The correct amount of mastic is that one tube will cover approximately 16 sq/ft.

## Estimate Labor Required

**Note:** These guidelines do not include time to install flashings, trim angles, weather barriers, or caulking. If time is required for installing those items, it must be added separately.

### One Story Applications:

- ♦ 12-13 man hours per 100 Total Square Feet (using power-driven nails)
- ♦ 13-14 man hours per 100 Total Square Feet (using screws)
- ♦ Add all lineal footage (around windows and doors, at soffits and trims) and ÷ 10. This will give you man-hours of cutting labor.

### Two (or More) Story Applications

Add 10% to the estimate per story.

**Note:** You may want to add additional time for first-time crew or intricate work.

## Purchasing Materials Locally

*The following materials are required for the installation and can be purchased locally:*

**Note:** Additional product specifications are available at <http://www.ambrico.com/architects/technical-info/>

- ♦ Fasteners – compatible with panel material, corrosive resistant (1 per square foot)
- ♦ Sheathing – must meet code application
- ♦ Caulk or sealant (if required)
- ♦ Cleaning agent (if needed)
- ♦ Water infiltration material - felt paper, Tyvek, or equal



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## Engineered Thin Brick Panel System

### Tools Required

*The following tools are recommended for the installation and can be purchased or rented locally:*

Hammer and nails	Nail Gun	Metal Screws
Level	Chalk line	Tin snip or power shears
Quart size caulking gun	Offset tile nippers	Circular saw/masonry blade
Utility knife	Flat screwdriver	Extension cord
Mortar scoop	Sawhorse and support planks	Plastic mortar tub
Water brush	Mortar bags and tip	Two gallon water pail with quart measurements
Water buckets (3-5 gallon pails)	Wheelbarrow and mixing paddle	Screen with ¼ in. opening, approximately 2 ft. x 2 ft.
Template for cutting and holding thin brick veneer	Ladders, jacks, picks, scaffold and lifts, OSHA approved	Striker, jointer rounded ½ in. x 5/8 in.
Flat, stiff tampico bristle brush to clean thin brick veneer surface	Commercial brick cleaning materials. Never acid.	Cleaning brush (plastic to clean tools and equipment only)
Personal Protection Equipment (eye protection, foot protection, etc.)		

### Wall Preparation

**Note:** Additional specifications required for wall preparation are available at  
<http://www.ambrico.com/architects/technical-info/>

- ◆ Ensure the walls are structurally sound. Get owner or engineer's written approval prior to installation.
- ◆ Substrate must have a deflection design no less than L/240.
- ◆ Corners must be braced to meet code and design requirements and to alleviate shrinkage, raking, settling, and movement.
- ◆ Walls must be plumb and flat within 1/4 in. per 10 lineal feet. The EZ-WALL system follows the contour of the wall. If the wall is not straight, notify the owner prior to starting. Walls can be shimmed with felt or foam to obtain desired results.
- ◆ Sheathing must be approved type for installation and installed per manufacturer's recommendations and specifications.
- ◆ Water infiltration barrier must be in place with any openings or tears repaired.



# EZ-Wall Installation Manual



## Engineered Thin Brick Panel System

- ♦ Starter angles, flashings, and trims must be in place as per detail drawings.  
(See <http://www.ambrico.com/architects/technical-info/> for additional details)

## Expansion and Control Joints

**Note:** In order to avoid cracks in masonry elements, it is necessary to minimize movement and/or accommodate movement between materials through a system of expansion joints. Expansion joints separate brick into segments to prevent cracking caused by temperature change, moisture expansion, elastic deformation, settlement or creep. Refer to Brick Industry Association (BIA) Technical Notes 18 – Volume Changes and 18A – Expansion of Brickwork at <http://www.gobrick.com>

- ♦ Control joints should be to regional specifications. Space and stop *the panel and thin brick veneer* at building control joints.
- ♦ Place expansion joints every 15-25 feet depending on design, openings, and BIA recommendations.
- ♦ Expansion joints in the panel and thin brick veneer should be 1/4 in. to 3/8 in. away from doors, windows and un-like materials to allow for movement.
- ♦ Allow a minimum 3/8 in. expansion joint in the panel and veneer from inside corners.
- ♦ Control joints should be 3/8 in. wide to accommodate movement of thin brick veneer and panel. Larger control joints may be needed to accommodate building movement. These should be specified by the designer or engineer.
- ♦ Horizontal control joints should be placed at every floor level on wood frame structures. This is to allow for the settling and shrinkage of wood structure. Through wall flashings should be installed at all horizontal control joints.
- ♦ All areas where thin brick veneer meets non-brick surfaces must be caulked with a high performance caulk or sealant.
- ♦ Leave the lowest joint, where the panel meets the starter angle, open for water drainage from the system.



**CAUTION:** Installers/designers must be aware that new structures may shrink or move greater than a thin brick veneer system will allow and plan for expansion joints to accommodate.



# EZ-Wall Installation Manual



*Engineered Thin Brick Panel System*

## INSTALLATION TIPS AND TRICKS

- ♦ Apply thin brick veneer out of several boxes at one time in order to blend the color ranges appropriately.
- ♦ Mastic and mortar can be installed down to 38° F and rising.
- ♦ The lowest common corner of the building is the starting point. Level the installation corner to corner.
- ♦ Choose the right fasteners for the job. Fasteners must extend into wood or masonry substrates by 1 in. and into metal substrates by 1/4 in. Use nails, screws, or masonry anchors #8 or larger.
- ♦ Use fasteners 1/4 in. from panel edges and every 8 in. vertically into 16 in. studs, or 6 in. vertically into 24 in. studs.
- ♦ Ensure that corner pieces and flats match in color prior to installation.



# EZ-Wall Installation Manual

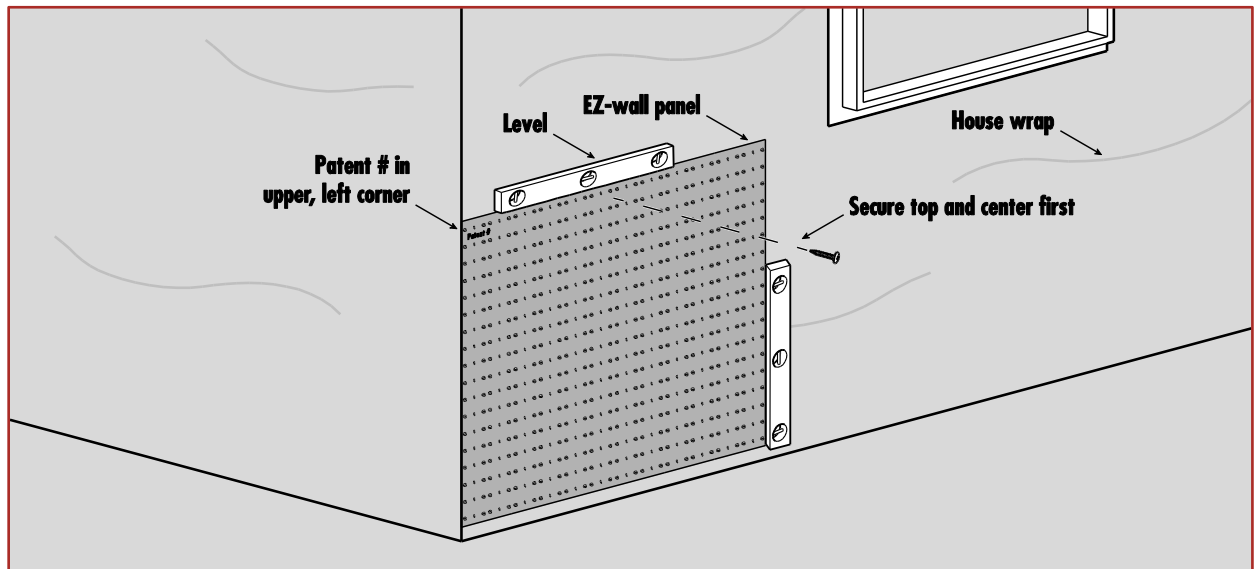
*Engineered Thin Brick Panel System*

## INSTALL EZ-WALL PANELS AND FASTENERS

**Note:** Dirt or film residue can interfere with adhesion of mastic or mortar. If panels become dirty after installation, wipe with dry cloth before attaching thin brick veneer.

1. Install the first panel at the lowest point of the wall. The Patent # should be in the upper left-hand corner and punched openings should be above the tab. Ensure that it is level and flat. Secure the center of the top of the panel first, moving down the middle of the panel. Then secure the panels moving outward to the edges, flattening the panel as you proceed. Adjust panels, if possible, so full course fits under or over windows, doors, or openings (cut as little as possible).

**Note:** Fasteners must be a non-corrosive type with a flat or wafer head design. Do not use drywall screw for panel installation.



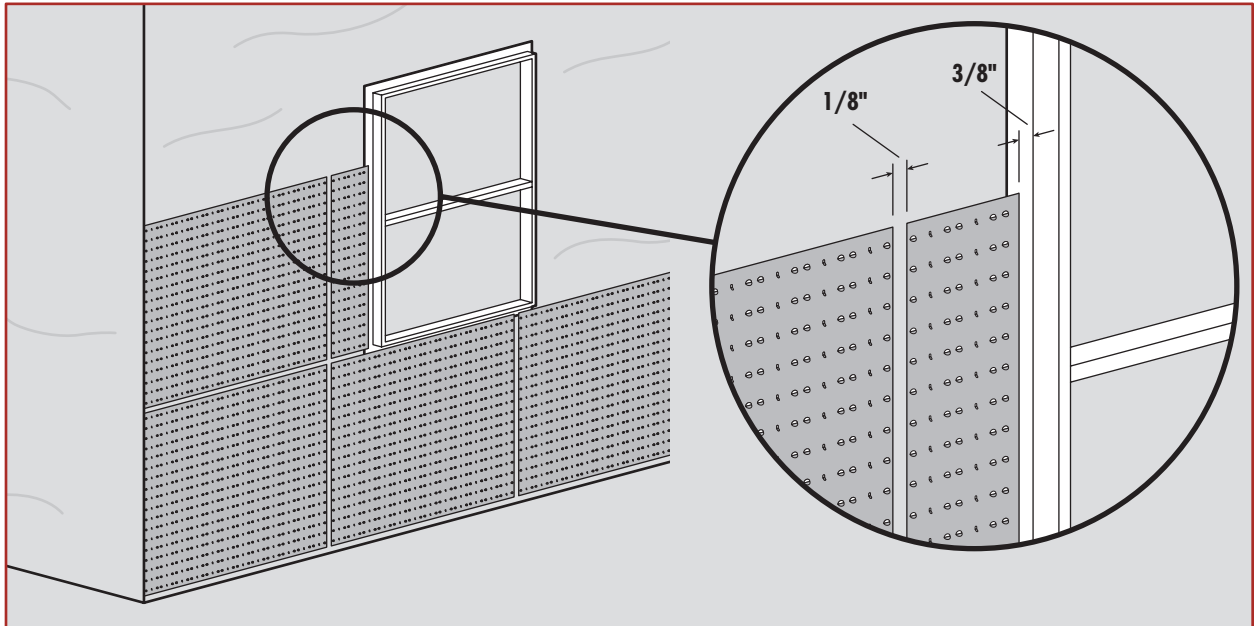


# EZ-Wall Installation Manual

## *Engineered Thin Brick Panel System*

2. Continue installing panels, leaving a  $\frac{1}{8}$  in. gap between panel sides and  $\frac{3}{8}$  in. gap from door and window trims. Install panels to cover the entire working area. Secure the top and center of panels first, and work outward keeping the panel level and flat.

Panels may be cut with tin snips or power shears. Shorten panels as required at the bottom or for openings or corners.



# EZ-Wall Installation Manual

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## HOW TO INSTALL THIN BRICK VENEER

### Mastic

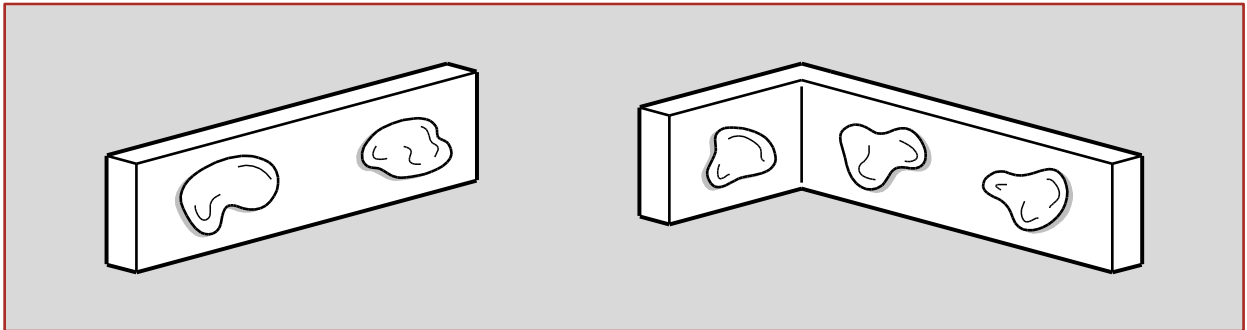
**Note:** The information in this section should be read completely before installing the master row, which is detailed in the next step.

- ♦ Apply mastic in quarter-sized dabs to the back of the thin brick veneer on either end. One tube will cover approximately 16 sq/ft. of brick.

**Tip:** Line up thin brick veneers on a clean surface and apply mastic to multiple thin brick veneers before applying to wall. This will speed your installation time considerably.

- ♦ Apply mastic to corner thin brick veneers with two dabs on the long leg and one dab on the short leg.

**Note:** Too much mastic will tend to push thin brick veneers forward, away from the wall.



- ♦ Vent mastic by pulling thin brick veneer away from panel for a few seconds. Then push back into place. This allows solvent to escape faster and the mastic to become stickier.
- ♦ Cold-weather installation: Keep mastic warm for cold weather applications. When warmed, mastic can be applied to thin brick veneer or panel at 38°F, facilitating year-round installation.
- ♦ Hot-weather installation: Mastic may form a film in hot weather. Slide thin brick veneer onto panel to break surface film to achieve a good bond. In direct heat, mastic must be vented to release the solvent faster, giving it a tackier set.



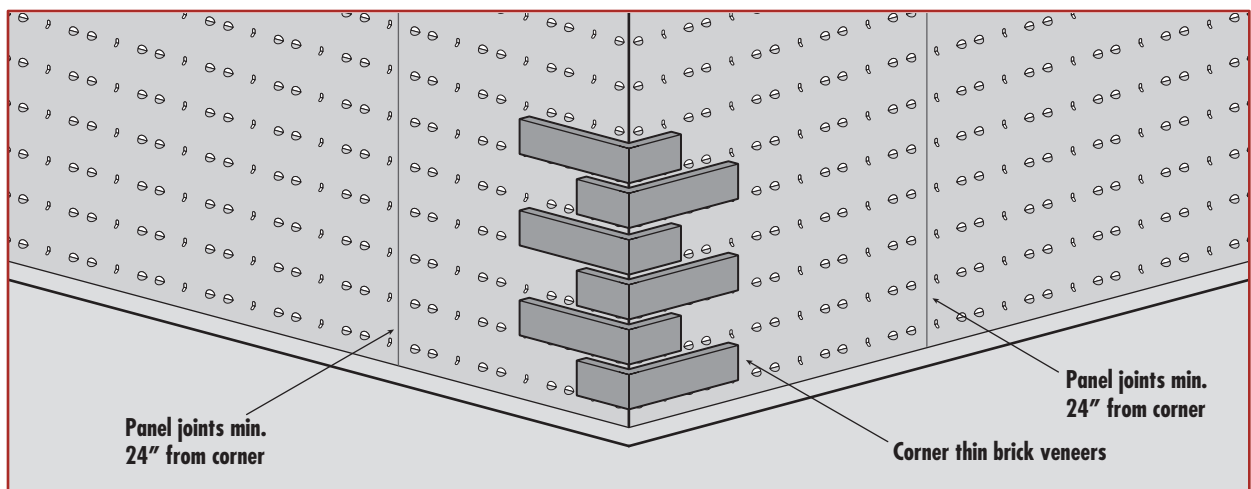
# EZ-Wall Installation Manual

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## INSTALL MASTER ROW

**Important!** Installing a level and well-spaced master row will ensure the success of your project. It is recommended to plan the master row before applying the thin brick veneer to the panels with mastic.

1. Start at an outside corner of the wall.
2. Apply corner thin brick veneers to the wall, alternating long and short legs, for running bond pattern.



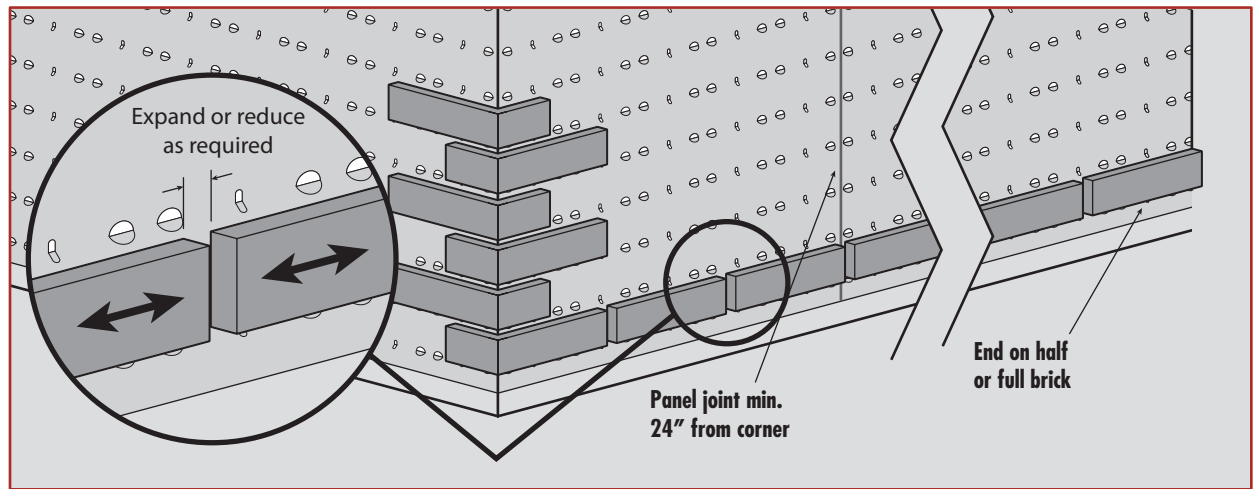
3. Install one row of thin brick veneer the length of the wall to the next outside or inside corner. Whenever possible, the master row should go under or over windows or door lines with a 3/8 in. joint opening between thin brick veneers.

**Important!** For correct spacing, the master row should start and end on either a half-brick or corner thin brick veneer. If necessary, expand each mortar joint by 1 mm to ensure there is a full or half-brick on each end of the wall.

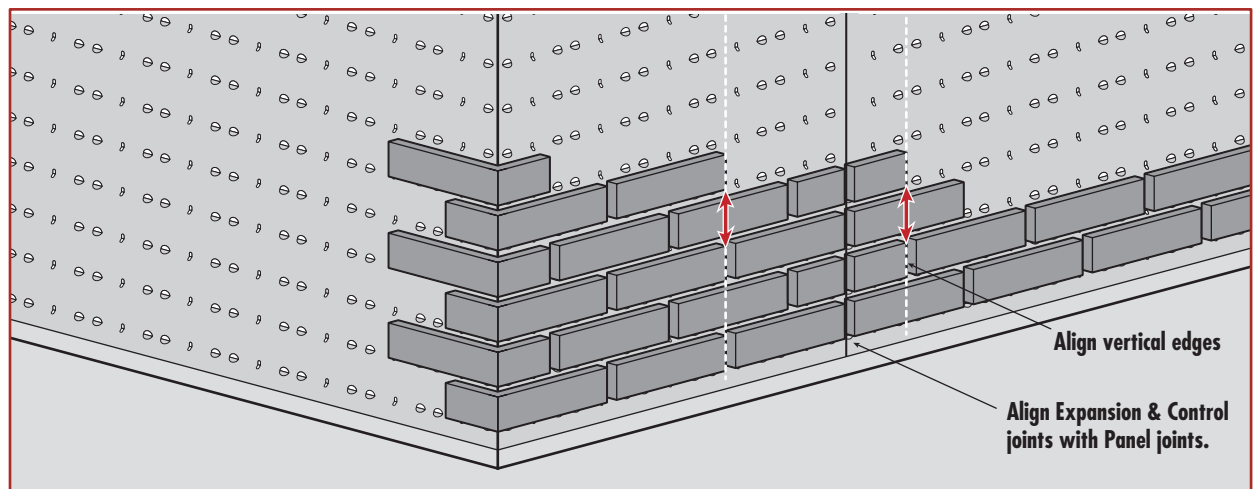


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## Engineered Thin Brick Panel System



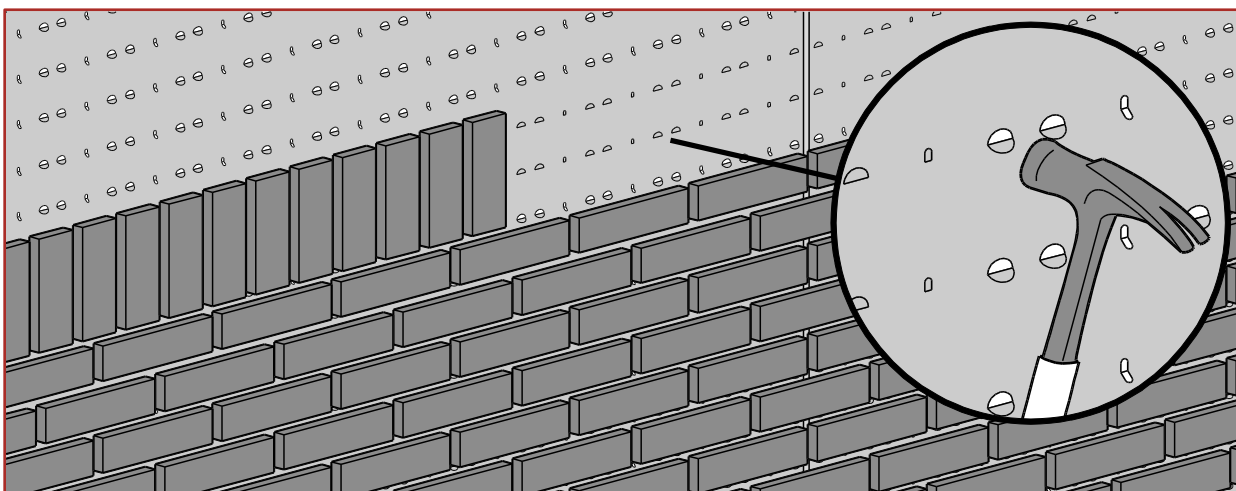
4. The position of the thin brick veneer on the panel tabs will be the same on every other course. Tabs can be bent up or down to adjust brick alignment, as required.



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## Engineered Thin Brick Panel System

**Note:** To install thin brick veneer vertically, creating a soldier course, flatten 2 rows of tabs into opening and rest thin brick veneers vertically on tabs.



Thin brick veneers should not be placed closer than 3/8 in. from door and window trims.

## CUTTING THIN BRICK VENEER

- ♦ Cut the thin brick veneer or tile all the way through with masonry blade of circular or cut off saw

**Note:** Install factory edge toward window and door moldings. If edge is concealed by trim, place factory edge on outside of trim.

- ♦ Specialty window and door head openings should be finished as shown on <http://www.ambrico.com/architects/technical-info/>.



# EZ-Wall Installation Manual



*Engineered Thin Brick Panel System*

## MORTAR PREPARATION AND APPLICATION

### Ready-to-Use Grout Mix

- ♦ EZ Wall Mortar Mix #50 bag. Covers approximately 30 sq. /ft.

#### Mixing Instructions

1. The AMBRICO grout mix is a complete blend of sand, cements and a re-dispersable dry acrylic fortifier. Combine the contents of this bag with 3  $\frac{3}{4}$  quarts of potable water and mix thoroughly to a smooth consistency.

**Important:** Allow the mixed grout to slake (rest) for 10-15 minutes before using.

2. After the slake time, remix the grout adding additional water as required (approximately 1 cup) to achieve a smooth consistency. Total water used should be approximately 1 gallon per bag.
3. Insert the metal tip firmly in place in the grout bag.
4. Fill the bag 1/3 full with mixed grout.
5. Hold the top of the bag with both hands and gently shake up and down. The grout mix should pour out of the tip while shaking the bag and stop when you stop shaking the bag.
6. Temper the mix as required to achieve this flow point. You may choose to mix one bag of grout mix at a time in a 5 gallon plastic pail with a plaster whip.

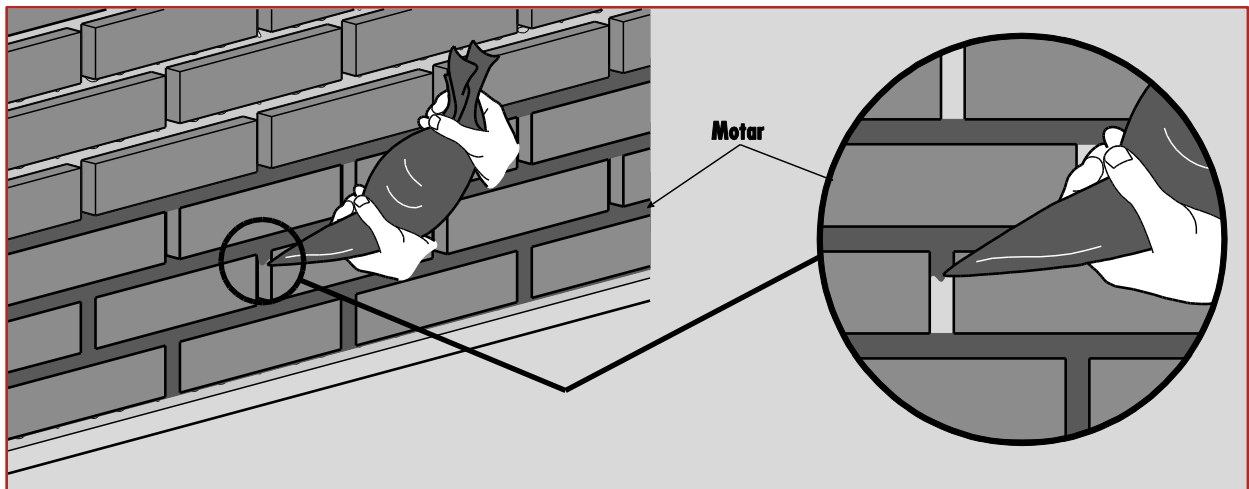
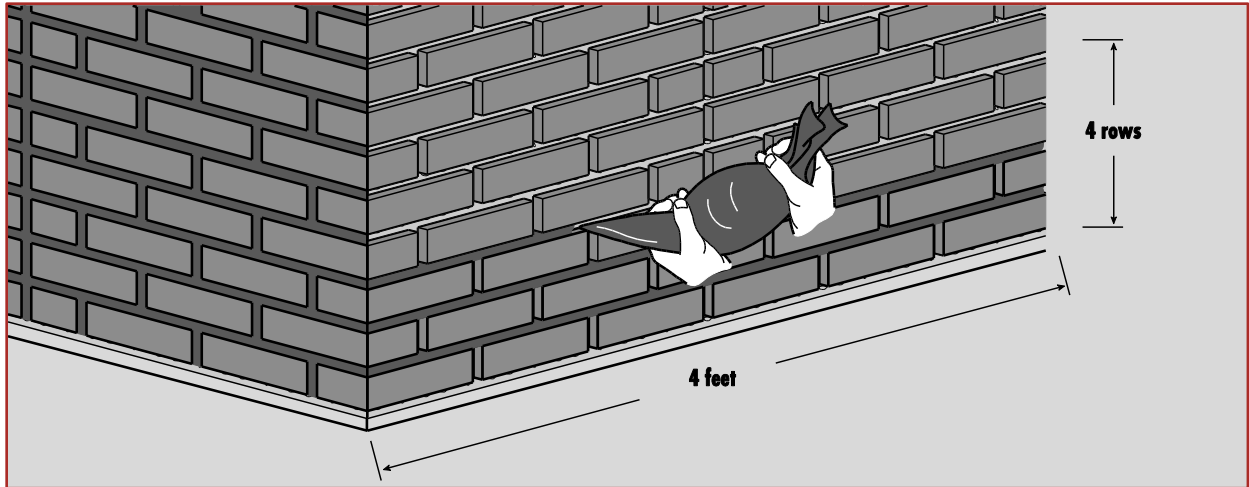
**Important:** Allow 10-15 minutes of slake time per batch.



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## *Engineered Thin Brick Panel System*

7. Fill 4 feet of horizontal joint courses first. After every 4th row, fill vertical joints; this will allow wall to dry evenly. Fill in all voids with damp mortar previously struck from wall.



8. Over-fill joint with mortar - as mortar dries; it shrinks due to water volume loss.
9. When mortar is thumb-print dry to the touch (like wet beach sand), tool the joint with slicker or a jointer tool to pack mortar into the joint.

**NOTE:** Struck mortar should be dry enough to fall away clean and tooled to a dull, gritty finish; not wet and shiny.

Upon initial set, brush excess mortar off of thin brick veneer face with a flat natural bristle brush on a 45 degree angle. Be careful not to drag mortar out of joint or smear wet mortar onto thin brick veneer surface.

Setting time will depend on drying conditions.



# EZ-Wall Installation Manual



## *Engineered Thin Brick Panel System*

**NOTE:** Thin hairline cracks can occur in the mortar joints for several reasons:

- ♦ striking too early
- ♦ excess water in the grout mix
- ♦ too rapid of grout curing in extremely hot dry weather
- ♦ movement of the substrate

These small cracks will not affect the performance of the product and can be minimized by striking at the appropriate time, using a proper mix, and, if the weather above 70° F, wetting mortar surface daily for several days following installation so as to extend the mortar tempering process.

Avoid walls which will be subjected to impact from within due to drywall or cabinet installation within one week of grouting.





# EZ-Wall Installation Manual



*Engineered Thin Brick Panel System*

## PROJECT CLEAN-UP

If it is necessary, it is best to clean thin brick veneer between 24-72 hours after installation. 48 hour is the optimal cleaning time.



**CAUTION:** Do not use an acid base cleaner; acid may burn the thin brick veneer.

## CARE & CLEANING

Your thin brick veneer should not require cleaning beyond the initial project clean up. However, if cleaning is necessary, use a commercial brick cleaner and follow the manufacturer's instructions.

**Important!** It is possible to damage your thin brick veneer by using an improper method of cleaning.



# EZ-Wall Installation Manual



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## WARRANTY

EZ-WALL warrants to the original Buyer that the goods will be free from defects in material and manufacturer's workmanship for a period up to twenty (20) years from the date of original delivery. In the event that the goods are not installed or maintained in accordance with EZ-WALL's specifications, are modified or are damaged by accident, unreasonable use, improper maintenance or neglect, this Warranty shall become void. For the purpose of this Warranty, a defective item is an item that is found by EZ-WALL to have been defective in materials or workmanship, if the defect materially impairs the value of the goods to the Buyer.

EZ-WALL shall have no obligation or liability under this Warranty for claims arising from any other party's (including Buyer's) negligence or misuse of the goods, the installation of the goods in any area subject to fallout or exposure to corrosive chemicals, ash, liquids, fumes or vapors, or in any area in which the environment changes from normal to corrosive atmosphere. This Warranty does not apply to any claim or damage arising from fire, flood, accidents, structural defects, building settlement or movements, acts of God or other causes beyond EZ-WALL's control.

Buyer must give notice of any alleged defect in the goods to EZ-WALL within 30 days after discovery of the defect by Buyer. If notice is not given within such period, any claim for breach of Warranty shall be conclusively deemed to have been waived and EZ-WALL shall not be liable under this Warranty. EZ-WALL or its agents shall be entitled to examine the goods. EZ-WALL shall have the option of requiring the return of the defective goods, transportation prepaid, to establish the claim. The acceptance by EZ-WALL of any goods returned shall not be deemed an admission that the goods are defective or in breach of any warranty, and, if EZ-WALL determines that the goods are not defective, the material shall be reshipped to the Buyer at Buyer's expense. No product will be returned to EZ-WALL without its written consent.

EZ-WALL MAKES NO WARRANTY AS TO ANY GOODS NOT MANUFACTURED BY EZ-WALL. THE TERMS AND DURATION OF WARRANTIES OF SUCH GOODS, IF ANY, WILL BE SPECIFIED BY THEIR MANUFACTURERS. THE WARRANTIES HEREIN ARE IN LIEU OF ALL WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE. IN PARTICULAR, EZ-WALL MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AS TO ANY GOODS SOLD UNDER THE AGREEMENT.

Any action for breach of the Warranty must be commenced within one year from the occurrence unless the period for action is extended by EZ-WALL in writing. No representative, agent or dealer of EZ-WALL has authority to modify, expand or extend this Warranty, to waive any of the limitations or exclusions, or to make any different or additional warranties with respect to the Product.



# EZ-Wall Installation Manual



*Engineered Thin Brick Panel System*

## INFORMATION ON MATERIAL ORDERING

Panels are quoted on a per panel base. Check on availability, delivery times, sizes, and thin brick veneer spacing requirements.

Mastic is priced per tube. Each case has 12 1-quart tubes.

EZ-Wall Straight Brick and Corner Brick are priced per unit, as are special shapes. Whenever possible, packaged boxes or bundles will be shipped. Your thin brick veneers may vary in shades and textures from veneer to veneer, and process to process. It is recommended that a full thin brick veneer range (5 pieces) be ordered prior to placing your order if there is doubt about the color range or texture.

Ambrico also sells a variety of tools including bags and tips, tile nippers, and jointers.

All materials are shipped Freight on Board (FOB) from Warren, Michigan 48089. Call for estimated shipping weight.

**Note:** All materials should be stored in a clean and dry environment. Mastic should be kept at above freezing temperatures.





# EZ-Wall Product Guide



*Engineered Thin Brick Panel System*

## EZ-WALL SYSTEM

A true mechanical support and spacing system using an architectural grade galvanized steel panel for thin brick, tile, marble and granite.

Each thin veneer unit is supported and spaced with custom relief ledge integrated into the steel. The panel can accommodate various sizes of thin veneer for interior or exterior use.

Application is accomplished by either using components or sub-assemblies at the job site or factory.

Finished wall system can be insulative, structural or fire rated.

### Product offers the:

- ♦ **Designer:** Choices of sizes, patterns, finishes and textures.
- ♦ **Contractor:** Various methods of installation to fit budget, site and project.
- ♦ **Owner:** A cost effective, aesthetically pleasing and maintenance free wall system.

## PRODUCT DESCRIPTION

### EZ-WALL PANELS

#### DESCRIPTION OF PRODUCT

27-GAUGE GALVANIZED, PAINT-COATED, STUCCO EMBOSSED PANELS, WITH 10mm (3/8") TABS FOR USE WITH THIN BRICK VENEERS, AND 7mm (1/4") TABS FOR TILE & STONE VENEERS.

#### DIMENSIONS:

- ♦ 1200 mm x 600 mm (48" x 24")
- ♦ 1200 mm x 1200 mm (48" x 48")

#### MISCELLANEOUS PRODUCT DESCRIPTION

MASTIC ADHESIVE 850 ml (29 oz.) TUBES ( 12 / BOX )



# EZ-Wall Product Guide

*Engineered Thin Brick Panel System*

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## **EZ-WALL Support System Offers:**

- ♦ Light weight finish – 32 kg / m<sup>2</sup> (6.5 lb per square foot).
- ♦ 13mm (1/2" high) profile that can be used with standard trims, moldings, window and door frames.
- ♦ Year round installation.
- ♦ Assembled components have about the same co-efficient of expansion, allowing components to cycle together.
- ♦ Custom manufactured panel heights.
- ♦ Utilizes less expensive labor.
- ♦ Faster and simpler installation methods.
- ♦ Minimal height restrictions.
- ♦ Interior or exterior applications.
- ♦ Internationally patented.
- ♦ Full depth mortar joint.

## **With standard construction products, procedures and materials, finished wall sections with EZ-WALL can offer:**

- ♦ Moisture control, using standard flashing or weep methods.
- ♦ Certified and listed fire rating.
- ♦ Exterior insulative thin veneer finish.
- ♦ High shear and wind resilient thin veneer walls.
- ♦ Structural curtain and spandrel panellized wall sections.
- ♦ Tilt-up construction methods with finished thin veneer.
- ♦ Diaphragm wall systems that help eliminate moisture.



# EZ-Wall Product Guide

*Engineered Thin Brick Panel System*

## COMPONENT FEATURES / BENEFITS

All of the base components the EZ-Wall system is comprised of are accepted materials and standards in the construction industry.

### FEATURES:

#### ARCHITECTURAL GRADE STEEL PANEL

##### BENEFITS:

- ◆ Tensile strength of steel will carry sidewall wind loading – particularly in diaphragm engineered systems.
- ◆ Is a steel ledge for the thin veneer's shear weight to rest on – a true mechanical (structural) support system.
- ◆ Double steel tab spaces the thin veneer horizontally and vertically on the panel for easy installation.
- ◆ Zinc-coated galvanized to G-90 for rust prevention for heavy-duty commercial applications.
- ◆ Steel sheet is fastened and applied to wall like any other standard siding – no special clips, hooks, trims, or strips needed.
- ◆ Allows you to fasten anywhere through the panel for even weight distribution or loading on the wall, using industry standard fasteners.
- ◆ High fastener pull-through strength for panel support and integrity.
- ◆ Hardened steel sheets help brace the wall, minimizing wall racking.
- ◆ Architectural grade steel has approximately the same co-efficient of thermal expansion as thin veneer and mortar.

#### STUCCO EMBOSSED STEEL

##### BENEFITS:

- ◆ Provides a built-in weep system on both sides of the panel for true moisture control.
- ◆ More surface area for mortar and mastic to attach to.
- ◆ Not a flat surface – it acts like small suction cups, therefore mastic and mortar grab better.
- ◆ Makes for easier handling.



# EZ-Wall Product Guide



*Engineered Thin Brick Panel System*

## PAINTED FINISH

### **BENEFITS:**

- ♦ White color helps reflect and evenly distribute heat.
- ♦ Finish is a two-coat, thermo-set, siliconized polyester for better mastic and mortar adhesion.
- ♦ Provides barrier rust protection.

## HIGH SOLIDS MASTIC

### **BENEFITS:**

- ♦ Impervious to water.
- ♦ Not affected by freezing.
- ♦ Remains pliable after initial set.
- ♦ Base product has been marketed for over 25 years.
- ♦ Workable open time of 15 minutes.

## VENEERS

### **BENEFITS:**

- ♦ Customized finishes – numerous colors, textures and sizes (brick, tile, marble and granite).
- ♦ Tested to meet and pass severe weather requirements.
- ♦ Can be maintained and cleaned like standard brick, tile or stone construction.

## LATEX MODIFIED MORTAR

### **BENEFITS:**

- ♦ Has Portland cement base for high compressive strength.
- ♦ Water-based acrylic latex gives high shear properties to mortar.
- ♦ Allows mortar to remain flexible.
- ♦ Brings permeability to rating of mortar down to one.
- ♦ Water-based acrylic latex helps neutralize cement alkalinity and reduce mortar efflorescence.





# EZ-Wall Product Guide

*Engineered Thin Brick Panel System*

## SPECIFICATIONS FOR EZ-WALL SYSTEM

### SECTION 04245 | BRICK PANEL SYSTEMS

#### PART 1 – GENERAL

##### 1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 general requirements apply to this section.

##### 1.2 SUMMARY

This specification document is designed to provide Dealers, Architects, and specifiers with information concerning the EZ-WALL system, through the outline of materials, construction details and product dimensions.

This section contains details that are required during the specification process. Information can also be useful as a continuing reference to owner.

Related Work: (Select as Required)

Slab/Tilt-Up Construction:	Section 03470
Closures and Setting Accessories for Concrete:	Section 03490
Design Information Masonry:	Section 04001
Mortar and Masonry Grout:	Section 04100
Unit Masonry:	Section 04200
Concrete Unit Masonry:	Section 04220
Reinforced Unit Masonry:	Section 04230
Stone:	Section 04400
Granite:	Section 04465
Masonry Restoration and Cleaning:	Section 04500
Simulated Stone:	Section 05050
Structural Metal Framing:	Section 05100
Structural Framing Systems:	Section 05160
Cold-Formed Metal Framing:	Section 05400
Expansion Control:	Section 05800
Laminated and Processed Sheets:	Section 06118
Structural Plywood:	Section 06122
Fiberwood Sheets and Decking:	Section 06124
Composite Wood/Metal Framing:	Section 06150
Design Information Thermal and Moisture Protection:	Section 07001
Waterproofing and Damp Proofing:	Section 07100
Sheet Membrane Waterproofing:	Section 07110
Damp Proofing:	Section 07150
Water Repellent Materials:	Section 07180
Vapor Retarders:	Section 07190



# EZ-Wall Product Guide

## *Engineered Thin Brick Panel System*

Air Infiltration Barriers:	Section 01795
Insulation:	Section 07200
Fireproofing:	Section 07250
Firestopping:	Section 07270
Pre-Formed Flashing:	Section 07645
Flexible Flashing:	Section 07650
Joint Fillers and Gaskets:	Section 07910
Sealants, Caulking and Seals:	Section 07920
Non-Load Bearing Wall Framing:	Section 09110
Metal Furring and Accessories:	Section 09206
Gypsum Board:	Section 09250
Gypsum Fabricators:	Section 09290
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Ceramic Tile:	Section 09310
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Pre-Engineered Structures:	Section 13120
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Pre-Fabricated Residential Structures:	Section 13144

### **1.3 SCOPE OF WORK**

Include all labor, materials and appliances, and perform all operations in connection with the installation of the EZ-WALL system and all related work, in strict accordance with drawings, and as specified herein.

Dimensions are nominal and specifications are based on the latest product information available at time of publication. EZ-WALL reserves the right to make changes in its product at any time without notice.

Products to be considered equal to those specified must be approved in writing by the architect, engineer, or specifier ten (10) days prior to the project bid date.

### **1.4 SUBMITTALS**

Samples provided in small-scale form for initial selection purposes showing range of colors, textures, and patterns are available for each type of thin veneer.

Shop drawings detailing dimensioned plans and elevations that include large scale details of connections, joint conditions and other related components.

Test Reports: System Flammability, Wind Load, Impact Load, Rain Penetration, Freeze/Thaw and Component Physical Property Tests are available from EZ-WALL, INC.



# EZ-Wall Product Guide



## *Engineered Thin Brick Panel System*

### 1.5 QUALITY ASSURANCE

Appoint at least one supervisory journeyman who shall be present at all times during execution of work, who shall be thoroughly familiar with design requirement, type of materials being installed, reference standards and other requirements, and who shall direct all work performed at jobsite.

Applicator Contractor shall be EZ-WALL approved and/or have at least three (3) years experience in the installation of panel systems.

Comply with all applicable codes, regulations, and standards. Where provision of applicable codes, regulations, and standards conflict with requirements of this section, the more demanding shall govern.

EZ-WALL component parts meet National Building Code requirements including: BOCA, SBCC, ICBO, CABO, HUD-FHA, VA AND MEA.

### 1.6 PERFORMANCE CHARACTERISTICS

Assembled wall system shall meet or exceed the following performance standards when tested in accordance with the following methods:

#### ASTM E-84-89a SURFACE BURNING TEST

- ♦ **Objective:** Determine the combustibility of the EZ-WALL assembled system.
- ♦ **Result:** Flame spread index = 0  
Smoke developed index = 0
- ♦ **Conclusion:** EZ-WALL offers a Class 1 non-combustible wall cladding.

#### ASTM E-119-88 FIRE RESISTANCE TEST

- ♦ **Objective:** Determine the fire resistance of a wall system with EZ-WALL for fire penetration that meets a 2-hour rating.
- ♦ **Result:** Temperature did not rise above prescribed levels and water hose test was met.
- ♦ **Conclusion:** Certified and listed fire endurance rating of 2 hours was given by a code approved testing laboratory for a wall system.

#### ASTM-E-72-80 WINDLOAD STRUCTURAL TESTING

- ♦ **Objective:** Determine wind load capacity of a composite EZ-WALL section based upon stud or girt spacing and deflection design of substrate.
- ♦ **Result:** Transverse Load Test with approved minimum sheathing of 7 mm (1/4") extruded foam board.



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### Summary of Test Results

Allowable panel load based on a deflection limit of:

$L/180 = 24/180 = 3.4 \text{ mm } (.1333 \text{ in.})$  Allowable load = 754 kg/m<sup>2</sup> (154.5 PSF)

Allowable panel load based on a deflection limit of:

$L/240 = 24/240 = 2.5 \text{ mm } (.1000 \text{ in.})$  Allowable load = 603 kg/m<sup>2</sup> (123.6 PSF)

Allowable panel load based on a deflection limit of:

$L/360 = 24/360 = 1.7 \text{ mm } (.067 \text{ in.})$  Allowable load = 416 kg/m<sup>2</sup> (85.3 PSF)

Unless clearance has been obtained from EZ-WALL, INC. per specific project, design deflection shall be based on L/240.

### WIND SPEEDS (BASED ON 1985 U.B.C.)

#### 208 km (130 MPH) wind

Wall Height	Height & ClearWall Exposure Element Factor	Safety Factor using L/240*
6 m =	215 kg/m <sup>2</sup> x 1.0 x 1.2 =	312 kg/m <sup>2</sup>
( 20 ft. =	44 PSF x 1.0 x 1.2 =	64 PSF 2.35 )
12 m =	215 kg/m <sup>2</sup> x 1.2 x 1.2 =	337 kg/m <sup>2</sup>
( 40 ft. =	44 PSF x 1.2 x 1.2 =	69 PSF 2.17 )
18 m =	215 kg/m <sup>2</sup> x 1.5 x 1.2 =	386 kg/m <sup>2</sup>
( 60 ft. =	44 PSF x 1.5 x 1.2 =	79 PSF 1.88 )
30 m =	215 kg/m <sup>2</sup> x 1.6 x 1.2 =	415 kg/m <sup>2</sup>
( 100 ft. =	44 PSF x 1.6 x 1.2 =	85 PSF 1.76 )
45 m =	215 kg/m <sup>2</sup> x 1.8 x 1.2 =	464 kg/m <sup>2</sup>
( 150 ft. =	44 PSF x 1.8 x 1.2 =	295 PSF 1.56 )
60 m =	215 kg/m <sup>2</sup> x 1.9 x 1.2 =	488 kg/m <sup>2</sup>
( 200 ft. =	44 PSF x 1.9 x 1.2 =	100 PSF 1.48 )



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## Engineered Thin Brick Panel System

### 192 km (120 MPH) wind

WallHeight	Height & ClearWall ExposureElement FactorFactor	Safety Factor using L/240*
6 m =	181 kg/m <sup>2</sup> x 1.0 x 1.2 =	259 kg/m <sup>2</sup>
( 20 ft. =	37 PSFx 1.0 x 1.2 =	53 PSF 2.35 )
12 m =	181 kg/m <sup>2</sup> x 1.2 x 1.2 =	283 kg/m <sup>2</sup>
( 40 ft. =	37 PSFx1.2 x 1.2 =	58 PSF 2.17 )
18 m =	181 kg/m <sup>2</sup> x 1.5 x 1.2 =	327 kg/m <sup>2</sup>
( 60 ft. =	37 PSFx 1.5 x 1.2 =	67 PSF 1.88 )
30 m =	181 kg/m <sup>2</sup> x 1.6 x 1.2 =	347 kg/m <sup>2</sup>
( 100 ft. =	37 PSFx 1.6 x 1.2 =	71 PSF 1.76 )
45 m =	181 kg/m <sup>2</sup> x 1.8 x 1.2 =	391 kg/m <sup>2</sup>
( 150 ft. =	37 PSFx 1.8 x 1.2 =	80 PSF 1.56 )
60 m =	181 kg/m <sup>2</sup> x 1.9 x 1.2 =	410 kg/m <sup>2</sup>
( 200 ft. =	37 PSFx 1.9 x 1.2 =	84 PSF 1.48 )

### 176 km (110 MPH) wind

WallHeight	Height & ClearWall ExposureElement FactorFactor	Safety Factor using L/240*
6 m =	151 kg/m <sup>2</sup> x 1.0 x 1.2 =	220 kg/m <sup>2</sup>
( 20 ft. =	31 PSFx 1.0 x 1.2 =	45 PSF 2.35 )
12 m =	151 kg/m <sup>2</sup> x 1.2 x 1.2 =	234 kg/m <sup>2</sup>
( 40 ft. =	31 PSFx1.2 x 1.2 =	48 PSF 2.17 )
18 m =	151 kg/m <sup>2</sup> x 1.5 x 1.2 =	273 kg/m <sup>2</sup>
( 60 ft. =	31 PSFx 1.5 x 1.2 =	56 PSF 1.88 )
30 m =	151 kg/m <sup>2</sup> x 1.6 x 1.2 =	293 kg/m <sup>2</sup>
( 100 ft. =	31 PSFx 1.6 x 1.2 =	60 PSF 1.76 )
45 m =	151 kg/m <sup>2</sup> x 1.8 x 1.2 =	327 kg/m <sup>2</sup>
( 150 ft. =	31 PSFx 1.8 x 1.2 =	67 PSF 1.56 )
60 m =	151 kg/m <sup>2</sup> x 1.9 x 1.2 =	347 kg/m <sup>2</sup>
( 200 ft. =	31 PSFx 1.9 x 1.2 =	71 PSF 1.48 )

\*Conservative in that panels did not fail using minimum approved 7mm (1/4") foam sheathing. (test equipment maximum capacity was reached).

- ◆ **Conclusion:** EZ-WALL systems offers minimal restrictions with minimum thickness sheathing, While higher wind resistive sheathing materials will offer maximum height usage.



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## *Engineered Thin Brick Panel System*

### **ASTM-E-695-85 IMPACT LOADING**

- ◆ **Objective:** Determine if wall system with EZ-WALL can withstand maximum measured impacts between studs using an impact of a 27 kg (60 lb.) bag.
- ◆ **Result:** No visible cracking of thin brick or mortar.
- ◆ **Conclusion:** EZ-WALL system provides a resistive finish for everyday environment.

### **ASTM E-331 WIND-DRIVEN RAIN AND WATER PENETRATION**

- ◆ **Objective:** Determine if EZ-WALL system offers a water resistant cladding per ICBO criteria, June, 1990.
- ◆ **Result:** No moisture was observed behind sheathing.
- ◆ **Conclusion:** EZ-WALL system provides a water resistant finish.

### **ICBO FREEZE/THAW STABILITY OF SYSTEM TEST. ACCEPTANCE CRITERIA FOR EXTERIOR FINISH SYSTEMS, JUNE, 1990.**

- ◆ **Objective:** Determine if EZ-WALL system can withstand thermal cycling.
- ◆ **Result:** No surface changes, deleterious surface effects, delamination of thin veneer or mortar shrinkage when viewed under 5X magnification.
- ◆ **Conclusion:** EZ-WALL system can be used in severe thermal cycling weather conditions.

### **ASTM C-297-88 SHEAR BOND STRENGTH TEST OF MASTIC**

- ◆ **Objective:** Measure bond strength between thin brick and panel.
- ◆ **Result:** Average tensile strength over 100 kg/m<sup>2</sup> (150 PSI) was achieved.
- ◆ **Conclusion:** With application of specified amount of mastic, it will take over 360 kg (800 lbs) of force to pull thin brick away from panel.
- ◆ **Objective:** Measure flatwise tensile strength between the thin brick surface area and panel after seven days immersion in water.
- ◆ **Result:** Average flatwise tensile strength was 47 kg/m<sup>2</sup> (70 PSI).
- ◆ **Conclusion:** With application of specified amount of mastic, it took more than 450 kg (1,000 lbs) of force to break the bond of a modular size thin brick.
- ◆ **Objective:** Measure mastic shear strength of thin brick surface area to a steel panel after seven days immersion in water.
- ◆ **Result:** Average shear strength was 73 kg/m<sup>2</sup> (109 PSI) of thin brick surface area without being mortared.
- ◆ **Conclusion:** With application of specified amount of mastic it took over 815 kg (1,800 lbs) of force to pull the modular size thin brick from the panel.



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## Engineered Thin Brick Panel System

*System components shall meet or exceed the following performance standards when tested in accordance with the following methods:*

### ASTM D-1037-89 FASTENER PULL-THROUGH RESISTANCE TEST

- ◆ **Objective:** Determine the amount of force in lbs. needed to pull steel panel over head of #6 screw fastener.
- ◆ **Result:** Average pull over load was over 160 kg (350 lbs.) per fastener.
- ◆ **Conclusion:** Specified fastener spacing safely allows use of panel in winds up to 288 km (130 mph).

### ASTM C-1088-88 THIN VENEER BRICK TEST

- ◆ **Objective:** Test and measure physical properties of thin brick veneer (freeze/thaw, type, grade, size and tolerance).
- ◆ **Result:** Approved thin brick passes exterior grade requirements, meets size and tolerance ranges, passes 50 cycles of freezing and thawing, and classifies as either TBS, TBX, TBA (standard, select or architectural).
- ◆ **Conclusion:** Thin veneer can be used and specified in almost any application.

### ANSI A 137.1 -1988 AMERICAN NATIONAL STANDARD SPECIFICATION FOR CERAMIC TILE

- ◆ **Objective:** Test and measure physical properties of ceramic tile.
- ◆ **Result:** Approved tile passes requirements for quarry or paver tile, glazed or unglazed, vitreous or semi-vitreous for application.
- ◆ **Conclusion:** Tile can be used and specified in most EZ-WALL applications.

### ASTM C-270 MORTAR

- ◆ **Objective:** Test physical properties of mortar (shear bond adhesion, tensile, compressive, and flexible strength).
- ◆ **Result:** Mortar obtained shear adhesion over 35 kg/cm<sup>2</sup> (500 PSI), tensile strength over 21 kg/cm<sup>2</sup> (300 PSI), compression strength over 140 kg/cm<sup>2</sup> (4000 PSI), and flexible strength over 90 kg/cm<sup>2</sup> (1300 PSI).
- ◆ **Conclusion:** Mortar can be used and specified in all applications.

### ASTM C-557 MASTIC

- ◆ **Objective:** Test and measure physical properties of mastic (shear, tensile, bridging, aging, freeze/thaw).
- ◆ **Result:** Mastic retains minimum shear and tensile values after 500-hour aging, freeze/thaw cycling with a 10mm (3/8") bridge gap between materials.
- ◆ **Conclusion:** Mastic can be used and specified for application.



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### AFG-01 MASTIC

- ◆ **Objective:** Test mastic for strength, freeze/thaw, moisture and oxidation resistance.
- ◆ **Result:** Strength under and over freezing and wet was higher than 14 kg/cm<sup>2</sup> (200 PSI). Mastic durability to moisture and oxidation or aging passed test 100 % with strength value higher than 18 kg/cm<sup>2</sup> (225 PSI).
- ◆ **Conclusion:** Mastic is not affected by moisture, freeze/thaw cycling or oxidation even with a 35 mm (1/16") thick glue line.

### ASTM C-446 PANEL (STRUCTURAL, PHYSICAL QUALITIES) (CHEMICAL, MECHANICAL STRESS TEST, COATING BEND TEST)

- ◆ **Objective:** Test and measure structural qualities of panel.
- ◆ **Result:** Panel passes chemical, stress, coating bend, and mechanical requirements with a yield higher than 2320 kg/cm<sup>2</sup> (33,000 PSI) and tensile strength over 3160 kg/cm<sup>2</sup> (45,000 PSI).
- ◆ **Conclusion:** Panel is produced from structural quality steel.

### ASTM A-525 PANEL (REQUIREMENTS FOR HOT-DIP, ZINC-COATED STEEL SHEET)

- ◆ **Objective:** Test and measure zinc coating requirements.
- ◆ **Result:** Panel passes testing and coating requirements for a minimum spangle G-90 classification.
- ◆ **Conclusion:** Panel's corrosion resistant classification is suitable for commercial application.

### ASTM B-117-90 SALT SPRAY (FOG) TESTING (FOR CORROSION)

- ◆ **Objective:** Evaluate the corrosion resistance of the painted EZ-WALL support panel with manufactured and hand sheared edges when exposed to outside conditions.
- ◆ **Results:** No visible red rust after 3,000 hours of continuous exposure.
- ◆ **Conclusion:** The commercial grade zinc coating does provide sacrificial protection on the cut edges and substantiates the specification and use of the panel in commercial and industrial applications

## 1.7 DELIVERY, STORAGE AND HANDLING

Deliver materials to project sites in their original factory wrappings and containers, clearly labeled with identification of manufacturer, brand name, fire hazard classification, and lot number. Store materials in original undamaged packages and containers, inside a well ventilated area protected from weather, moisture, soiling, extreme temperatures and humidity, laid flat and blocked off-ground to prevent sagging and warping.

Comply with the instructions and recommendations of manufacturer for special delivery, storage and handling requirements.





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### **1.8 SEQUENCING AND SCHEDULING**

Sequence EZ-WALL system installation with other work to minimize the possibility of damage during the remainder of the construction period.

### **1.9 WARRANTY**

EZ-WALL warrants to the original Buyer that the goods will be free from defects in material and manufacturer's workmanship for a period up to twenty (20) years from the date of original delivery. In the event that the goods are not installed or maintained in accordance with EZ-WALL's specifications, are modified or are damaged by accident, unreasonable use, improper maintenance or neglect, this Warranty shall become void. For the purpose of this Warranty, a defective item is an item that is found by EZ-WALL to have been defective in materials or workmanship, if the defect materially impairs the value of the goods to the Buyer.

EZ-WALL shall have no obligation or liability under this Warranty for claims arising from any other party's (including Buyer's) negligence or misuse of the goods, the installation of the goods in any area subject to fallout or exposure to corrosive chemicals, ash, liquids, fumes or vapors, or in any area in which the environment changes from normal to corrosive atmosphere. This Warranty does not apply to any claim or damage arising from fire, flood, accidents, structural defects, building settlement or movements, acts of God or other causes beyond EZ-WALL's control.

Buyer must give notice of any alleged defect in the goods to EZ-WALL within 30 days after discovery of the defect by Buyer. If notice is not given within such period, any claim for breach of Warranty shall be conclusively deemed to have been waived and EZ-WALL shall not be liable under this Warranty. EZ-WALL or its agents shall be entitled to examine the goods. EZ-WALL shall have the option of requiring the return of the defective goods, transportation prepaid, to establish the claim. The acceptance by EZ-WALL of any goods returned shall not be deemed an admission that the goods are defective or in breach of any warranty, and, if EZ-WALL determines that the goods are not defective, the material shall be reshipped to the Buyer at Buyer's expense. No product will be returned to EZ-WALL without its written consent.

EZ-WALL MAKES NO WARRANTY AS TO ANY GOODS NOT MANUFACTURED BY EZ-WALL. THE TERMS AND DURATION OF WARRANTIES OF SUCH GOODS, IF ANY, WILL BE SPECIFIED BY THEIR MANUFACTURERS. THE WARRANTIES HEREIN ARE IN LIEU OF ALL WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE. IN PARTICULAR, EZ-WALL MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AS TO ANY GOODS SOLD UNDER THE AGREEMENT.

Any action for breach of the Warranty must be commenced within one year from the occurrence unless the period for action is extended by EZ-WALL in writing. No representative, agent or dealer of EZ-WALL has authority to modify, expand or extend this Warranty, to waive any of the limitations or exclusions, or to make any different or additional warranties with respect to the Product.

If EZ-WALL determines that the goods are defective, EZ-WALL may, at its option either (1) replace a pro-rata portion of the defective goods, or (2) refund to Buyer a pro-rata portion of Buyer's cost for the defective goods. Buyer's pro-rata share for replacement or refund for any goods that are found



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to be defective by EZ-WALL during the first year after the original delivery shall be 100%. Buyer's pro rata share for each year thereafter shall be based on a fraction, the numerator of which is the number of years remaining under the Warranty at the time the original Buyer gives proper notice of a claim under the Warranty to EZ-WALL, and the denominator of which is the total number of years of the Warranty as set above. The repair, replacement or payment in the manner described above shall be the exclusive remedy of the Buyer for breach of this Warranty. EZ-WALL shall not be liable for labor or other costs of installation or removal of the defective product incurred by Buyer. Buyer shall have no right to "cover" by procuring substitute goods at the cost or expense of EZ-WALL, INC. CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, LOST PROFITS, OR OTHER ECONOMIC INJURY DUE TO ANY DEFECT IN THE GOODS OR ANY BREACH BY EZ-WALL. EZ-WALL SHALL NOT BE LIABLE TO THE BUYER IN TORT FOR ANY NEGLIGENT DESIGN OR MANUFACTURE OF THE GOODS, OR FOR THE OMISSION OF ANY WARNING THEREFROM. The foregoing shall not limit Buyer's recourse against any other manufacturer of goods sold under this Agreement, for any warranty extended by other manufacturer of goods sold under this agreement, or for any warranty extended by such manufacturer. The warranty of any such manufacturer will not be deemed to be the warranty of EZ-WALL.

## **PART II – PRODUCTS**

### **2.1 MANUFACTURER**

Materials and accessories specified herein are based on an EZ-WALL system. All parts of work shall be of the materials, design and dimensions shown on drawings and herein specified. Unless otherwise directed, methods of fabrication, assembly and installation shall be in accordance with EZ-WALL, INC's published standards and unpublished industry standards.

### **2.2 MATERIALS**

#### **PRODUCT DESCRIPTION**

Product is intended for interior or exterior nonstructural mechanical support of thin veneer on masonry, metal or frame construction for architectural aesthetics or engineered panel systems.

EZ-WALL system is manufactured by American Brick Company, (AMBRICO) Inc., 12901 Stephens Rd. Warren, MI 48089. EZ-WALL, Inc. system is a patented thin veneer support panel, consisting of architectural grade embossed galvanized steel with thin veneer as specified.

#### **PANEL (SELECT SIZE AS REQUIRED)**

EZ-WALL patented mechanical support and spacing panel is 18 gauge architectural grade steel, hot-dipped galvanized to G-90, with a painted, stucco embossed finish that has tabs punched into and protrude outwards from the plane that support and space the thin veneer. Panels are available in 1200mm x 600mm (48" x 24"), 1200mm x 1200mm (48" x 48") and custom sizes.



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### THIN VENEER (SELECT TYPE AS REQUIRED):

EZ-WALL approved thin brick / tile veneer shall be approximately 13-mm (1/2") thickness s.w. (severe weather) grade kiln-fired clay brick in various colors, sizes and finish, and shall meet ASTM C-1088-88, grade exterior, Type TBS, TBX, or TBA.

Thin Brick sizes as follows (Select as Required):

- ♦ **Modular - 57mm x 194mm x 13mm (2 1/4" x 7 5/8" x 1/2")**
- ♦ **European- 65mm x 194mm x 13mm**
- ♦ **Economy- 92mm x 194mm x 13mm (3 5/8" x 7 5/8" x 1/2")**
- ♦ **Norman- 57mm x 300mm x 13mm (2 1/4" x 11 5/8" x 1/2")**
- ♦ **Utility- 92mm x 300mm x 13mm (3 5/8" x 11 5/8" x 1/2")**
- ♦ **Tile / Stone- Various standard dimensions that meet project specifications.**

### ADHESIVE

EZ-WALL adhesive is specially formulated to ASTM C-557, ANSI A 136.1, and FHA-HUD #60 requirements, with a shear value between the thin veneer and the panel greater than 10.5 kg/cm<sup>2</sup> (150 PSI), per ASTM E-297-88. CAUTION: EZ-WALL mastic should not be used on stone. Contact distributor or manufacturer for adhesive use.

### GROUTING MATERIAL

EZ-WALL latex modified mortar meeting Type S and ANSI Specs A118.4 requirements with Portland Cement base, has shear properties on the panel of 18 kg/cm<sup>2</sup> (250 PSI) or greater.



**CAUTION:** Do not use mortar mix with stone veneer. (for tile veneers use industry accepted grout)

### FASTENERS (SELECT AS REQUIRED)

Fasteners shall be either corrosive resistant twist shank masonry anchors, #8 or larger self drilling or self-tapping corrosive resistant screws, galvanized nails or staples, depending on substrate.

Panels shall be attached to the wall with minimum of one fastener per 900 cm<sup>2</sup> (1 square foot). Fasteners shall be attached a minimum of 25mm (1") into supporting wood frame or masonry, or 7mm (1/4") into steel studs or girts.

Fastener shall be specified by a fastener manufacturer with regards to weather conditions, substrate, shear, fatigue, installation methods, and safety.



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### SHEATHING (SELECT AS REQUIRED)

Sheathing is required over a stud wall to allow the panel to lay flat. Select the sheathing material that meets the design criteria, taking into account not only its insulative, structural or fire resistant abilities, but moisture, water vapor transmission or control features, and thermal cycling or properties of the sheathing material as well.

The following types of sheathing materials can be used with or adhered to EZ-WALL panels:

- ♦ **Gypsum Board** – Use either regular, fire-rated, moisture resistant, or combinations, 7mm (1/4") minimum thickness that complies with appropriate use and ASTM test (C36, C79, C630) or Federal specifications SS-L-30D type (II, III, IV, VI, VII), grade (R, X, R&W, X&W, W), class (1, 2, 3).
- ♦ **Cement Board** – Shall be light weight fiber-reinforced cement board, 7mm (1/4") minimum thickness, suitable to meet fire ratings in place of gypsum, if required, as manufactured by Plycem Corporation, and has a compressive strength higher than 70 kg/cm<sup>2</sup> (1,000 PSI), Tensile strength over 35 kg/cm<sup>2</sup> (500 PSI), and nail head pull through greater than 57 kg (125 lbs).
- ♦ **Insulation Board** – 7mm (1/4") minimum thickness.
  - ♦ Use either expanded polystyrene (EPS) – Type 1, air dried, with a flame and smoke rating per ASTM-84 that meets Class 1.
  - ♦ Extruded polystyrene – per ASTM C-578 with a flame and smoke rating per ASTM-84 that meets Class 1.
  - ♦ Polyisocyanurate that complies with Federal Specification HH-1-1972/1, Class 2.
  - ♦ Insulating boards manufactured with wood fibers shall meet the strength and Durability tests specified in ASTM C-208 and C-532.
- ♦ **Wood-based panels**, 7mm (1/4") minimum thickness, shall be APA rated and designed to meet performance and durability requirements for designated application.

#### Panels manufactured as:

- ♦ **Plywood**
- ♦ **Wafer Board**
- ♦ **Oriented-Strand Board**
- ♦ **Composite Panels**

Sheathing shall be applied per manufacturer's instructions, and shall meet EZ-WALL, INC. approval.



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### **WATER INFILTRATION BARRIER (SELECT AS REQUIRED)**

The following types of infiltration barriers are approved by EZ-WALL, INC. for use with the EZ-WALL system:

- ◆ Rufco-wrap, as manufactured by Ravem Industries, Inc.
- ◆ Tyvek, as manufactured by DuPont Company.
- ◆ Barricade, as manufactured by Simplex Products.
- ◆ Typar, as manufactured by Reemay, a member of Intertech Group. #15 perforated saturated felt paper, as manufactured by Tamco or equal. Felt Paper should be installed with a minimum 50 mm (2") lap.

Products specified shall comply with manufacturers' recommendations and performance requirements.

## **PART III – EXECUTION**

### **3.1 INSPECTION**

Installer must examine conditions under which the EZ-WALL system is to be installed and notify contractor in writing of any unsatisfactory conditions. Do not proceed with installing of EZ-WALL system until the unsatisfactory conditions have been corrected in manner acceptable to the installer.

Installer shall consult the other trades and contractors involved prior to start of placing the EZ-WALL system, to determine any areas of potential interference. Do not start the installation until interferences have been resolved to the satisfaction of the installer.

Coordinate layout with other work to determine that work schedule is satisfactory with other contractors.

### **3.2 PREPARATION**

Wherever possible, take field measurements prior to the preparation of shop drawings and fabrication to insure proper fitting of product.

Verify that materials are those specified before installing.

Insure walls and corners are braced to area specifications.

Maximum wall frame spacing for stud walls = 60 cm (24") O.C. Girts = 75 cm (30") O.C.

Walls must be structurally sound and the substrate system designed with a wall deflection not greater than  $L/240$ . Substrate shall have no planer irregularities greater than 7mm in 3.05m (1/4" in 10').

Water infiltration barrier, if required, must be installed prior to placement of panel.



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Trim or flash in place per EZ-WALL details and/or BIA Technical Note 7A on Flashing of Brick Walls.

### **3.3 INSTALLATION**

#### **PANELS**

Exterior walls shall be constructed of structurally sound masonry, wood, or steel studs, with an approved building sheathing and a water infiltration barrier placed over it, if needed. This should be done prior to the installation of the EZ-WALL panel.

Panels shall be mechanically secured to a structural wall with a manufacturer's approved fastener in accordance with the manufacturer's recommendation. Panels shall be attached with minimum of one fastener per 900 cm<sup>2</sup> (sq. ft.). All fastening devices shall be of corrosion resistant type.

Panels applied to an oblique wall shall be installed with the support tabs aligned and level to each other.

If possible, panel joints shall be staggered over sheathing joints.

Control joints in the EZ-WALL system (including pre-fabricated panels) are required to coincide with the building control joints where substrates change, within 600mm – 1200mm (2-4 ft.) of corners, per Technical Note 18A Revised, as recommended by the BIA or where significant structural, substrate or frame movement occurs.

Panels shall be clean, free of dirt, oil or any other surface contaminant.

#### **THIN VENEERS**

Thin veneers shall be either field applied, factory installed, or panellized into components or curtain walls (select are required).

Thin veneer shall be initially adhered to panel using specially formulated adhesive in "Quarter" sized dabs or vertical strips 10mm (3/8") wide.

Thin veneers shall be applied within 5 to 10 minutes after adhesive has been applied.

Thin veneers shall be placed in the bond pattern called for.

#### **MORTAR**

When all applied veneers are secured in place, fill joints and seams with an EZ-WALL approved latex-modified mortar or industry accepted grout for tile.

Mortar vertical joints immediately following each fourth horizontal joint.

Mortar only an area that can be tooled before mortar becomes too stiff. Mortar should have a dull finish and be moist, but not wet.



# EZ-Wall Product Guide



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## *Engineered Thin Brick Panel System*

### Weather requirements:

- ♦ In cold weather do not use frozen materials in mortar mix. Do not apply mortar to frozen surfaces containing frost. Do not apply mortar when ambient temperature is less than two degrees Celsius (35 degrees Fahrenheit) without sufficient protection and supplemental heat.
- ♦ In hot weather, protect mortar from uneven and excessive evaporation. Where conditions are hot, dry, and/or windy and evaporation is great, veneer shall be fogged with water to allow the mortar enough time to set. Moist curing is not recommended for latex modified mortar.

### **CAULKING**

All areas, where thin veneer meets non-veneer surfaces, must be caulked with the proper approved sealant for conditions.

Thoroughly and neatly caulk all joints between thin veneer and abutting material.

### **CLEANING**

Thin veneer shall be cleaned per appropriate method established by the Brick Institute of America for brick (see Technical Bulletin "#20 Revised", or the Association of Tile, Terrazzo & Marble Contractors and Affiliates bulletin entitled "Grouting and Cleaning Ceramic Floors With Latex Grout").

### **SPECIFIC DETAILS**

Specific details of installation can be found in EZ-WALL's Installation Guide.

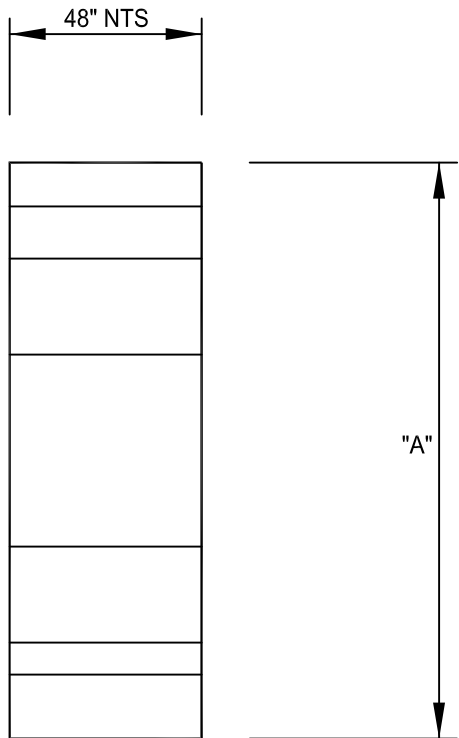
## **3.4 MAINTENANCE**

When applied according to manufacturer's specifications, EZ-WALL system installations should last indefinitely and be maintenance free. However, if for any reason the EZ-WALL system should become unattached from its surface, or damaged by severe impact, the affected areas should be cleaned of old mortar and adhesive and a new EZ-WALL system applied with its approved adhesive and mortar.





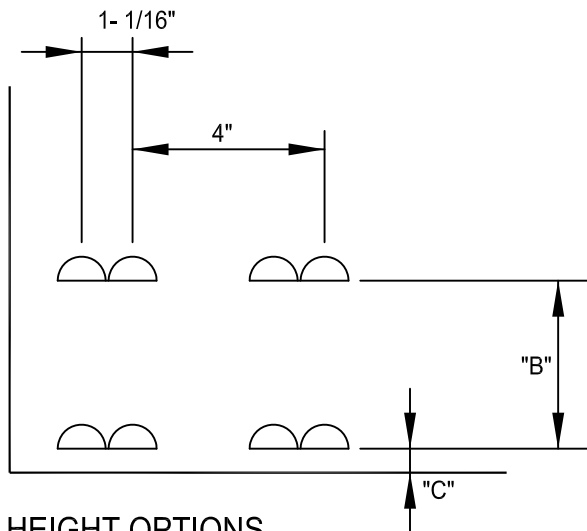




HEIGHT OPTIONS - NTS

PANEL DIMENSION	
"A"	"B"
16"	2- 5/8"
24"	4"
48"	6"
96"	8"
120"	12"
144"	
CUSTOM	

DIMENSION "C"	
BRICK	3/8"
STONE / TILE	3/16"



HEIGHT OPTIONS

TAB DEPTH	
BRICK	3/8"
STONE / TILE	1/4"

## EZ WALL PANEL- STANDARD SIZES

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

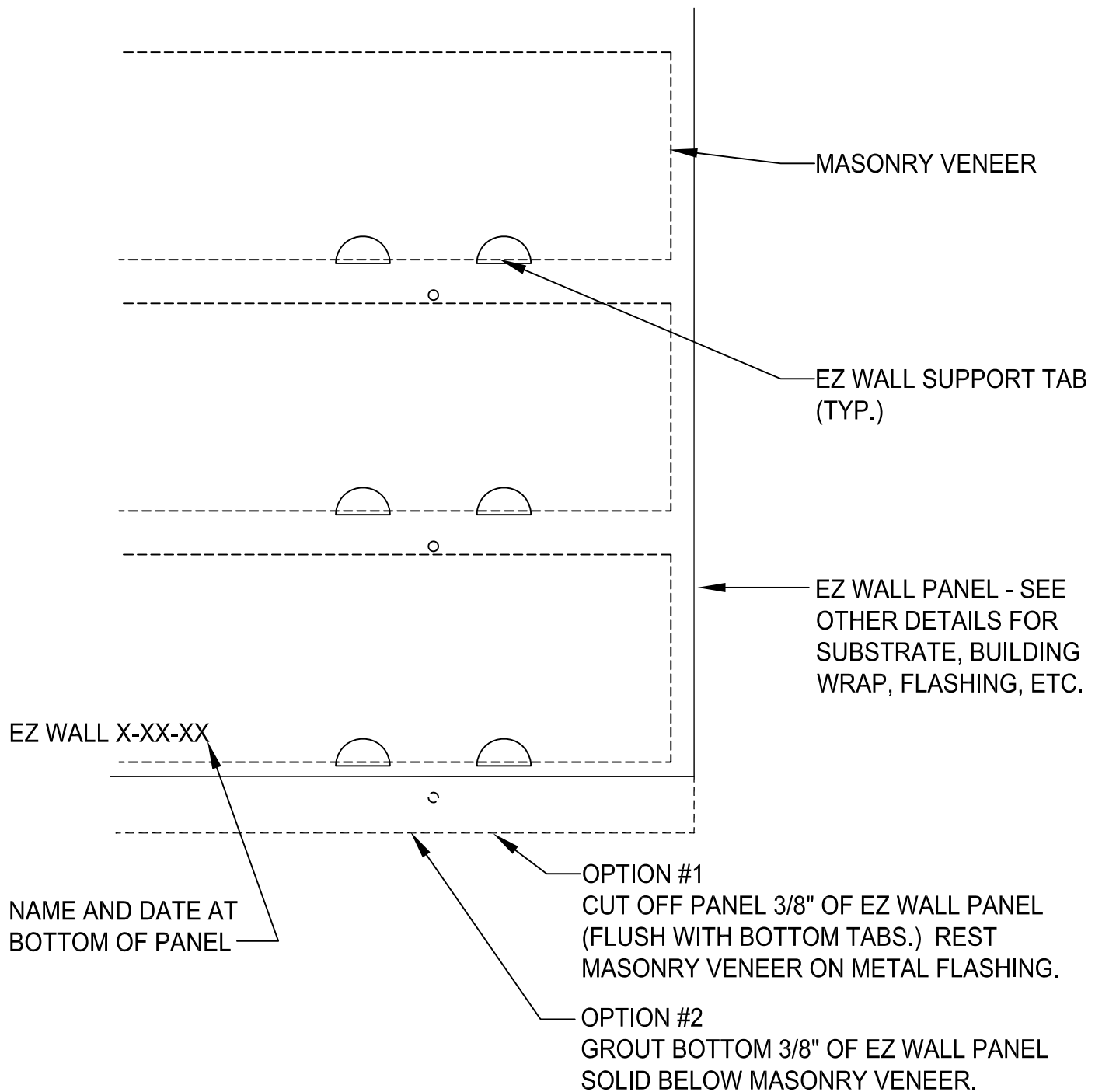
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 3" = 1'-0"



## TYPICAL STARTER PANEL ELEVATION DETAIL

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

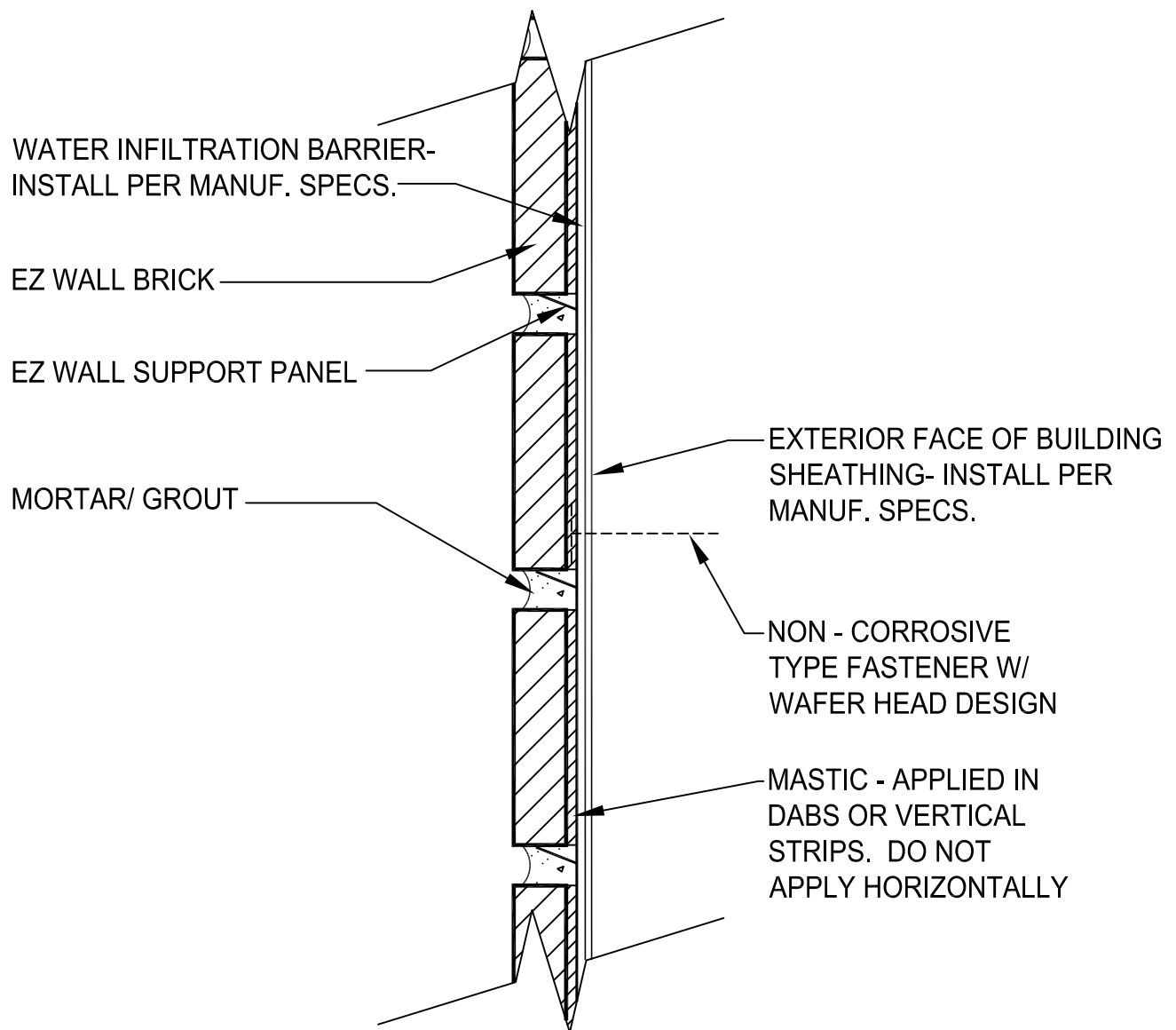
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## TYPICAL WALL W/ OUT FOAM

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

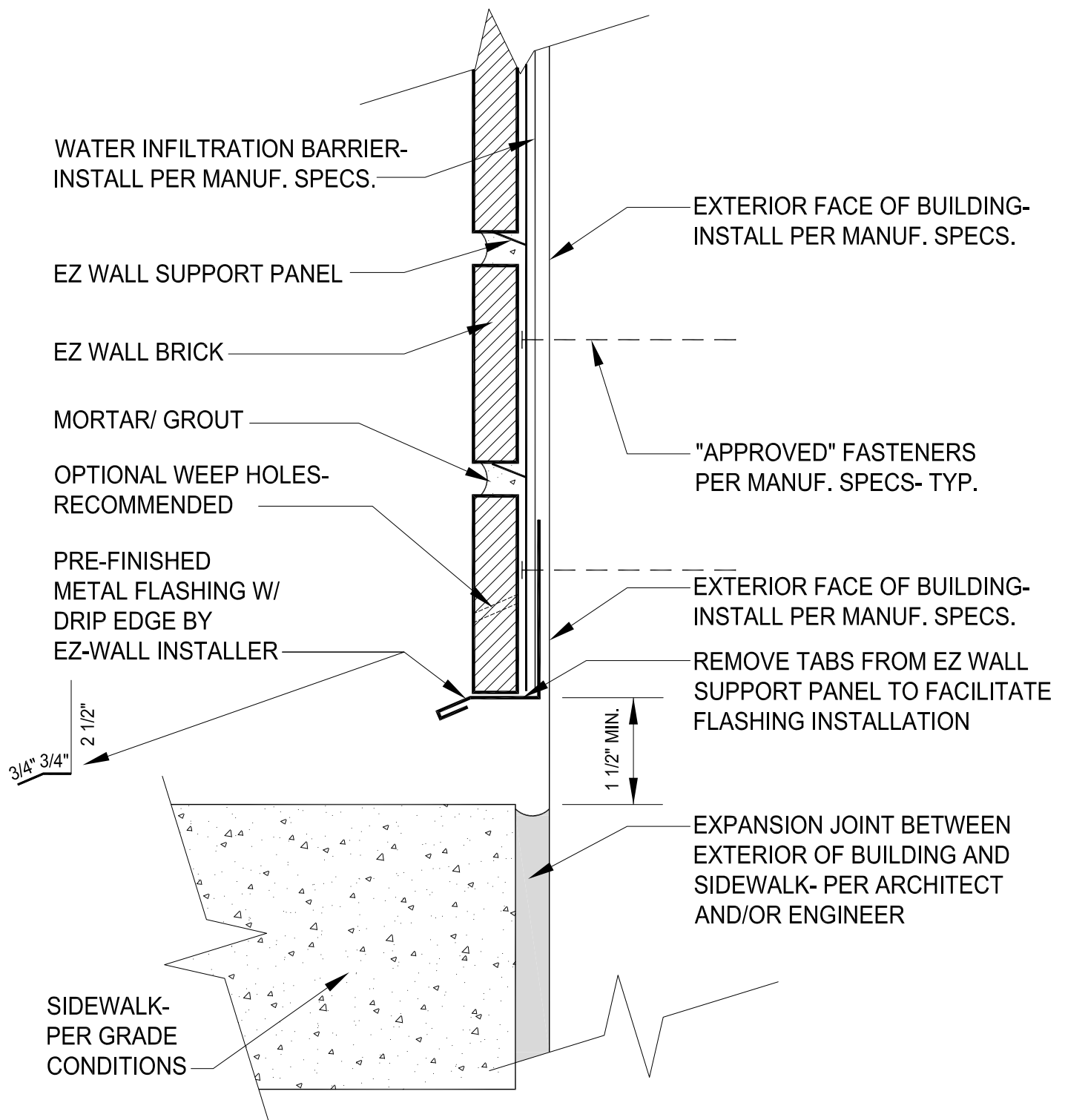
DATE:

SCALE: 6" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



## BASE DETAIL

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

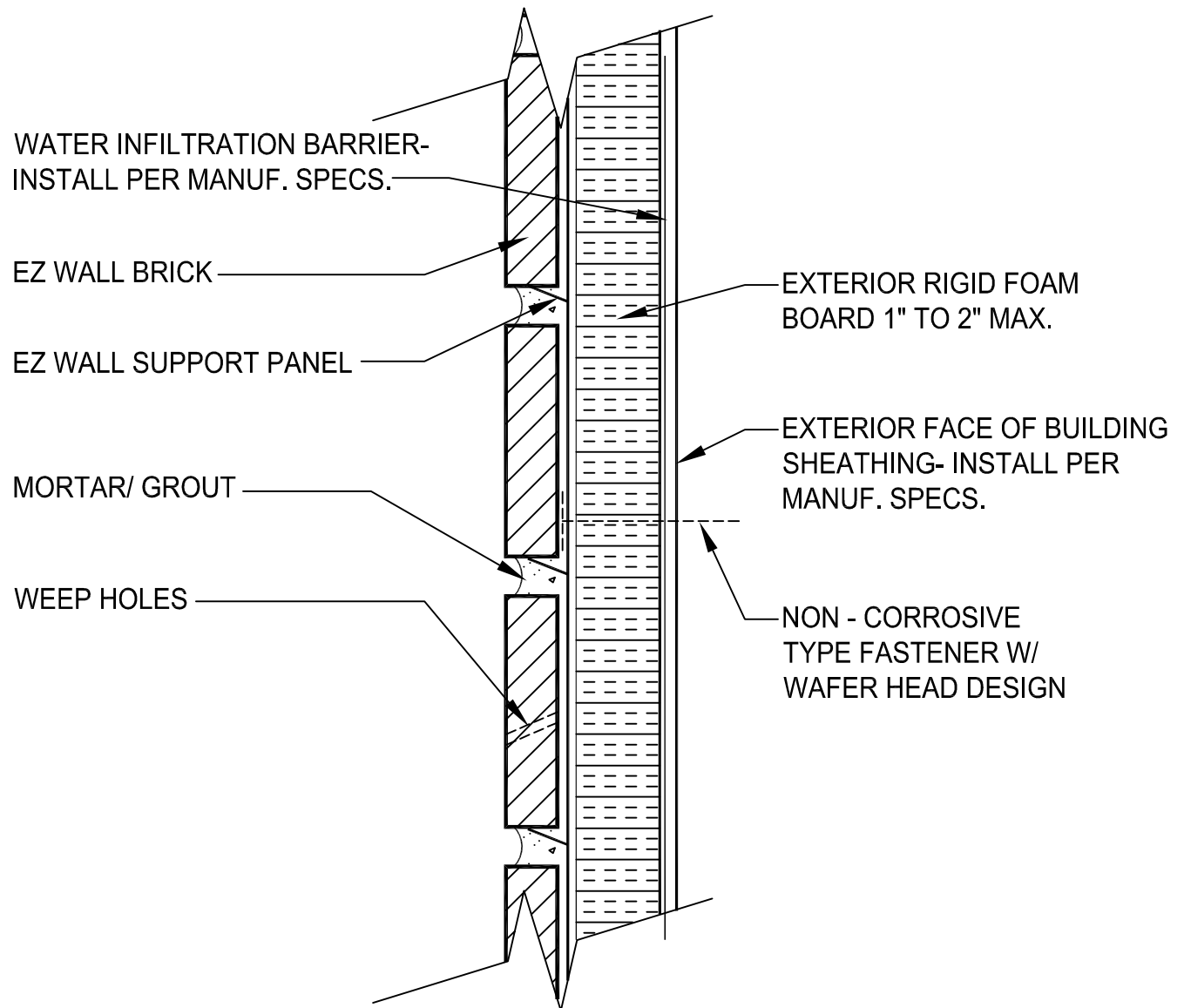
DATE:

SCALE: 6" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



## TYPICAL WALL W/ FOAM

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

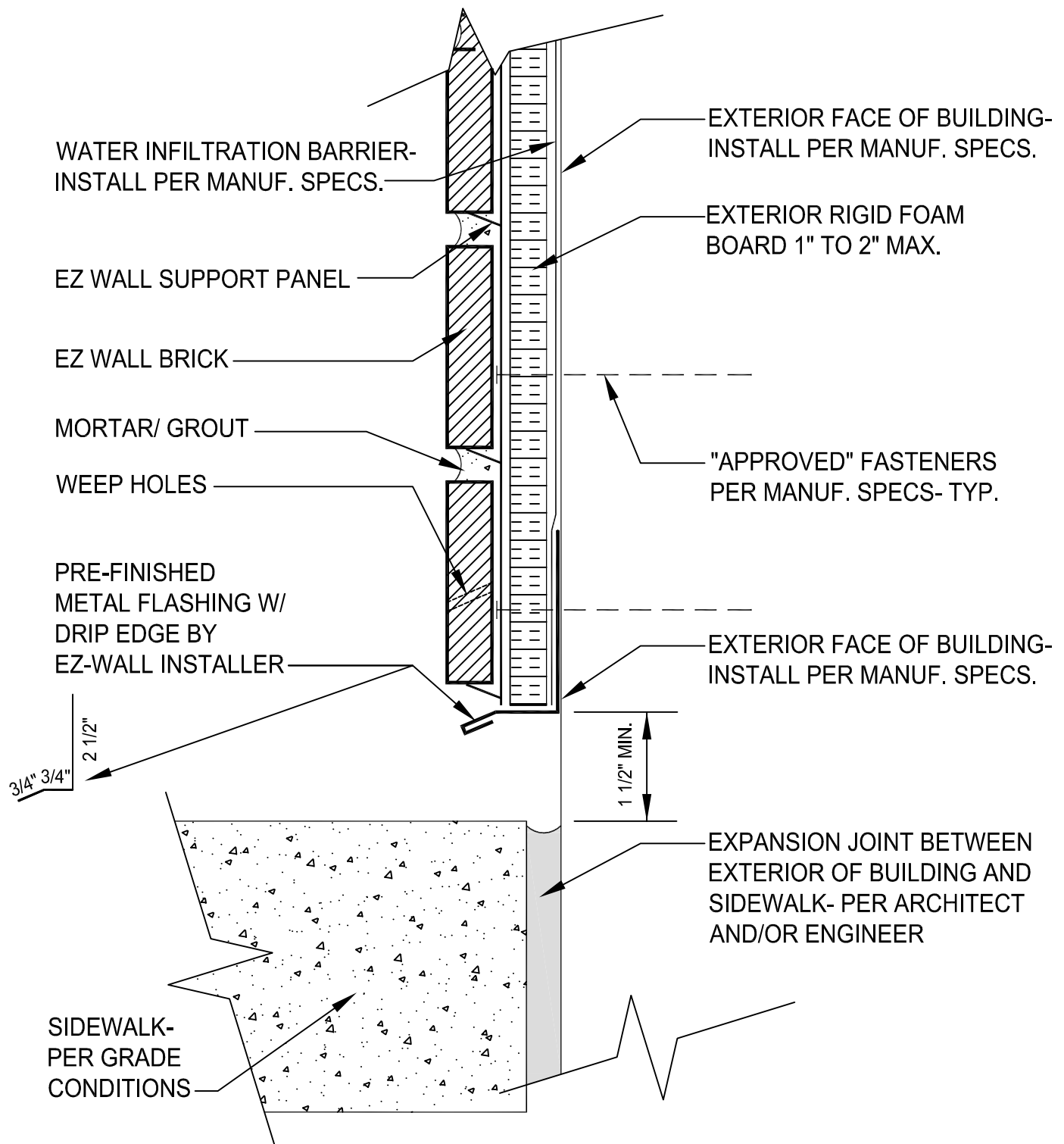
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## BASE DETAIL

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"

1/4" - 3/8" BETWEEN BRICK  
PANEL AND CHANNEL

"J" CHANNEL

SOFFIT

SEALANT- INSTALL PER  
MANUF. SPECS.

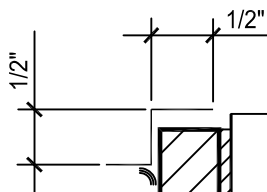
EZ WALL BRICK

EZ WALL SUPPORT PANEL

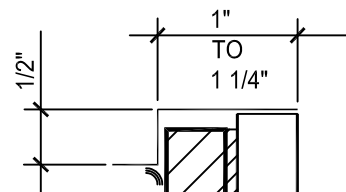
WATER INFILTRATION BARRIER-  
INSTALL PER MANUF. SPECS.

WALL FINISH  
MATERIAL

EXTERIOR FACE OF  
BUILDING SHEATHING-  
INSTALL PER MANUF.  
SPECS.



OPTION (A)



OPTION (B)  
PREFERRED

## TOP DETAIL J - CHANNEL

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

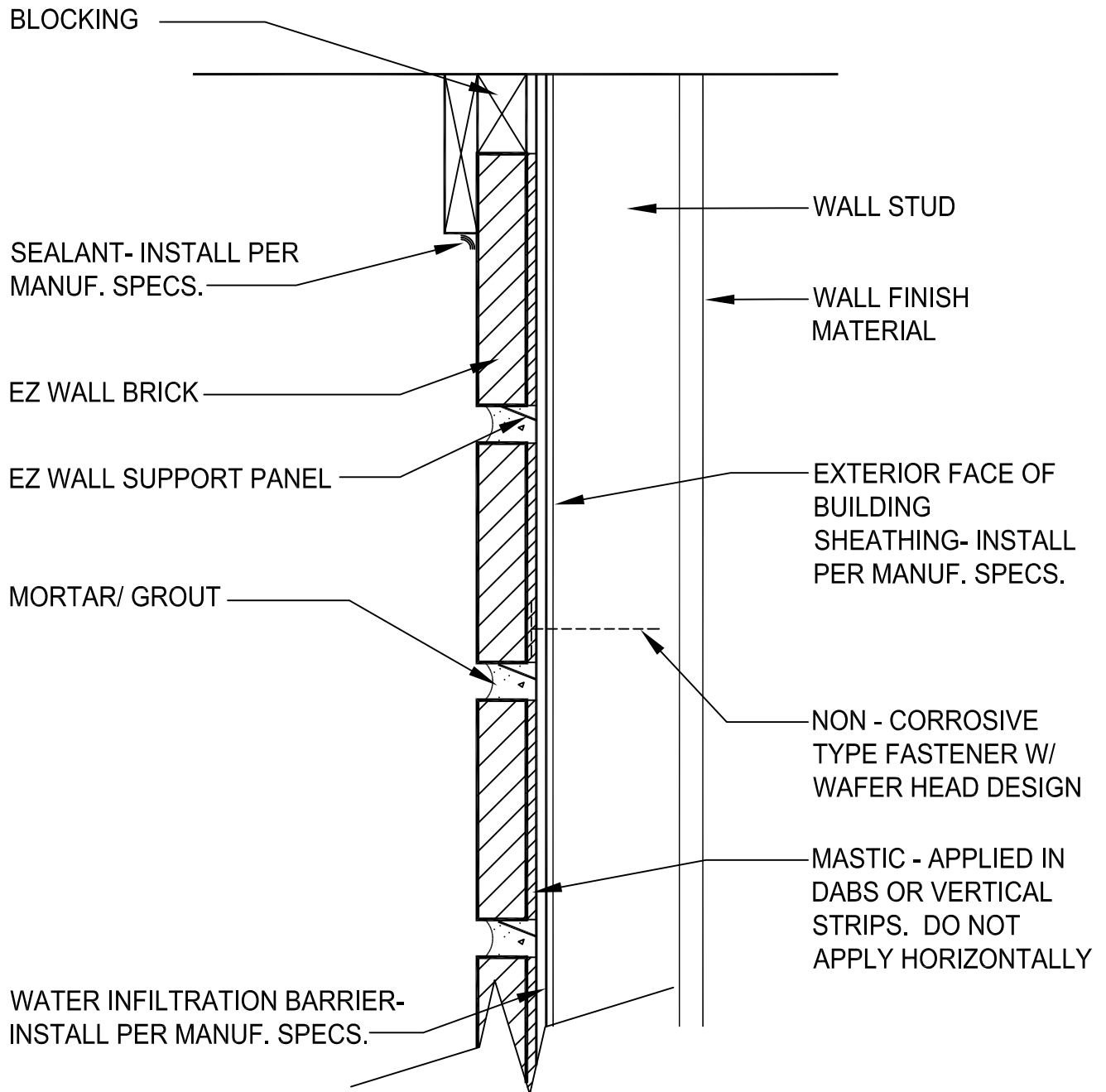
DRAWN BY:

DATE:

CHECKED BY:

SCALE: 6" = 1'-0"

JOB NUMBER:



## TOP FRIEZE BOARD

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

DATE:

SCALE: 6" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



EZ WALL SUPPORT PANEL

"APPROVED" FASTENERS  
PER MANUF. SPECS- TYP.

SEPARATE EZ WALL SUPPORT PANEL  
AT EXPANSION/CONTROL JOINT

WATER INFILTRATION BARRIER-  
INSTALL PER MANUF. SPECS

EXTERIOR FACE OF BUILDING  
SHEATHING- INSTALL PER  
MANUF. SPECS.

EZ WALL BRICK

SEALANT- PER. MANUF. SPECS.

EXPANSION / CONTROL JOINT  
THICKNESS TO BE DETERMINED BY  
ARCHITECT AND/OR ENGINEER- TYP.

3/8"  
MIN

## VERTICAL / CONTROL JOINT SECTION

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

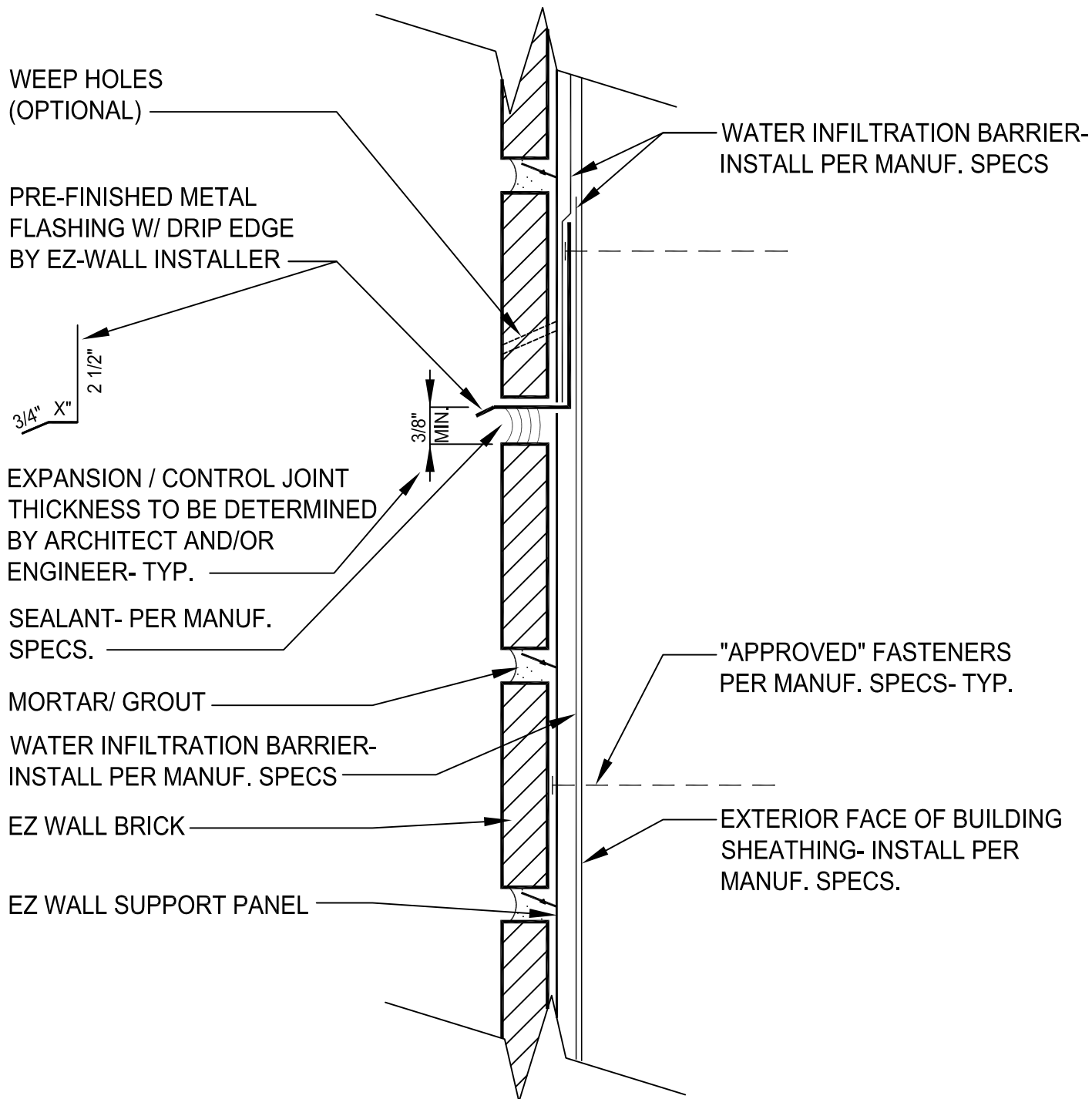
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## HORIZONTAL EXPANSION/CONTROL JOINT SECTION

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"

"APPROVED" FASTENERS  
PER MANUF. SPECS- TYP.

EZ WALL SUPPORT PANEL

EZ WALL BRICK

MORTAR/ GROUT

WATER INFILTRATION BARRIER-  
INSTALL PER MANUF. SPECS.

BUILDING SHEATHING-  
FIRE - RATED PER ARCHITECT /  
ENGINEER

WALL CAVITY - MATERIAL AND  
DEPTH VARIES PER PROJECT

EZ WALL SUPPORT PANEL

GYPSUM BOARD  
FIRE - RATED  
2 LAYERS  
5 / 8" ( TYPE "X" )

DEPTH VARIES

## FIRE - RATED WALL (2 - HOUR)

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free:866-663-6898  
Phone:586-838-1288  
Fax: 586-933-0080  
e-mail:info@ambrico.com

PROJECT NAME:

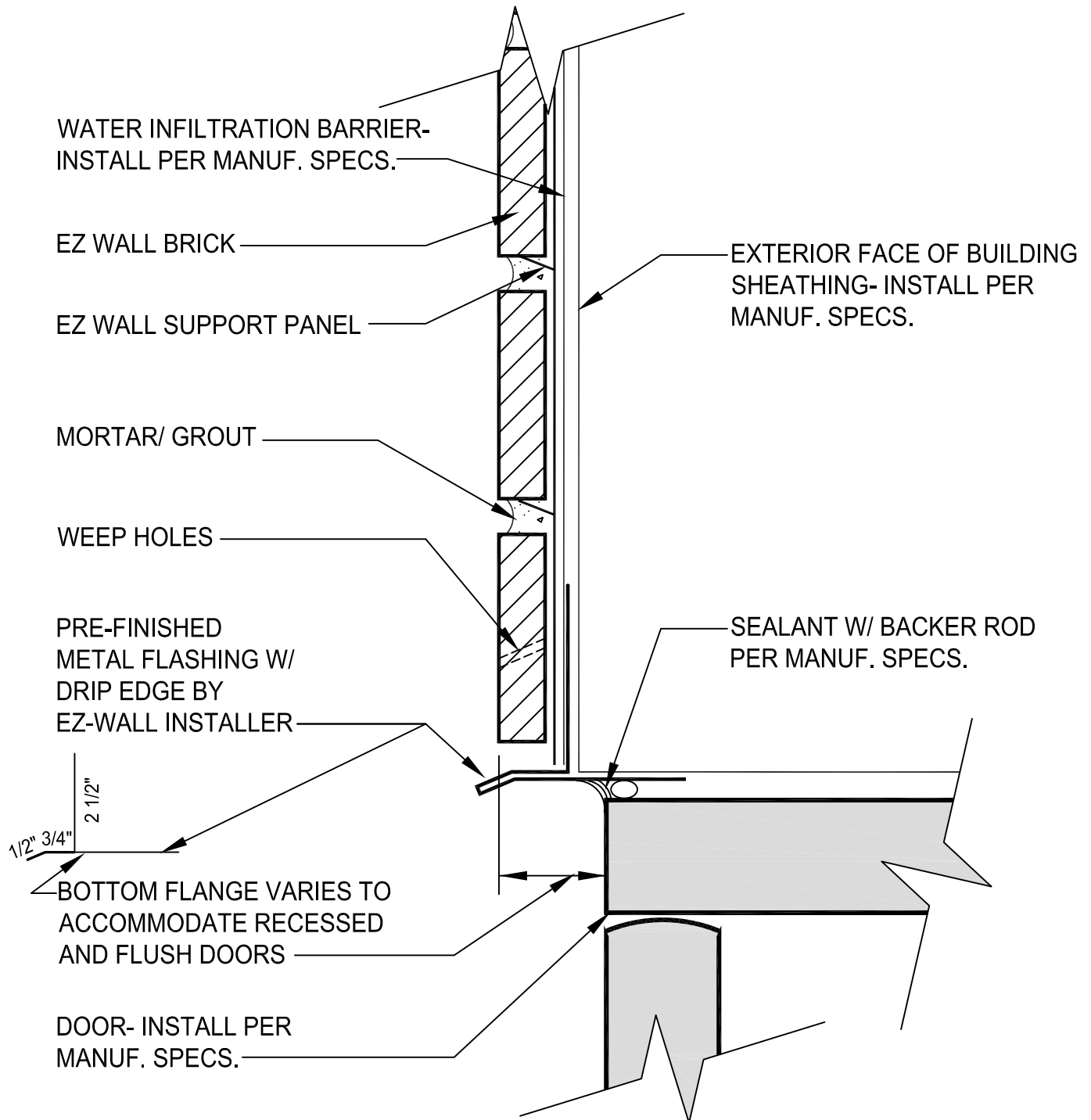
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## DOOR HEAD SECTION

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"

MEMBRANE ROOFING-  
DETAIL PER ROOFING  
MANUF. SPECS.

PRE-FINISHED  
METAL FLASHING  
W/ DRIP EDGE

1 1/2" MIN.

SEALANT- PER MANUF.  
SPECS.

EZ WALL SUPPORT PANEL

EZ WALL BRICK

MORTAR/ GROUT

"APPROVED" FASTENERS  
PER MANUF. SPECS- TYP.

EXTERIOR FACE OF BUILDING  
SHEATHING- INSTALL PER  
MANUF. SPECS.

EZ WALL SUPPORT PANEL

WATER INFILTRATION BARRIER-  
INSTALL PER MANUF. SPECS.

## ROOF EDGE DETAIL

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free:866-663-6898  
Phone:586-838-1288  
Fax: 586-933-0080  
e-mail:info@ambrico.com

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"

MEMBRANE ROOFING-  
DETAIL PER ROOFING  
MANUF. SPECS.

PRE-FINISHED  
METAL FLASHING  
W/ DRIP EDGE

1 1/2" MIN.

SEALANT- PER MANUF.  
SPECS.

EZ WALL SUPPORT PANEL

EZ WALL BRICK

MORTAR/ GROUT

"APPROVED" FASTENERS  
PER MANUF. SPECS- TYP.

EXTERIOR FACE OF BUILDING  
SHEATHING- INSTALL PER  
MANUF. SPECS.

RIGID FOAM PER TYPICAL  
"WALL W/ FOAM DETAIL"

EZ WALL SUPPORT PANEL

WATER INFILTRATION BARRIER-  
INSTALL PER MANUF. SPECS.

## ROOF EDGE DETAIL W/ FOAM

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free:866-663-6898  
Phone:586-838-1288  
Fax: 586-933-0080  
e-mail:info@ambrico.com

PROJECT NAME:

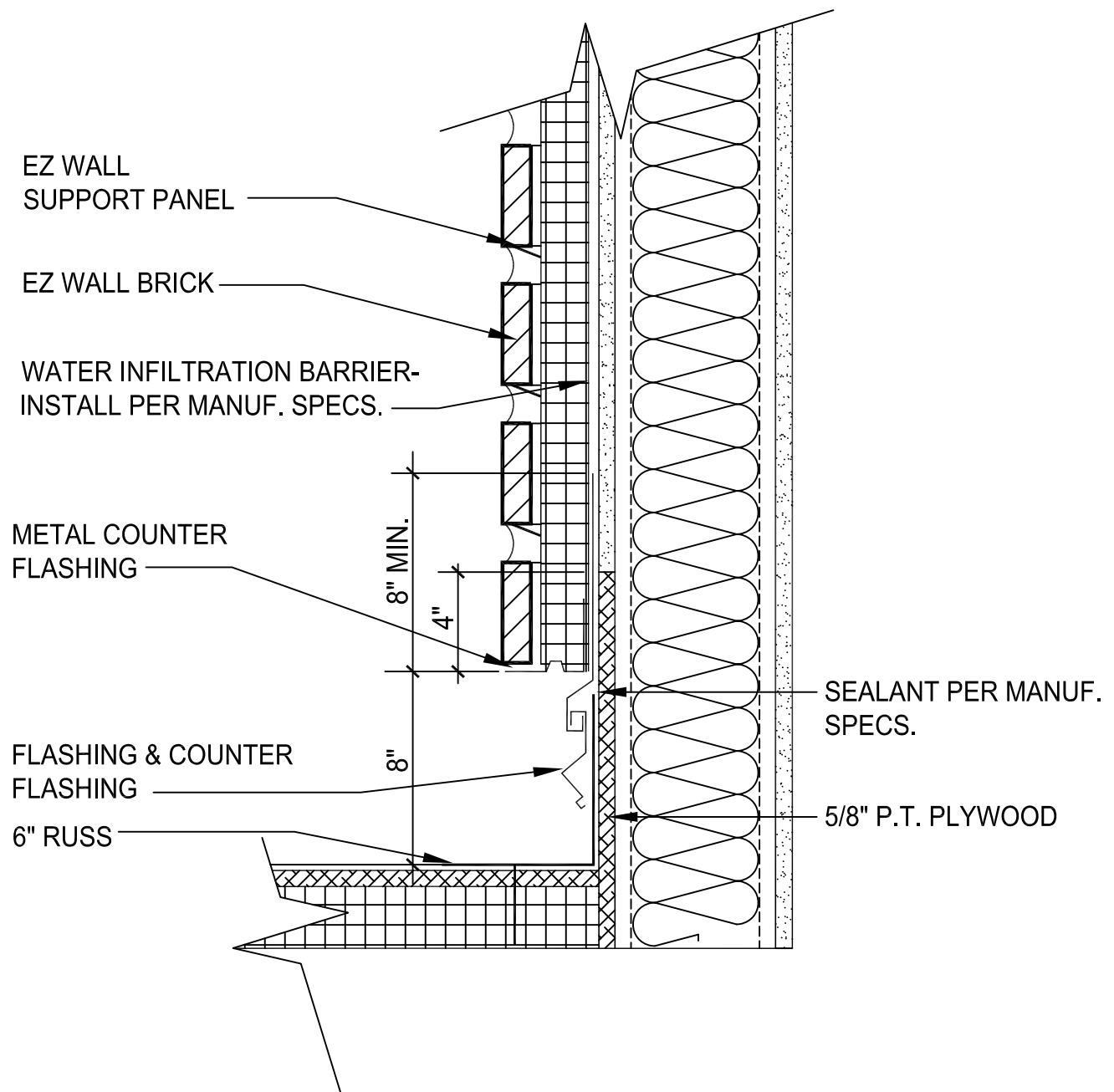
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## FLASHING DETAIL AT MEMBRANE ROOF

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

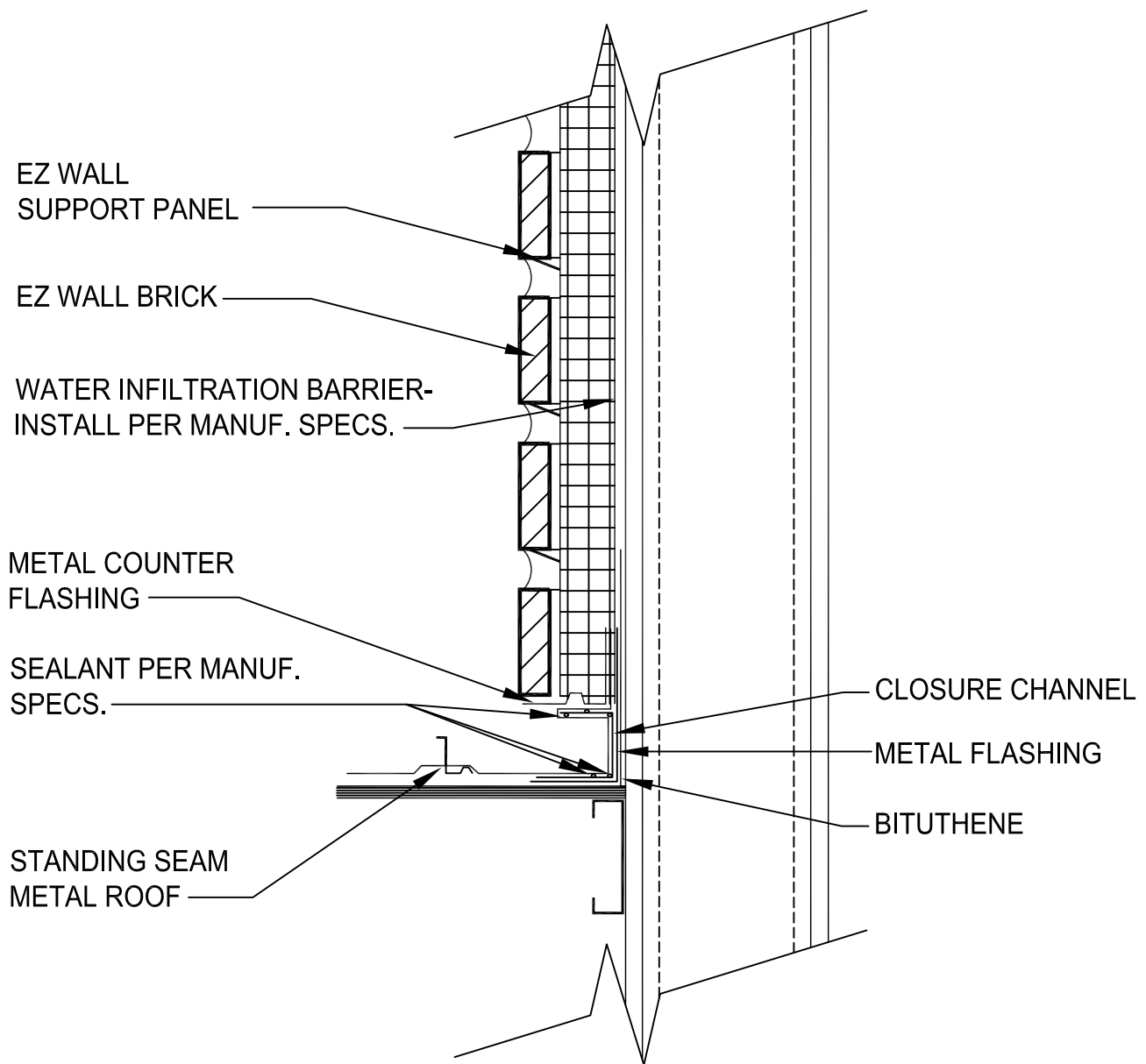
DATE:

SCALE: 6" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



## FLASHING DETAIL AT FLAT METAL ROOF

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: [info@ambrico.com](mailto:info@ambrico.com)

PROJECT NAME:

DATE:

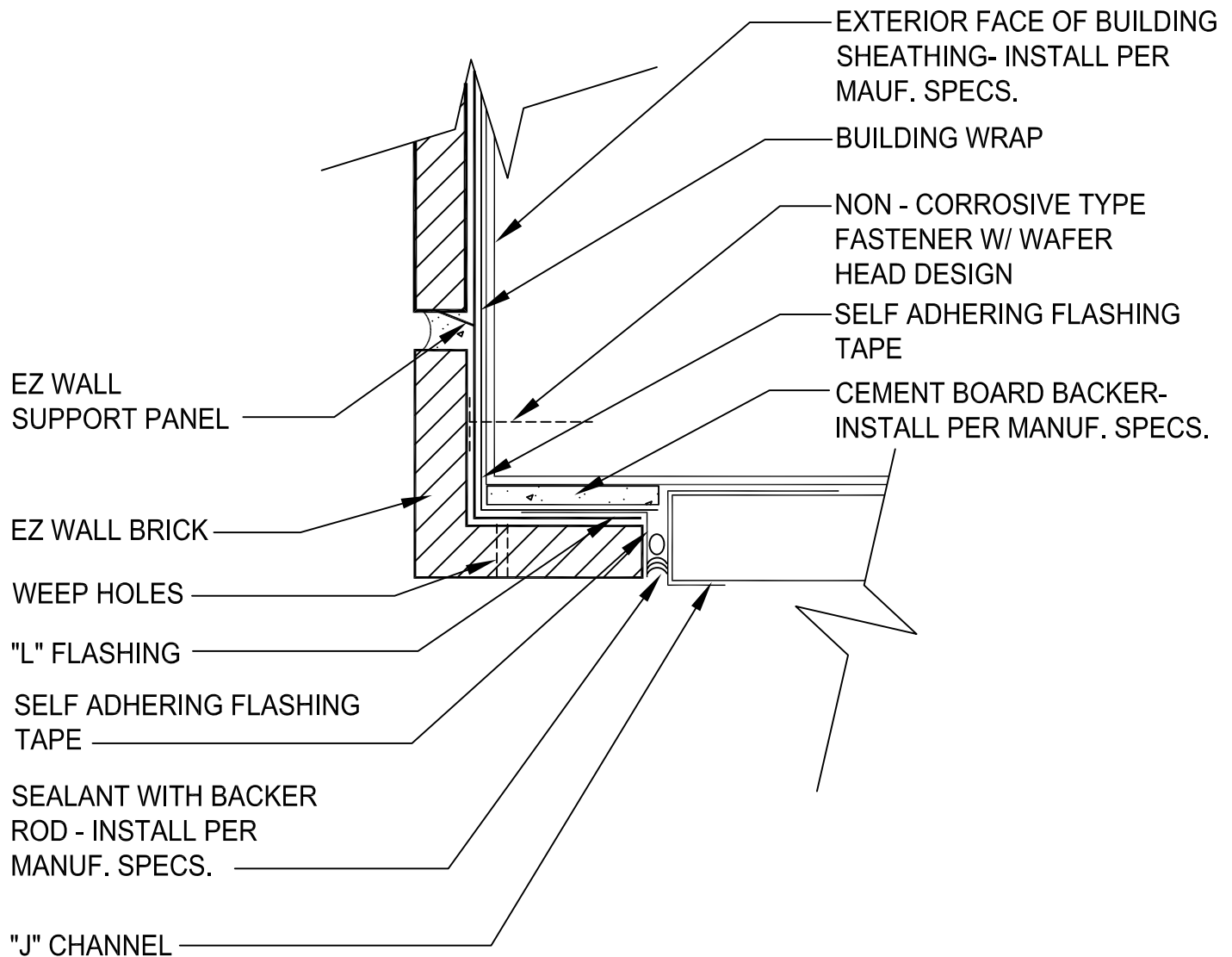
SCALE: 6" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:





## PORTICO ROOF DETAIL

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

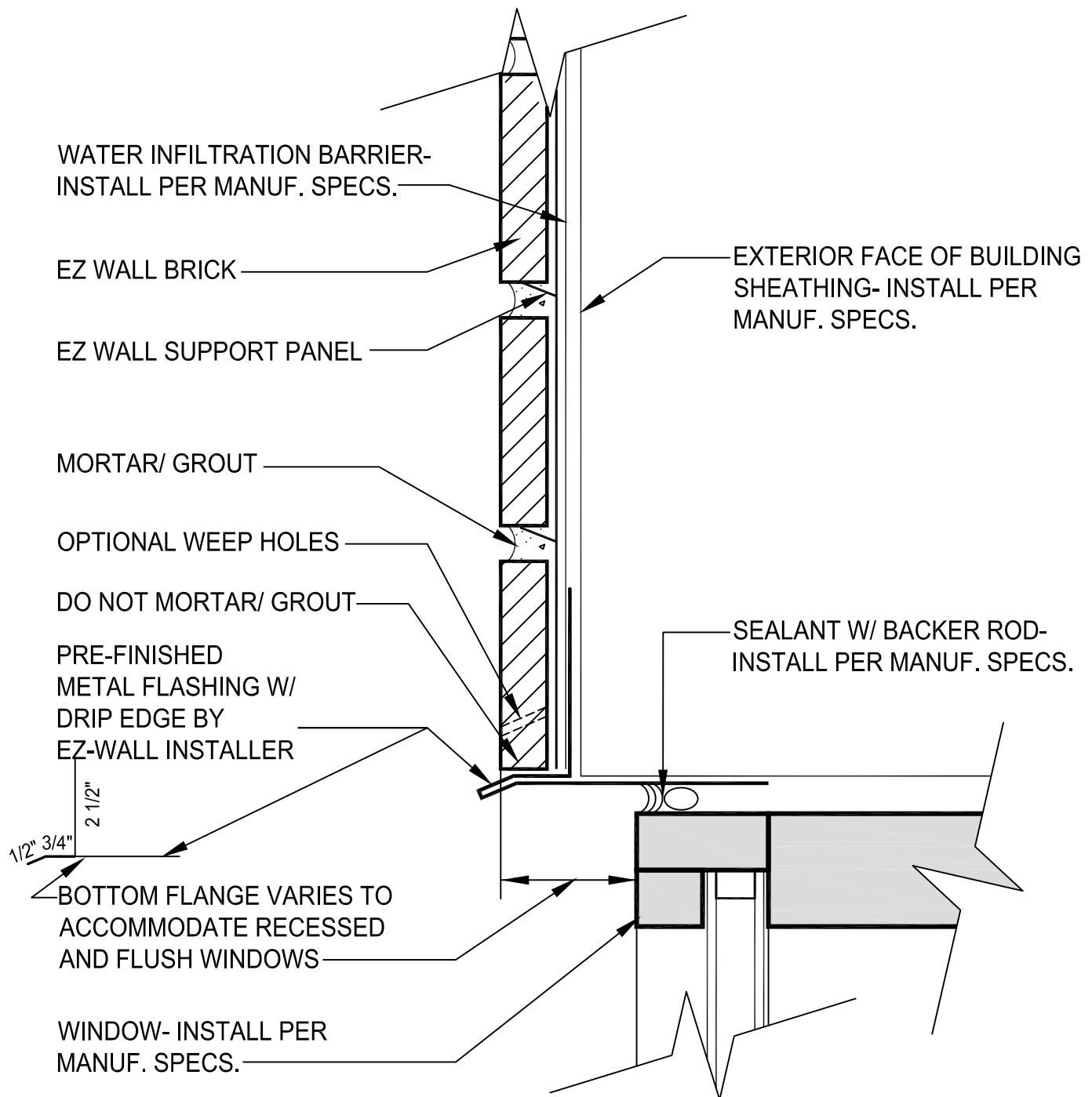
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## RECESSED WINDOW HEAD SECTION

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

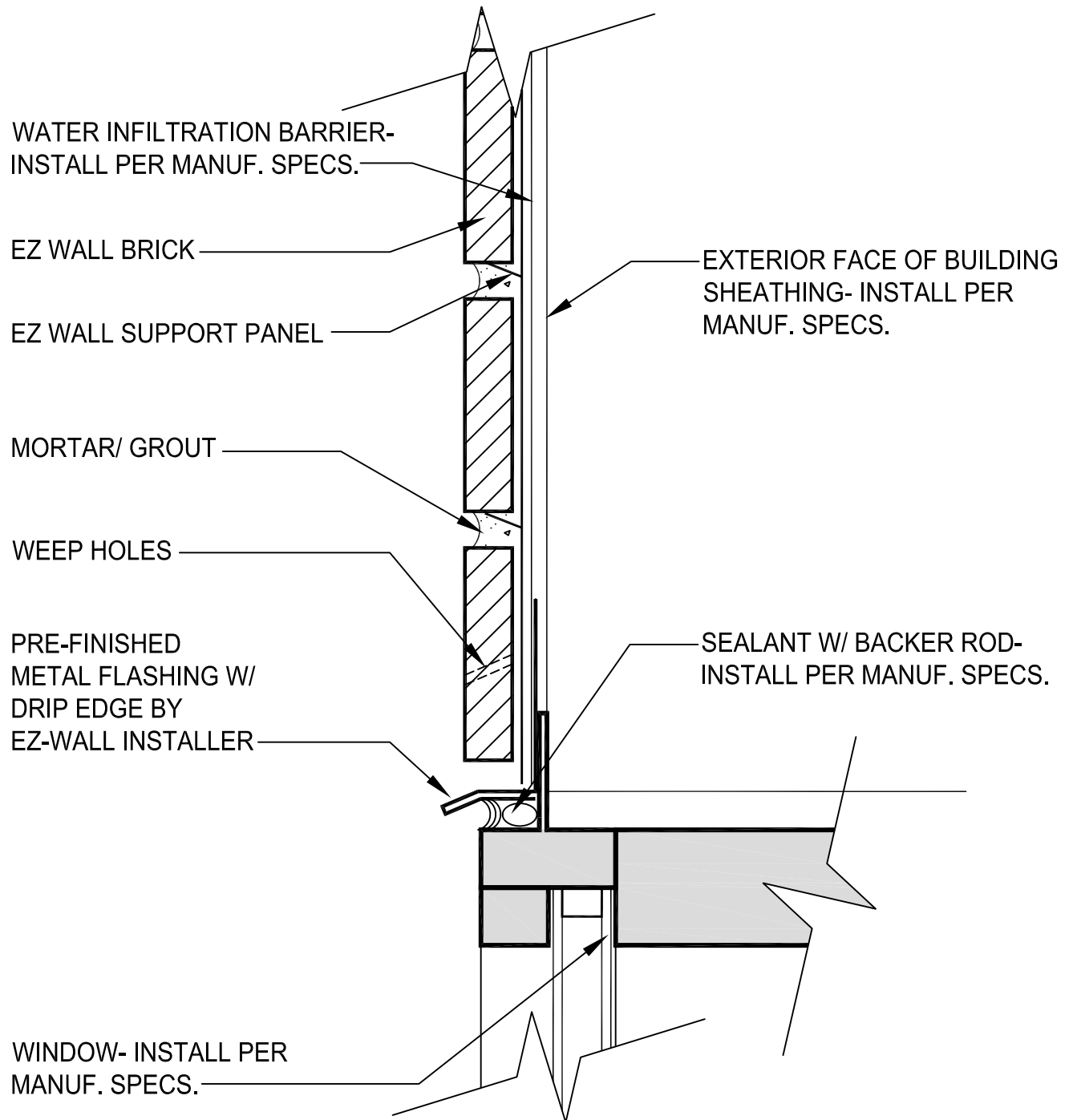
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## FLANGED WINDOW HEAD SECTION

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free:866-663-6898  
Phone:586-838-1288  
Fax: 586-933-0080  
e-mail:info@ambrico.com

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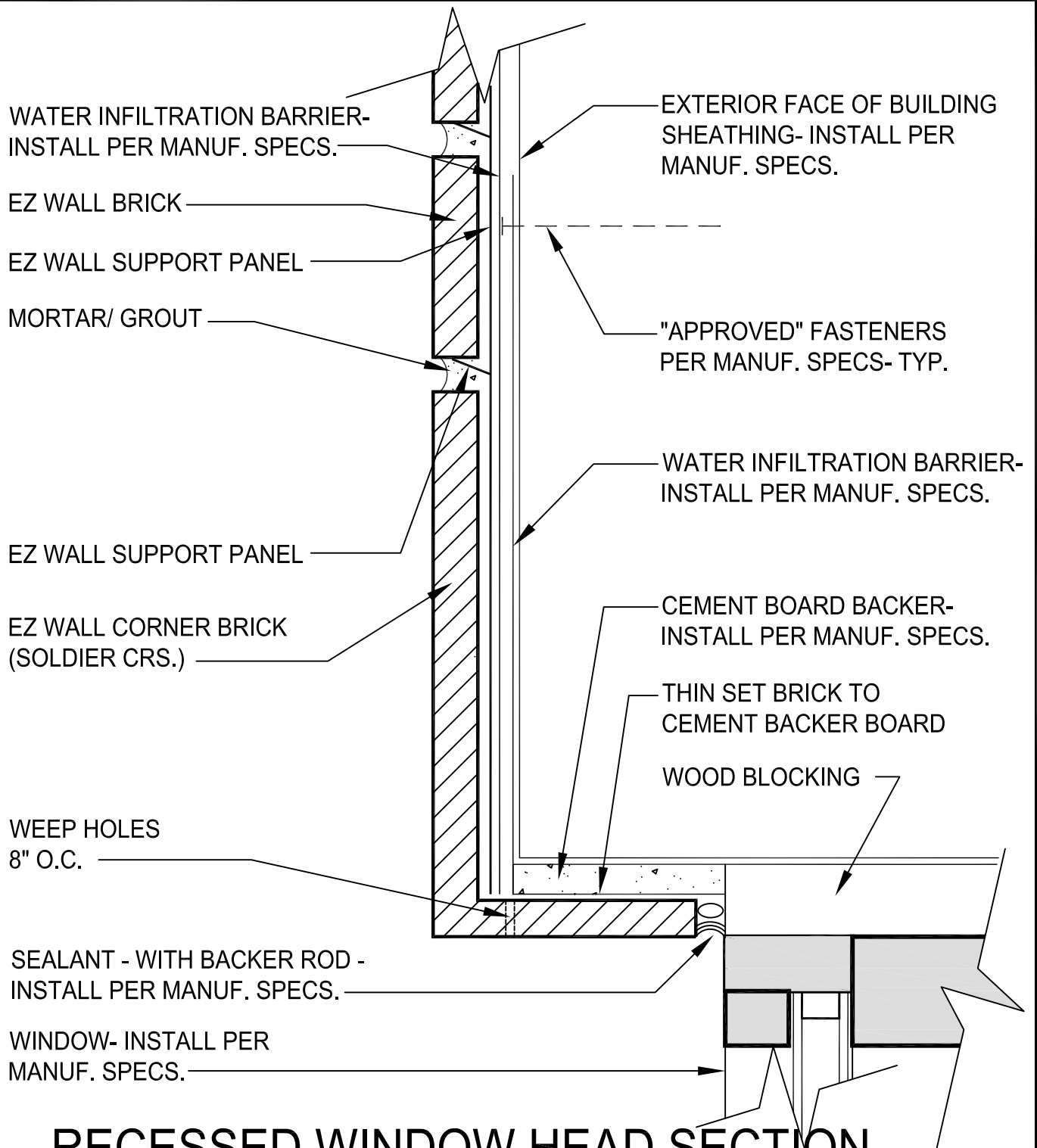
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## RECESSED WINDOW HEAD SECTION (WITH SOLDIER COURSE HEAD DETAIL)

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

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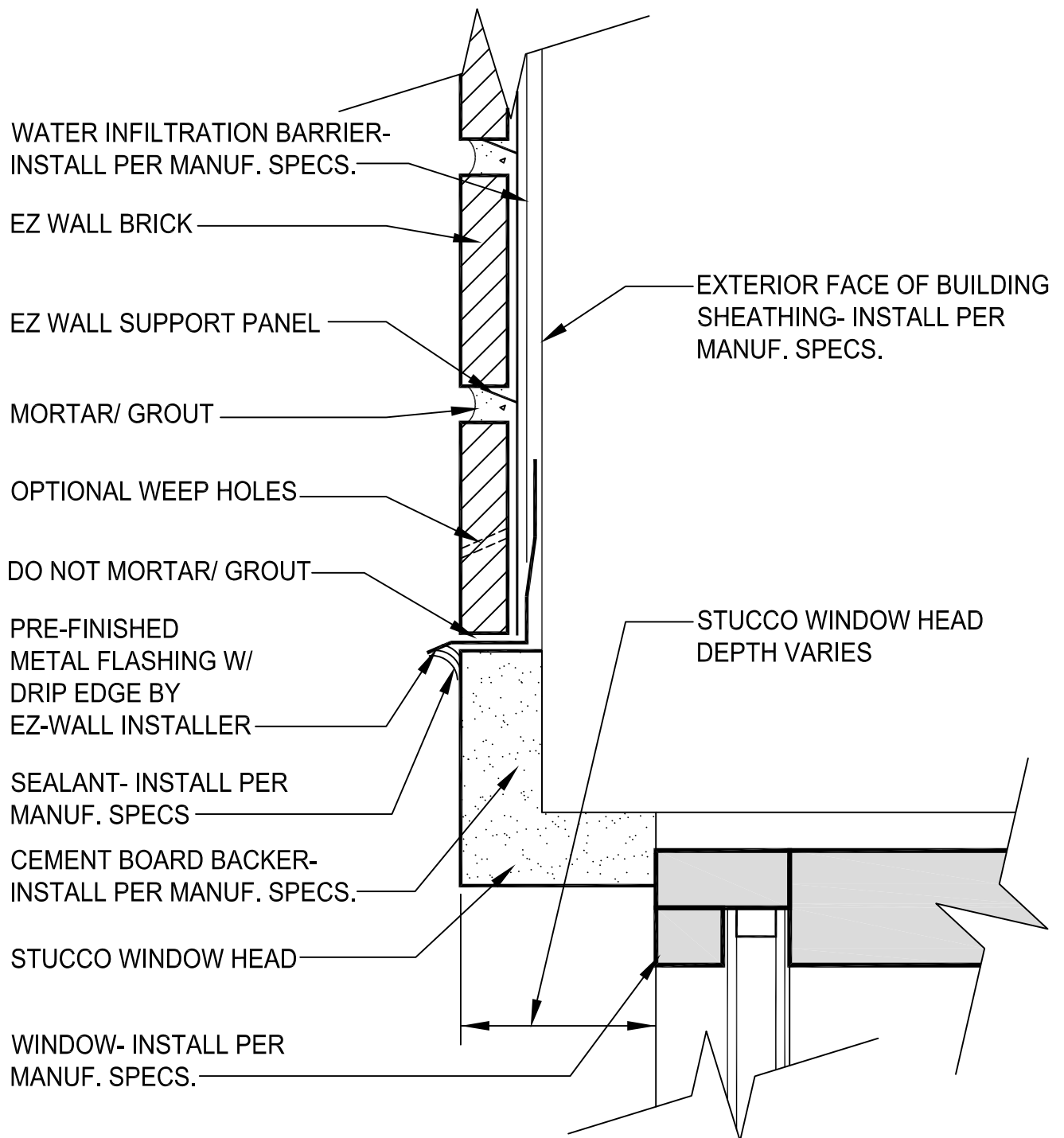
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## RECESSED WINDOW HEAD SECTION

### (WITH STUCCO WINDOW HEAD DETAIL)

#### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

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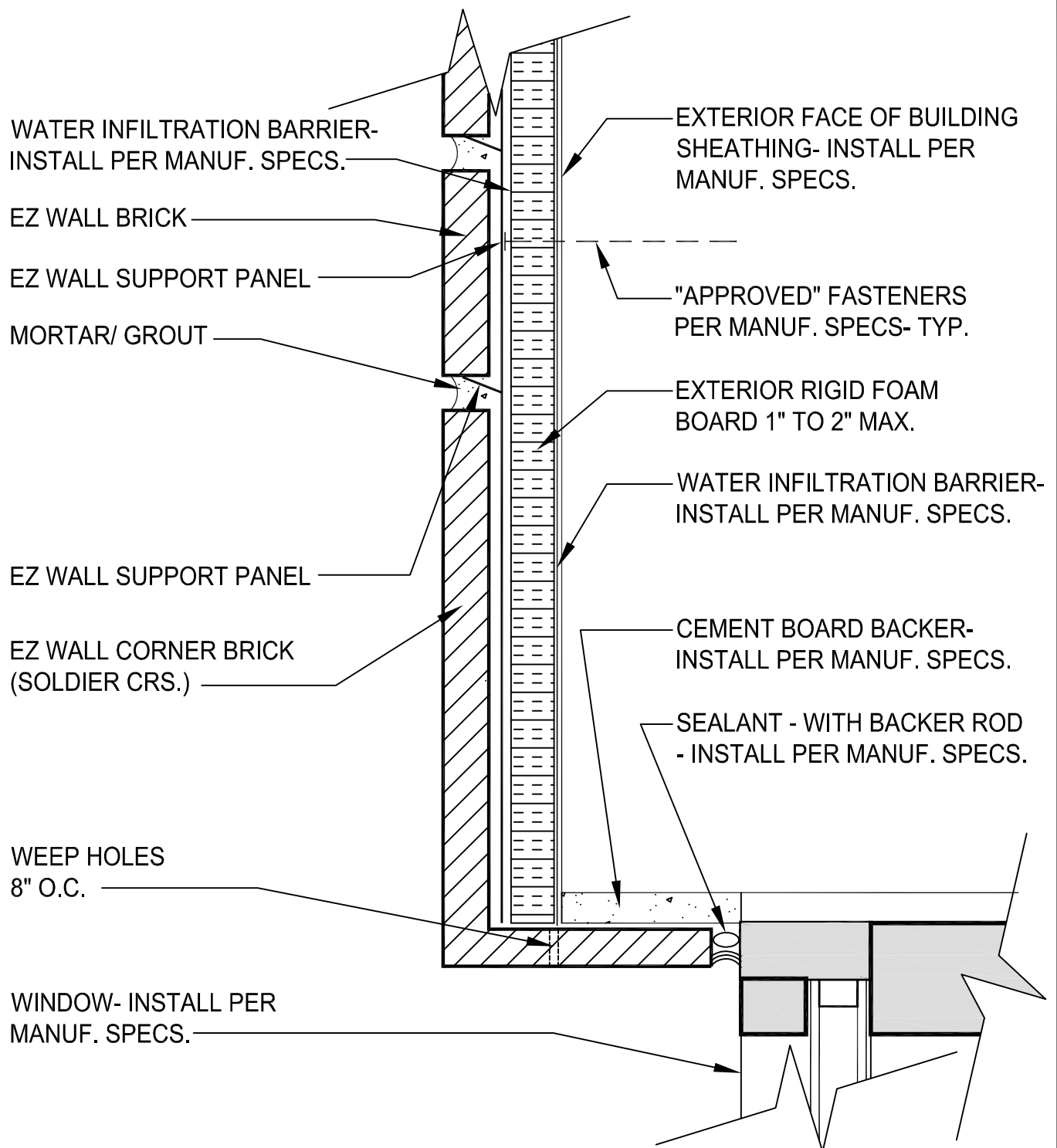
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## RECESSED WINDOW HEAD SECTION W/ FOAM (WITH SOLDIER COURSE HEAD DETAIL)

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"

WINDOW- INSTALL  
PER MANUF. SPECS.

SEALANT W/ BACKER  
ROD- INSTALL PER  
MANUF. SPECS.

EZ WALL BRICK

WATER INFILTRATION  
BARRIER- INSTALL PER  
MANUF. SPECS

EZ WALL SUPPORT  
PANEL

SELF-ADHERING FLEXIBLE  
FLASHING TO EXTEND OVER  
WINDOW FULL WIDTH- INSTALL  
PER MANUF. SPECS.

EXTERIOR FACE OF BUILDING  
SHEATHING- INSTALL PER  
MANUF. SPECS.

## RECESSED WINDOW JAMB PLAN DETAIL

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: [info@ambrico.com](mailto:info@ambrico.com)

PROJECT NAME:

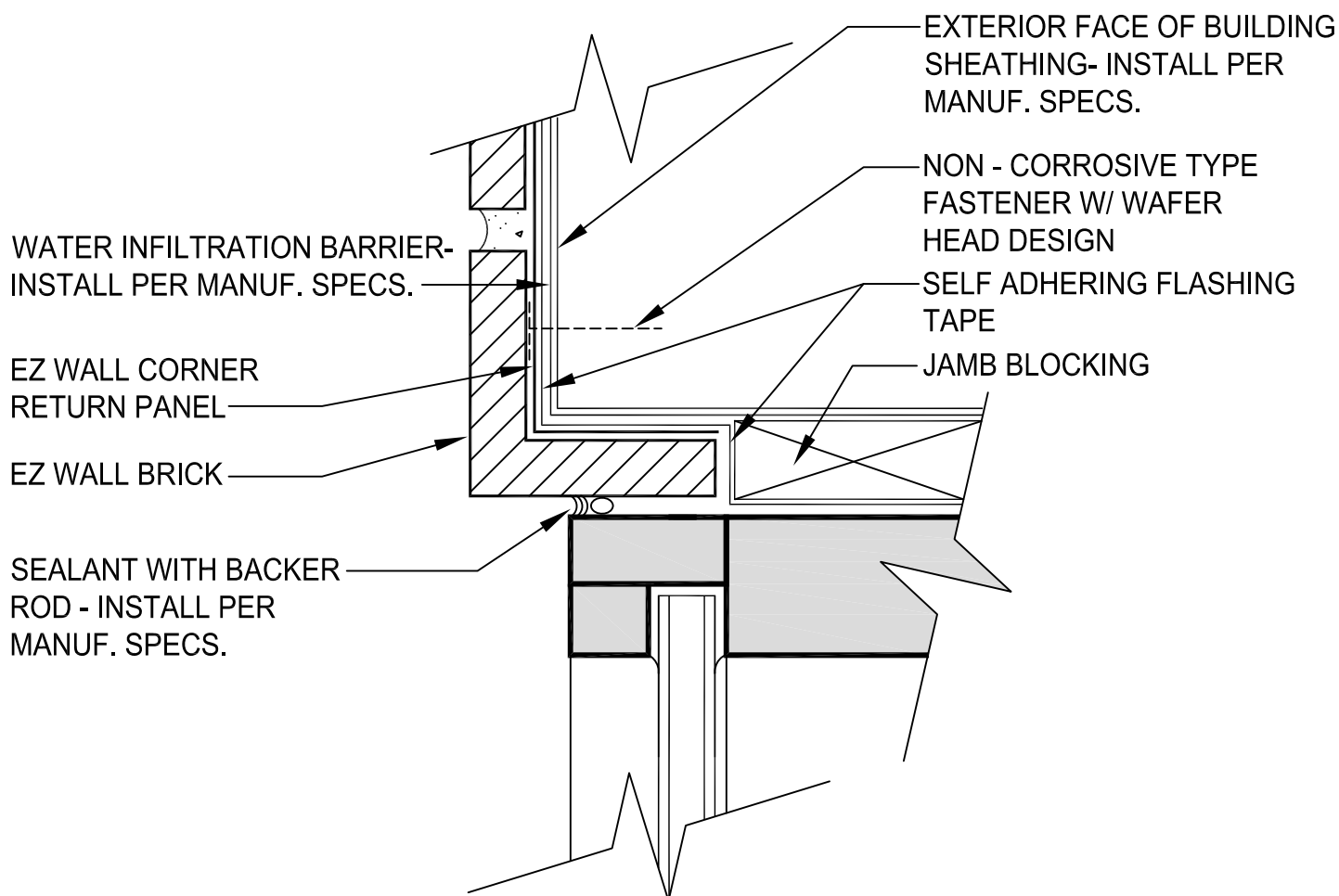
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## RECESSED WINDOW JAMB PLAN DETAIL

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

DATE:

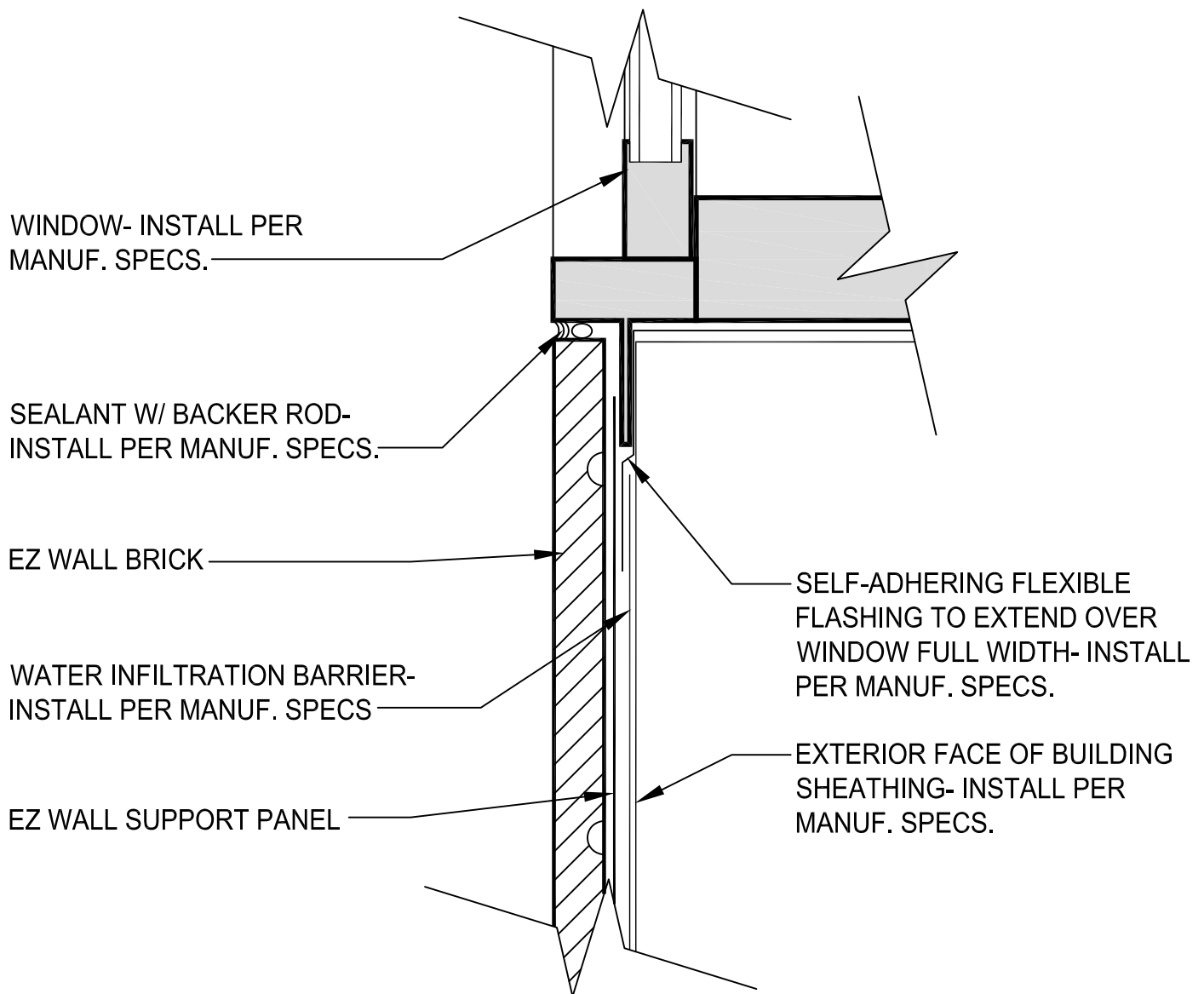
SCALE: 6" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:





## FLANGED WINDOW JAMB PLAN DETAIL

### **EZ-WALL**

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"

WINDOW- INSTALL  
PER MANUF. SPECS.

SEALANT W/ BACKER  
ROD- INSTALL PER  
MANUF. SPECS.

EZ WALL BRICK

WATER INFILTRATION  
BARRIER- INSTALL PER  
MANUF. SPECS

EZ WALL SUPPORT  
PANEL

SELF-ADHERING FLEXIBLE  
FLASHING TO EXTEND OVER  
WINDOW FULL WIDTH- INSTALL  
PER MANUF. SPECS.

EXTERIOR FACE OF BUILDING  
SHEATHING- INSTALL PER  
MANUF. SPECS.

EXTERIOR RIGID FOAM  
BOARD 1" TO 2" MAX.

## RECESSED WINDOW JAMB PLAN DETAIL

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

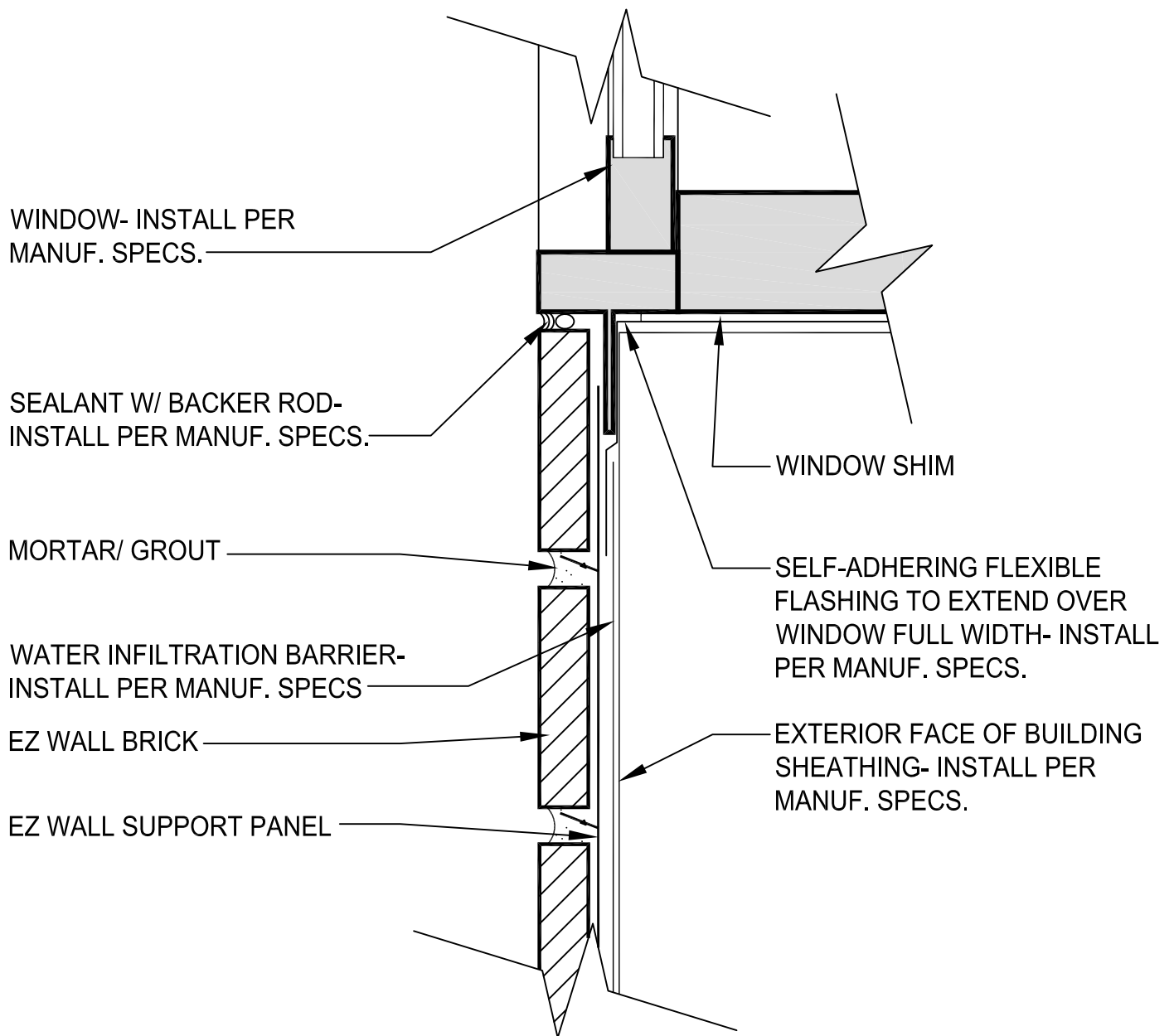
DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## FLANGED WINDOW SILL SECTION

### **EZ-WALL**

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"

WINDOW- INSTALL PER  
MANUF. SPECS.

RECESSED WINDOW-  
DEPTH VARIES

SEALANT- INSTALL PER  
MANUF. SPECS.

PRE-FINISHED  
METAL FLASHING W/  
DRIP EDGE BY  
WINDOW INSTALLER

MORTAR/ GROUT

WATER INFILTRATION BARRIER-  
INSTALL PER MANUF. SPECS

EZ WALL BRICK

EZ WALL SUPPORT PANEL

"APPROVED" FASTENERS  
PER MANUF. SPECS- TYP.

WINDOW SHIM

EXTERIOR FACE OF BUILDING  
SHEATHING- INSTALL PER  
MANUF. SPECS.

## RECESSED WINDOW SILL SECTION

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

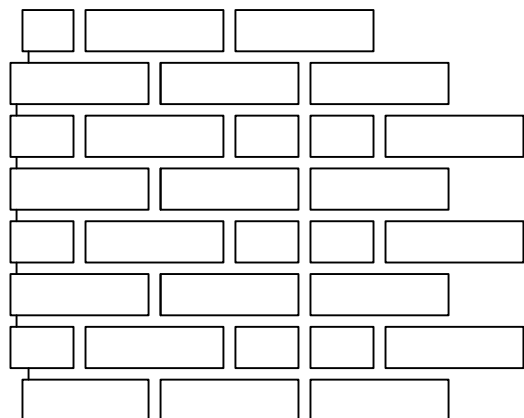
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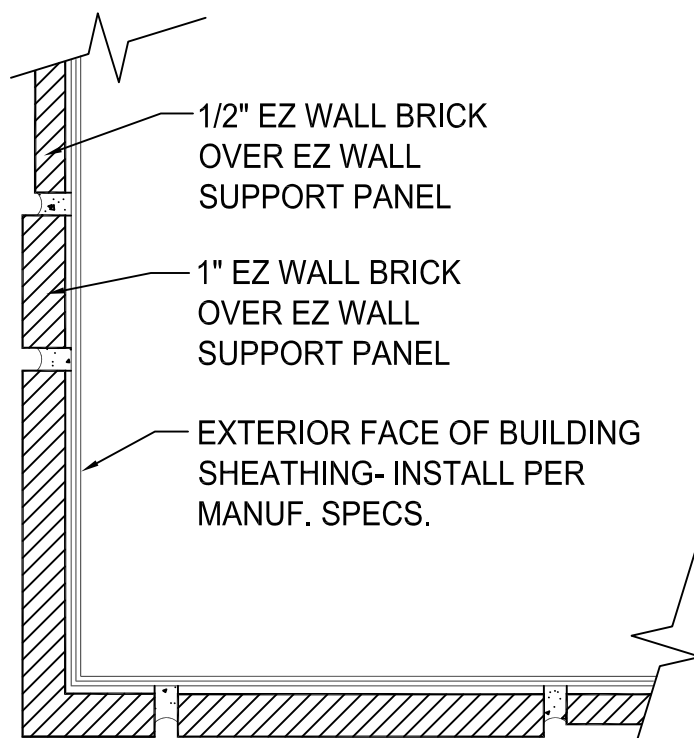
DATE:

JOB NUMBER:

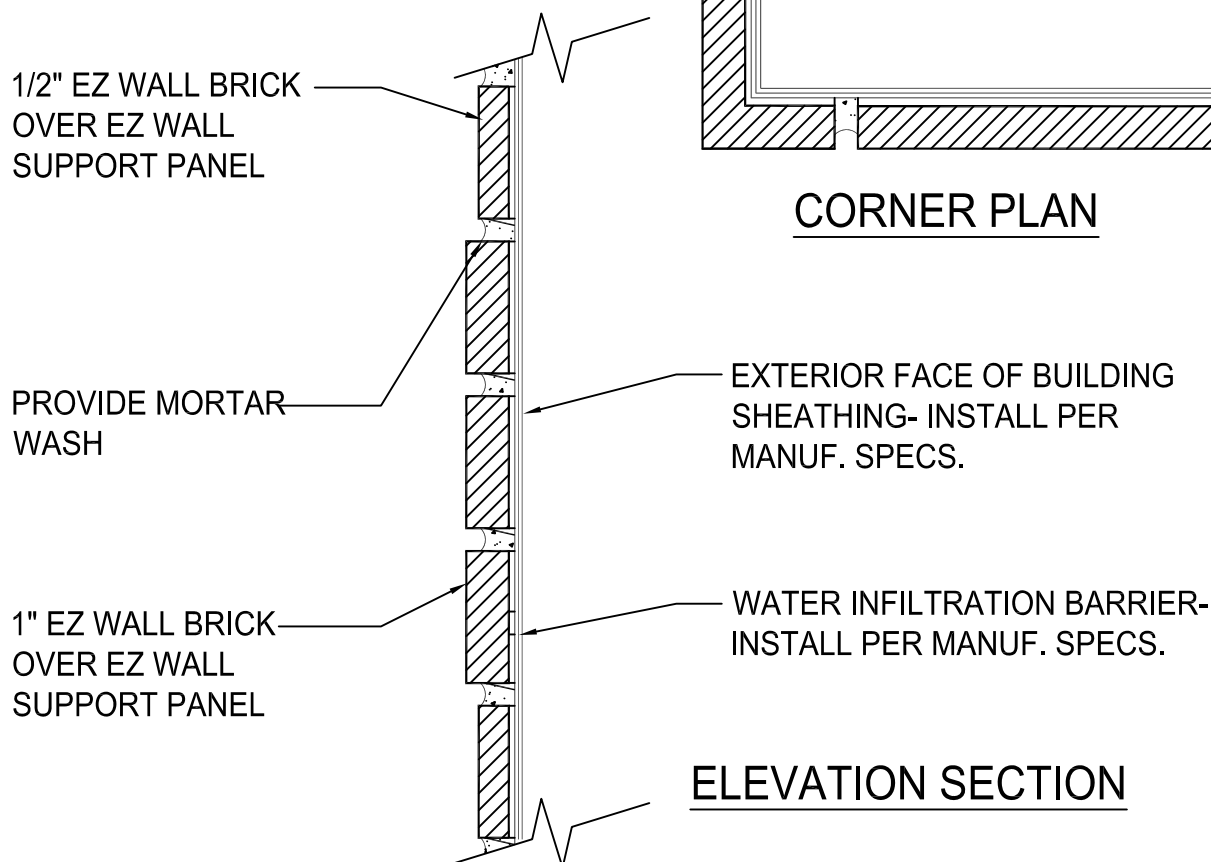
SCALE: 6" = 1'-0"



CORNER ELEVATION



CORNER PLAN



ELEVATION SECTION

# BRICK CORNER QUOIN PLAN AND ELEVATION

## EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

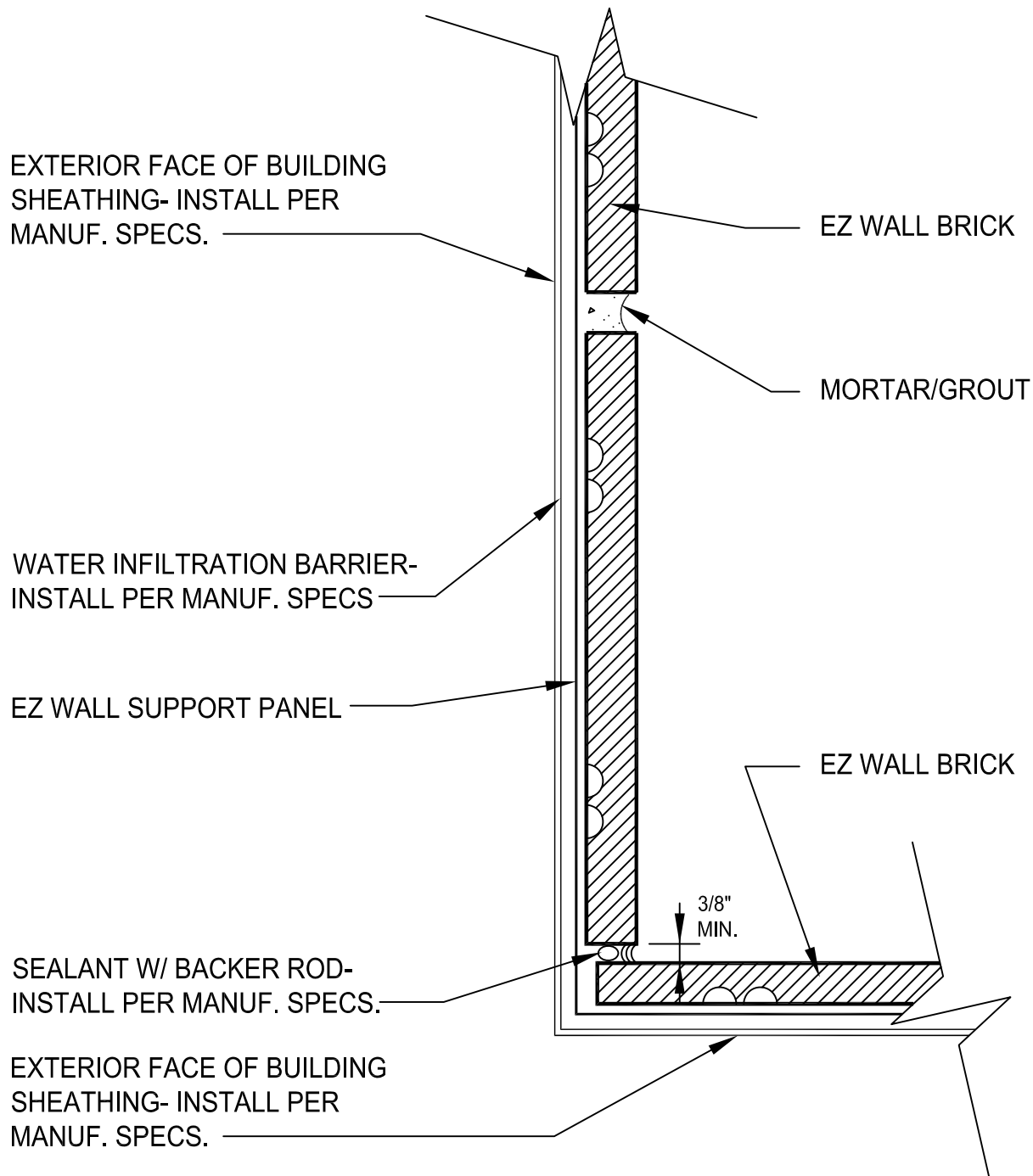
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CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 3" = 1'-0"



## INSIDE CORNER EXPANSION JOINT DETAIL- PLAN VIEW

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free:866-663-6898  
Phone:586-838-1288  
Fax: 586-933-0080  
e-mail:info@ambrico.com

PROJECT NAME:

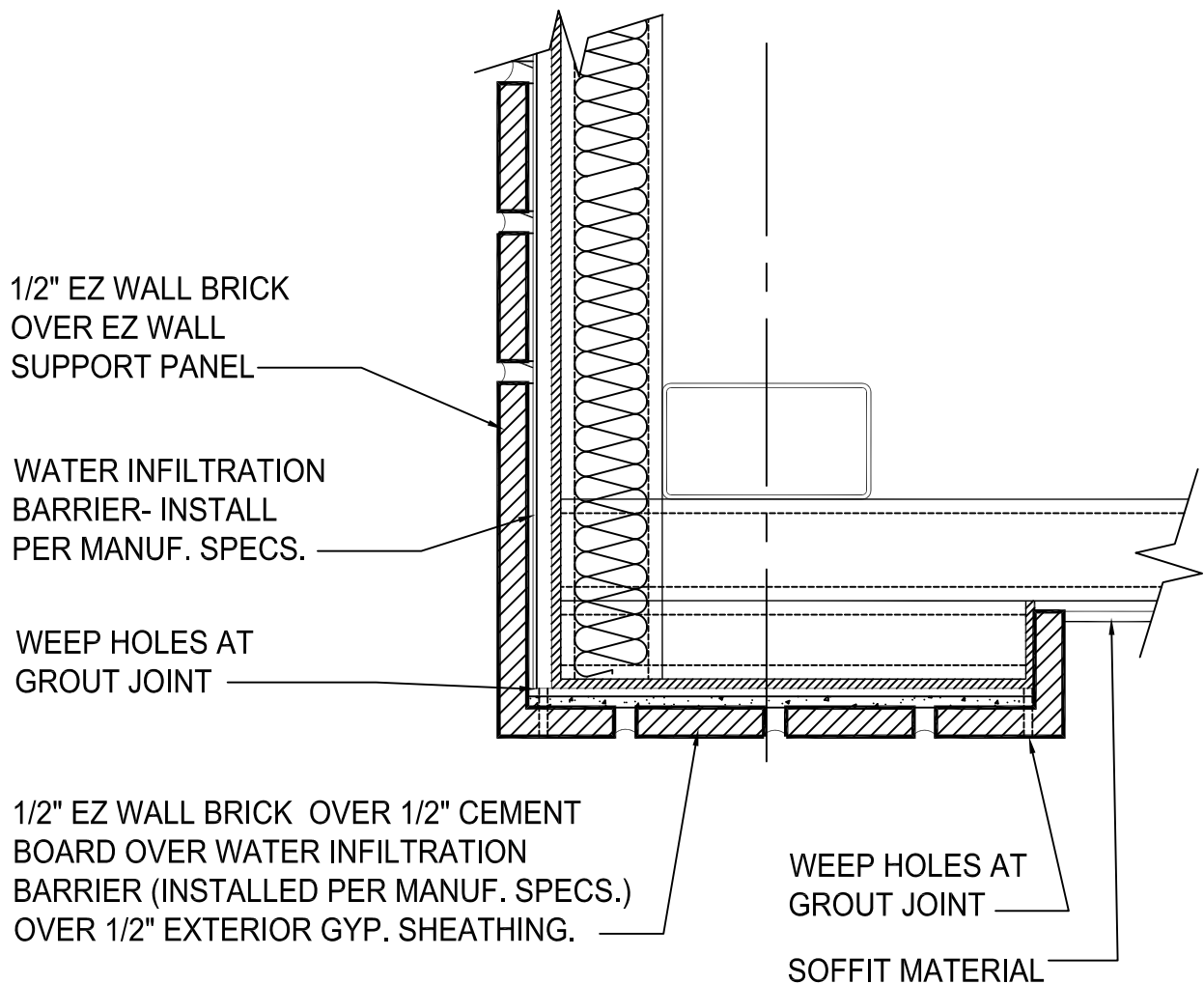
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CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



## DETAIL AT THIN BRICK SOFFIT AND HORIZONTAL CORNER RETURNS

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

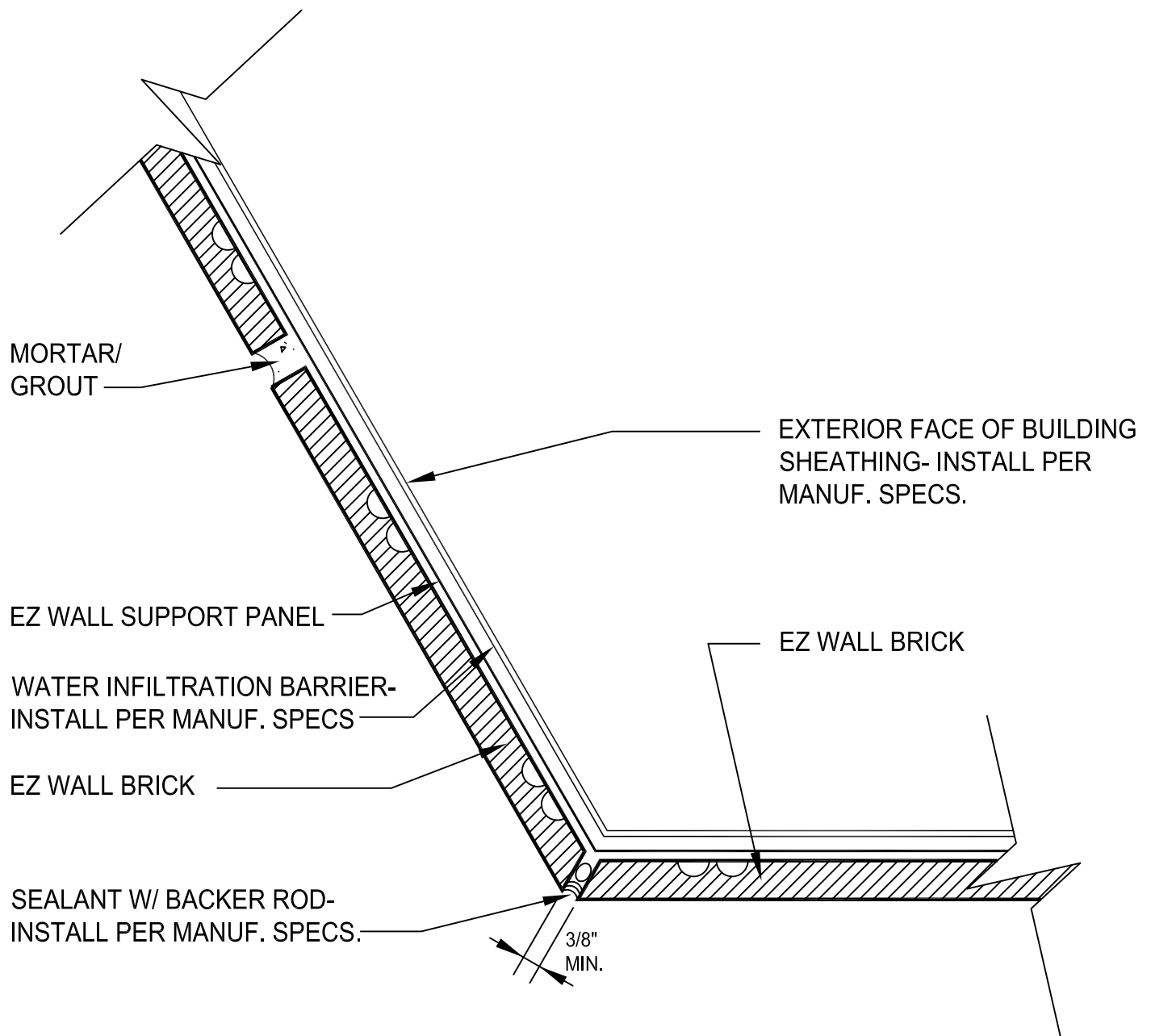
DATE:

SCALE: 3" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



## OUTSIDE CORNER DETAIL - ANGLED CORNER- PLAN VIEW

### **EZ-WALL**

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: [info@ambrico.com](mailto:info@ambrico.com)

PROJECT NAME:

DRAWN BY:

CHECKED BY:

DATE:

JOB NUMBER:

SCALE: 6" = 1'-0"



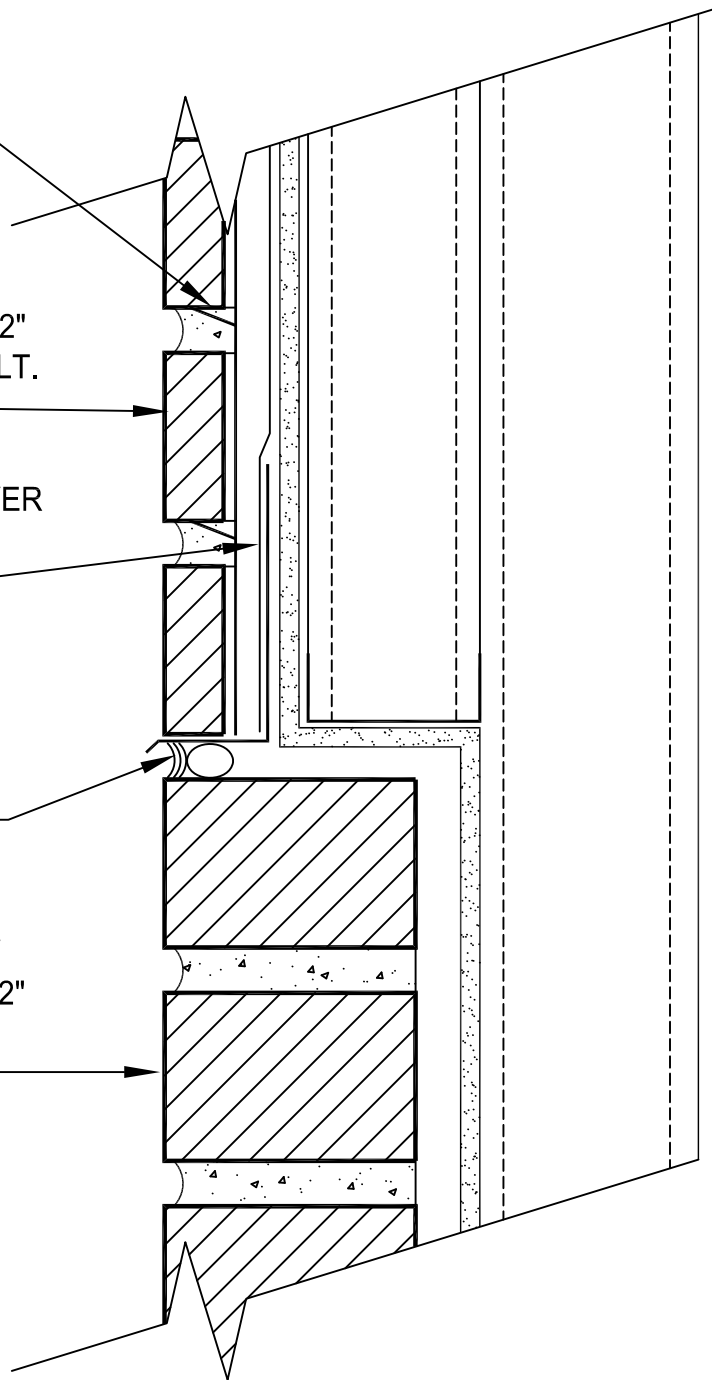
EZ WALL  
SUPPORT PANEL

EZ WALL BRICK OVER AIR /  
MOISTURE BARRIER OVER 1/2"  
EXT GYP. SHEATHING OVER LT.  
GA. FRAMING @ 16" O.C.

AIR / MOISTURE BARRIER OVER  
CONT. PREFINISHED GALV.  
METAL FLASHING

SEALANT WITH BACKER  
ROD - INSTALL PER  
MANUF. SPECS.

4" BRICK VENEER OVER AIR /  
MOISTURE BARRIER OVER 1/2"  
EXT. GYP. SHEATHING OVER  
L.T. GA. FRAMING



## BRICK TRANSITION @ TOWER COLUMN

### EZ-WALL

American Brick Company  
12901 Stephens Road Warren, MI 48089  
Toll Free: 866-663-6898  
Phone: 586-838-1288  
Fax: 586-933-0080  
e-mail: info@ambrico.com

PROJECT NAME:

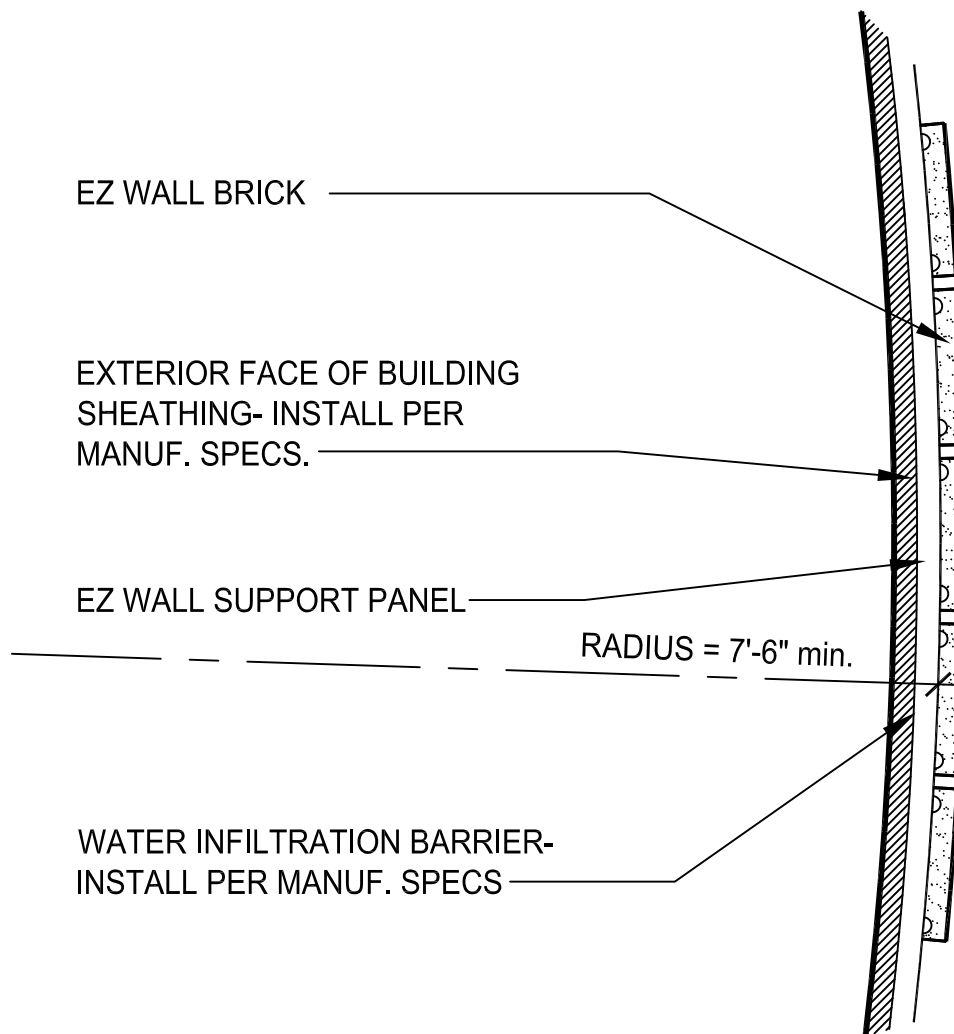
DATE:

SCALE: 6" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



## CORNER RADIUS WALL FLAT COURSE

### EZ-WALL

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

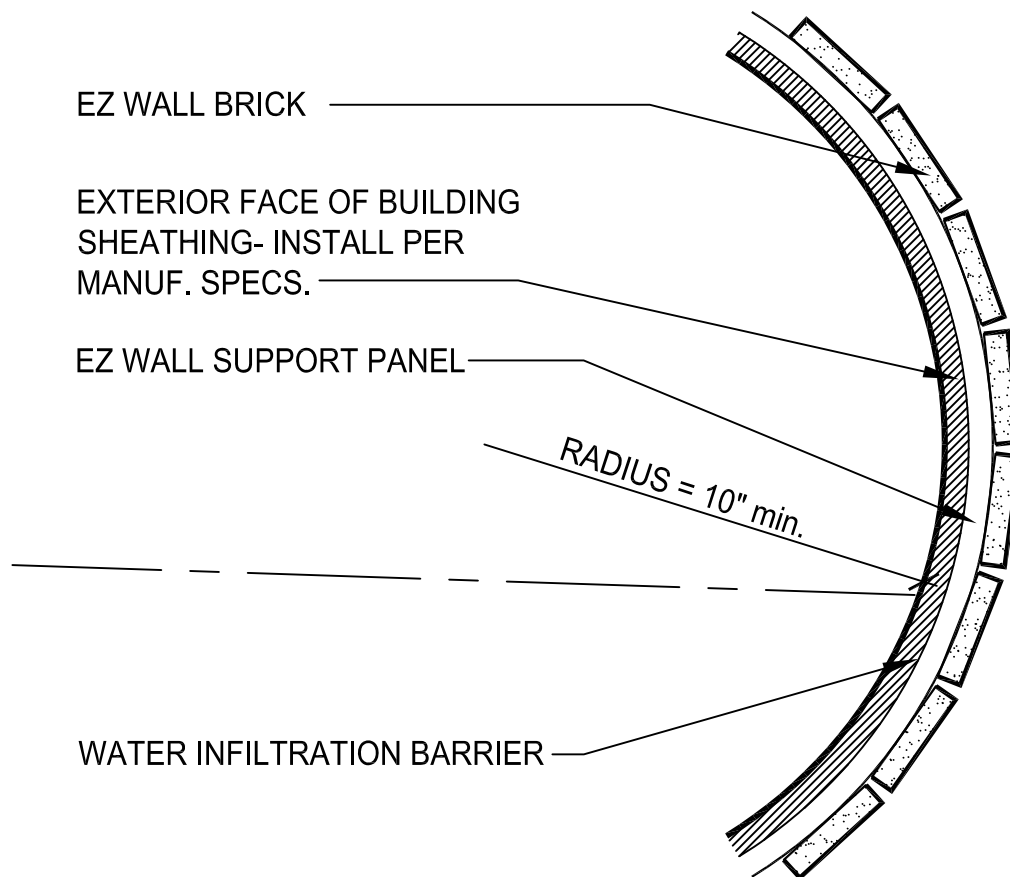
DATE:

SCALE: 3" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



## CORNER RADIUS WALL SOLDIER COURSE

### **EZ-WALL**

American Brick Company  
 12901 Stephens Road Warren, MI 48089  
 Toll Free: 866-663-6898  
 Phone: 586-838-1288  
 Fax: 586-933-0080  
 e-mail: info@ambrico.com

PROJECT NAME:

DATE:

SCALE: 3" = 1'-0"

DRAWN BY:

CHECKED BY:

JOB NUMBER:



# MATERIAL SAFETY DATA SHEET

Gibraltar National Corporation  
8951 Schaefer Rd. Bldg. #4  
Detroit, Michigan 48228-2515

## Section I – Identification

Manufacturer's Name: Gibraltar National Corporation  
Address: 8951 Schaefer Rd., Bldg. #4, Detroit, MI 48228  
Emergency Tele. No.: (313) 491-3500  
Product Name: William R Brick Lime Mortar  
Chemical Family: Dry Packaged Portland cement Based Product

## Section II – Hazardous Ingredients

Vehicle: N/A  
Metallic Coatings: N/A  
Hazardous Mixtures: Portland Cement – CAS 65997-15-1  
PEL (OSHA) MgM3 – 5  
TLV MgM3 - 5  
Silica Sands - CAS 14808-60-7  
PEL (OSHA) MgM3 - 0.1  
Lime – CAS 39445-23-3  
TLV MgM3 - 5

## Section III – Physical Data

Boiling Point (F.): N/A  
Vapor Pressure (mmHg): N/A  
Vapor Density (air=1): N/A  
Solubility in Water: Slight  
Spec. Gravity (H2O=1): 2.5  
Percent, Volatile  
By Volume (%): N/A  
Evaporation Rate: None  
Appearance & Odor: Gray Powder – Odorless  
Melting Point: N/A

## Section IV – Fire & Explosion Hazard Data

Flash Point (way used): N/A  
Flammable Limits: N/A  
Extinguishing Media: N/A  
Spec. Fire Fighting  
Procedures: N/A  
Unusual Fire & Expl.  
Hazards: Noncombustible and Nonexplosive

## Section V – Health Hazard Information

Threshold Limit Val.:	5 MgM3 - % Respirable Quartz – 10 MgM3 Total
Effects of over-Exposure:	Skin – Drying irritation; Dust may cause unpleasant deposits in eyes, ears, nose.; possible scarring of lungs w/cough & shortness of breath above threshold limit value. Wet cement can dry skin and cause alkali burns with Little warning – no heat is sensed.
Chronic Exposure:	Dust may cause inflammation of nose tissue and inflammation of cornea; Silicosis may result from prolonged breathing of free silica.
Emergency First Aid Procedures:	Skin – Wash with soap & Water / apply hand lotion Eyes – Flush repeatedly with water. If irritation persists obtain medical attention.

## Section VI – Reactivity Data

Stability:	Stable
Incompatibility:	Acids
Hazard Polymerization	
May / May Not Occur:	May Not
Condition to Avoid:	Keep dry until used

## Section VII – Spill / Leak Procedures

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wear respirator or dust mask when cleaning up. Use dry clean up method – Pick up mechanically, avoid breathing dust; Reuse or dispose.

WASTE DISPOSAL METHOD: Dispose of as common waste. Be sure to follow Local, State, and Federal Regulations.

## Section VIII – Special Protection Info.

Respiratory Protection:	General purpose dust mask or respirator recommended.
Ventilation Local / Mech. / Spec.:	Adequate Ventilation
Protective Gloves:	Rubber or General purpose recommended
Eye Protection:	Special Eye Wear Recommended
Other:	Typical full cover clothing.

## Section IX – Special Precautions

### PRECAUTION TO BE TAKEN IN HANDLING AND STORING

Store off of ground in a covered dry area. Use dustless or wet systems when handling  
Clean up so exposure does not exceed T.L.V.

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The data in this material safety data sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information and recommendations contained herein are based upon data believed to be correct. However, since data, safety standards, and government regulations are subject to change and the conditions of handling or misuse are beyond our control Gibraltar National Corporation, makes no warranty, either express or implied, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.

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Furnished by: Ann M. Lucas, Purchasing Manager

Dated: January 21, 1991

Revise Date: September 1, 1994

By: C. M. Hierta, Customer Service Manager

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# Franklin International

## Material Safety Data Sheet

Product name : EZ-Wall Mastic

### 1 . Product and company identification

**CAS #** : mixture  
**Address** : Franklin International  
2020 Bruck Street  
Columbus OH 43207  
**Contact person** : Franklin Technical Services  
**Telephone** : (800) 877-4583  
**Emergency phone:** : Franklin Security  
(614) 445-1300  
**Reference number** : 3195  
**Product code** : 375262  
**Date of revision** : 4/23/2009.  
**Print date** : 10/15/2009.  
**Chemtrec (24 Hour)** : (800) 424 - 9300  
**Chemtrec International** : (703) 527 - 3887  
**Chemical family** : Adhesive.  
**Product use** : Construction Adhesive  
**Product type** : Solvent based

### 2 . Hazards identification

**Physical state** : Liquid. [Paste.]  
**Odor** : Solvent. [Strong]  
**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Emergency overview** : DANGER!  
EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE. REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS IN FEMALES.  
Extremely flammable liquid. Harmful by inhalation. May be harmful if swallowed. Severely irritating to eyes. Irritating to respiratory system and skin. Defatting to the skin. Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not ingest. Do not get in eyes. Avoid contact with skin and clothing. Contains material that may cause target organ damage. Contains material which can impair female fertility. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.  
**Potential acute health effects**  
**Inhalation** : Toxic by inhalation. Irritating to respiratory system.  
**Ingestion** : Harmful if swallowed.



## 2 . Hazards identification

- Skin** : Irritating to skin.  
**Eyes** : Severely irritating to eyes. Risk of serious damage to eyes.

### Potential chronic health effects

- Chronic effects** : Contains material that may cause target organ damage. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : Contains material which can impair female fertility.  
**Target organs** : Contains material which may cause damage to the following organs: kidneys, liver, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

### Over-exposure signs/symptoms

- Inhalation** : High vapor concentrations can cause headaches, dizziness, drowsiness and nausea and may lead to unconsciousness. Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
  
**Ingestion** : No specific data.  
**Skin** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking  
  
**Eyes** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness  
  
**Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

## 3 . Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
acetone	67-64-1	10 - 25
n-hexane	110-54-3	10 - 25
toluene	108-88-3	5 - 10

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

## 4 . First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.  
**Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.  
**Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

## 4 . First aid measures

- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5 . Fire-fighting measures

- Flammability of the product** : Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Extinguishing media**
- Suitable** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Absorb with an inert material.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7 . Handling and storage

### Handling

- : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Storage

- : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## 8 . Exposure controls/personal protection

Ingredient	Exposure limits
acetone	<p><b>ACGIH TLV (United States, 1/2008).</b>  TWA: 500 ppm 8 hour(s).  TWA: 1188 mg/m<sup>3</sup> 8 hour(s).  STEL: 750 ppm 15 minute(s).  STEL: 1782 mg/m<sup>3</sup> 15 minute(s).  <b>OSHA PEL 1989 (United States, 3/1989).</b>  TWA: 750 ppm 8 hour(s).  TWA: 1800 mg/m<sup>3</sup> 8 hour(s).  STEL: 1000 ppm 15 minute(s).  STEL: 2400 mg/m<sup>3</sup> 15 minute(s).  <b>NIOSH REL (United States, 6/2008).</b>  TWA: 250 ppm 10 hour(s).  TWA: 590 mg/m<sup>3</sup> 10 hour(s).  <b>OSHA PEL (United States, 11/2006).</b>  TWA: 1000 ppm 8 hour(s).  TWA: 2400 mg/m<sup>3</sup> 8 hour(s).</p>
n-hexane	<p><b>OSHA PEL 1989 (United States, 3/1989).</b>  TWA: 50 ppm 8 hour(s).  TWA: 180 mg/m<sup>3</sup> 8 hour(s).  <b>NIOSH REL (United States, 6/2008).</b>  TWA: 50 ppm 10 hour(s).  TWA: 180 mg/m<sup>3</sup> 10 hour(s).  <b>ACGIH TLV (United States, 1/2008). Absorbed through skin.</b>  TWA: 50 ppm 8 hour(s).  <b>OSHA PEL (United States, 11/2006).</b>  TWA: 500 ppm 8 hour(s).  TWA: 1800 mg/m<sup>3</sup> 8 hour(s).</p>
toluene	<p><b>OSHA PEL 1989 (United States, 3/1989).</b>  TWA: 100 ppm 8 hour(s).  TWA: 375 mg/m<sup>3</sup> 8 hour(s).  STEL: 150 ppm 15 minute(s).  STEL: 560 mg/m<sup>3</sup> 15 minute(s).  <b>OSHA PEL Z2 (United States, 11/2006).</b>  TWA: 200 ppm 8 hour(s).  CEIL: 300 ppm  AMP: 500 ppm 10 minute(s).</p>

## 8 . Exposure controls/personal protection

### NIOSH REL (United States, 6/2008).

TWA: 100 ppm 10 hour(s).

TWA: 375 mg/m<sup>3</sup> 10 hour(s).

STEL: 150 ppm 15 minute(s).

STEL: 560 mg/m<sup>3</sup> 15 minute(s).

### ACGIH TLV (United States, 1/2008).

TWA: 20 ppm 8 hour(s).

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

## 9 . Physical and chemical properties

- Physical state** : Liquid. [Paste.]
- Flash point** : Closed cup: -17.778°C (-0.0004°F) [Setaflash.]
- Flammable limits** : Lower: 1.2%  
Upper: 12.8%
- Color** : Beige.
- Odor** : Solvent. [Strong]
- Boiling/condensation point** : 49.444°C (121°F)
- Relative density** : 1.06
- Volatility** : 34% (w/w)
- VOC (less water, less exempt solvents)** : 282 g/l
- Solubility** : Insoluble in the following materials: cold water.

## 10 . Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Hazardous polymerization</b>	: Under normal conditions of storage and use, hazardous polymerization will not occur.
<b>Conditions to avoid</b>	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
<b>Materials to avoid</b>	: Highly reactive or incompatible with the following materials: oxidizing materials
<b>Incompatibility</b>	: Reactive or incompatible with the following materials: acids and alkalis.
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Conditions of reactivity</b>	: Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.

## 11 . Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-hexane	LD50 Oral	Rat	25 gm/kg	-
	LDLo	Rat	9100 mg/kg	-
	Intraperitoneal			
	TDLo Oral	Rat	20000 mg/kg	-
acetone	LC50 Inhalation	Rat	627000 mg/m3	3 minutes
	LC50 Inhalation	Rat	48000 ppm	4 hours
	LD50 Intravenous	Rat	5500 mg/kg	-
	LD50 Oral	Rat	5800 mg/kg	-
	LDLo	Rat	500 mg/kg	-
	Intraperitoneal			
	LDLo Dermal	Rabbit	20 mL/kg	-
toluene	TDLo Oral	Rat	5 mL/kg	-
	LC50 Inhalation	Rat	50100 mg/m3	8 hours
	LD50 Dermal	Rabbit	14100 uL/kg	-
	LD50	Rat	1332 mg/kg	-
	Intraperitoneal			
	LD50 Intravenous	Rat	1960 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
	LD50 Unreported	Rat	6900 mg/kg	-
	LDLo	Rat	2.5 mL/kg	-
	Intraperitoneal			
	TDLo Oral	Rat	400 mg/kg	-
	TDLo Oral	Rat	800 mg/kg	-
	TDLo Oral	Rat	1200 mg/kg	-
	TDLo	Rat	900 mg/kg	-
	Intraperitoneal			
	TDLo	Rat	750 mg/kg	-
	Intraperitoneal			
	TDLo	Rat	1 gm/kg	-
	Intraperitoneal			
	TDLo	Rat	600 mg/kg	-
	Intraperitoneal			
	LC50 Inhalation	Rat	49 gm/m3	4 hours

### Chronic toxicity

No known significant effects or critical hazards.

### Irritation/Corrosion

### Conclusion/Summary

## 11 . Toxicological information

- Skin** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Eyes** : Moderately irritating to eyes.
- Respiratory** : High vapor concentrations can cause headaches, dizziness, drowsiness and nausea and may lead to unconsciousness.

### Sensitizer

No known significant effects or critical hazards.

### Carcinogenicity

#### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
acetone	A4	-	-	-	-	-
toluene	A4	3	-	-	-	-

### Mutagenicity

No known significant effects or critical hazards.

### Teratogenicity

No known significant effects or critical hazards.

### Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
toluene	-	-	-	Rat	Inhalation	-

**Conclusion/Summary** : Reproductive toxicant - female

## 12 . Ecological information

**Environmental effects** : No known significant effects or critical hazards.

### Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
n-hexane	-	Acute LC50 113000 ug/L Fresh water	Fish - Mozambique tilapia - Tilapia mossambica - 99 mm - 10 g	96 hours
	-	Acute LC50 2500 to 2980 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 31 days - 20.4 mm - 0.123 g	96 hours
acetone	-	Acute LC50 6900 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 5.54 to 6.33 ml/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss - 1 g	96 hours
	-	Acute LC50 12100000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute LC50 11000000 to 11300000 ug/L Marine water	Fish - Bleak - Alburnus alburnus - 8 cm	96 hours
	-	Acute LC50 10700000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 25 mm	96 hours
	-	Acute LC50 9218000 to 14400000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <12 hours	48 hours
	-	Acute LC50 9100000 to 9482000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 2 to 3 months - 19 mm - 0.06 g	96 hours
	-	Acute LC50 8800000 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex - <24 hours	48 hours

## 12 . Ecological information

	-	Fresh water	Daphnia pulex - <24 hours	
	-	Acute LC50 8300000 ug/L	Fish - Bluegill - Lepomis macrochirus - 5.3 to 7.2 cm - 3.5 to 3.9 g	96 hours
	-	Acute LC50 8120000 to 8760000 ug/L	Fish - Fathead minnow - Pimephales promelas - 33 days - 22.6 mm - 0.159 g	96 hours
	-	Acute LC50 8098000 to 8640000 ug/L	Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <12 hours	48 hours
	-	Acute LC50 7810000 ug/L	Daphnia - Water flea - Daphnia cucullata - 11 days	48 hours
	-	Acute LC50 7550000 ug/L	Crustaceans - Aquatic sowbug - Asellus aquaticus	48 hours
	-	Acute LC50 7460000 ug/L	Daphnia - Water flea - Daphnia cucullata - 11 days	48 hours
	-	Acute LC50 7280000 to 7880000 ug/L	Fish - Fathead minnow - Pimephales promelas - 28 days - 19.2 mm - 0.076 g	96 hours
	-	Acute LC50 6210000 to 7030000 ug/L	Fish - Fathead minnow - Pimephales promelas - 32 days - 18 mm - 0.087 g	96 hours
	-	Acute LC50 >100000 ug/L	Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g	96 hours
	-	Acute LC50 10000 ug/L	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 13300000 ug/L	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute LC50 12600000 ug/L	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute EC50 19600 ug/L	Daphnia - Water flea - Daphnia magna - LARVAE	48 hours
	-	Acute EC50 6880 to 9830 ug/L	Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours	48 hours
	-	Acute EC50 6780 to 7810 ug/L	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g	96 hours
	-	Acute EC50 6000 ug/L	Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	-	Acute LC50 15.5 ppm	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult	48 hours
	-	Acute LC50 15500 ug/L	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio	48 hours
	-	Acute LC50 9360 ug/L	Fish - Coho salmon, silver salmon - Oncorhynchus	96 hours

toluene



## 12 . Ecological information

-	Acute LC50 8110 ug/L Fresh water	kisutch - FRY - >90 days Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - 0.3 g	96 hours
-	Acute LC50 8090 to 8780 ug/L Marine water	Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g	96 hours
-	Acute LC50 7630 to 8480 ug/L Marine water	Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g	96 hours
-	Acute LC50 170000 ug/L Marine water	Crustaceans - Dungeness or edible crab - Cancer magister - Zoea	48 hours
-	Acute LC50 97700 to 174700 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours	48 hours
-	Acute LC50 6780 to 7810 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 54 mm - 2.187 g	96 hours
-	Acute LC50 6410 to 7180 ug/L Marine water	Fish - Pink salmon - Oncorhynchus gorbuscha - FRY - 3.5 cm - 0.35 g	96 hours
-	Acute LC50 86300 to 174700 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <=24 hours	48 hours
-	Acute LC50 5800 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
-	Acute LC50 5500 ug/L Fresh water	Fish - Coho salmon,silver salmon - Oncorhynchus kisutch - FRY - 1 g	96 hours
-	Acute LC50 310000 to 420000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
-	Acute LC50 7.3 ul/L Marine water	Fish - Striped bass - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 6 g	96 hours

### Biodegradability

No known significant effects or critical hazards.

**Other adverse effects** : No known significant effects or critical hazards.

## 13 . Disposal considerations






**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.



## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	1133	Consumer commodity	ORM-D	III		-
TDG Classification	1133	ADHESIVES, containing flammable liquid	3	III		<b>Remarks</b> Limited quantity
Mexico Classification	1133	ADHESIVES, containing flammable liquid	3	III		-
ADR/RID Class	1133	ADHESIVES, containing flammable liquid	3	III		-
IMDG Class	1133	ADHESIVES, containing flammable liquid	3	III		<b>Remarks</b> Limited quantity
IATA-DGR Class	1133	ADHESIVES, containing flammable liquid	3	III		<b>Remarks</b> Limited quantity

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Flammable liquid  
Toxic material  
Irritating material  
Target organ effects

**U.S. Federal regulations** : **United States inventory (TSCA 8b)**: All components are listed or exempted.  
**SARA 302/304/311/312 extremely hazardous substances**: No products were found.  
**SARA 302/304 emergency planning and notification**: No products were found.  
**SARA 302/304/311/312 hazardous chemicals**: toluene; acetone; n-hexane; Benzene, ethenyl-, polymer with 1,3-butadiene  
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification**: EZ-Wall Mastic: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Listed

### SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
<b>Form R - Reporting requirements</b>	acetone	67-64-1	10 - 25
	n-hexane	110-54-3	10 - 25
	toluene	108-88-3	5 - 10
<b>Supplier notification</b>	n-hexane	110-54-3	10 - 25
	toluene	108-88-3	5 - 10

## 15 . Regulatory information

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

### State regulations

- Massachusetts Spill:** None of the components are listed.  
**Massachusetts Substances:** The following components are listed: HEXANE; ACETONE; TOLUENE  
**New Jersey Hazardous Substances:** The following components are listed: n-HEXANE; ACETONE; TOLUENE  
**New Jersey Spill:** None of the components are listed.  
**New Jersey Toxic Catastrophe Prevention Act:** None of the components are listed.  
**Pennsylvania RTK Hazardous Substances:** The following components are listed: HEXANE; 2-PROPANONE; BENZENE, METHYL-

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u><a href="#">Ingredient name</a></u>	<u><a href="#">Cancer</a></u>	<u><a href="#">Reproductive</a></u>	<u><a href="#">No significant risk level</a></u>	<u><a href="#">Maximum acceptable dosage level</a></u>
toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)

### International regulations

#### International lists

- Australia inventory (AICS):** Not determined.  
**China inventory (IECSC):** Not determined.  
**Japan inventory (ENCS):** Not determined.  
**Japan inventory (ISHL):** Not determined.  
**Korea inventory (KECI):** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** Not determined.  
**Philippines inventory (PICCS):** Not determined.

#### Chemical Weapons Convention List Schedule I Chemicals

- : Not listed

#### Chemical Weapons Convention List Schedule II Chemicals

- : Not listed

#### Chemical Weapons Convention List Schedule III Chemicals

- : Not listed

## 16 . Other information

### Label requirements

- : EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF INHALED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE. REPRODUCTIVE HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS IN FEMALES.

### Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0

## 16 . Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

**Date of printing** : 10/15/2009.

**Date of issue** : 4/23/2009.

**Date of previous issue** : 1/20/2009.

**Version** : 1

☑ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



AkzoNobel

# Material Safety Data Sheet

Date of printing : 4/4/2011.

Date of issue : 4/4/2011

## 1. Product and company identification

Prepared for  
ATTN:  
ROLL COATER, INC.  
US 40 EAST  
  
GREENFIELD, IN 46140 US

Prepared by  
Akzo Nobel Coatings Inc.  
1313 Windsor Ave.  
Columbus, OH 43211 US  
  
(614)294-3361  
In case of emergency (Health or Spills):  
CHEMTREC (US and Canada) (800) 424-9300

Product no. : PW2R38478  
Product - Class : WHITE POLYESTER  
Customer Part Number :  
Customer ShipTo ID : 0000100137

## 2. Hazards identification

- Physical state** : Liquid.
- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Emergency overview** : WARNING!  
FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.  
Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
- Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.
- Potential acute health effects**
- Inhalation** : Toxic by inhalation. Irritating to respiratory system.  
Other effects of inhalation may include: anesthesia, blood effects, CNS effects, cough, depression, dizziness, drowsiness, fatigue, headache, kidney damage, liver damage, nausea, shortness of breath,
- Ingestion** : Harmful if swallowed.  
Other effects of ingestion may include : blood effects, CNS effects, dizziness, fatigue, headache, kidney damage, liver damage, nausea,
- Skin** : Toxic in contact with skin. Irritating to skin.  
Other effects of skin contact may include: defatting, dehydration, dermatitis, discoloration, sensitization,  
Effects due to absorption through skin may include: blood effects,
- Eyes** : Irritating to eyes.  
Other effects of eye contact may include : eye damage, redness,

## 2. Hazards identification

### Potential chronic health effects

- Carcinogenicity** : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Target organs** : Contains material which may cause damage to the following organs: blood, kidneys, lungs, liver, central nervous system (CNS).

This product under certain conditions could release formaldehyde in sufficient quantities to require monitoring under OSHA regulations. Formaldehyde is a known carcinogen.

**Medical conditions aggravated by over-exposure** : pulmonary conditions, skin disorders, respiratory conditions,

NOTICE: Reports have associated repeated and prolonged OVEREXPOSURE to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents of this package may be harmful or fatal.

See toxicological information (Section 11)

## 3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>% by weight</u>	<u>Vapor pressure</u>	<u>Exposure limits</u>
Titanium dioxide	13463-67-7	25.32	Not available.	
aromatic solvent	.....	13.38	Not available.	<b>ACGIH TLV (United States).</b> TWA: 100 ppm 8 hour(s).
Talc , containing asbestiform fibres	14807-96-6	8.70	Not available.	<b>ACGIH TLV (United States).</b> TWA: 2 mg/m <sup>3</sup> 8 hour(s). <b>OSHA PEL (United States).</b> TWA: 2 mg/m <sup>3</sup> 8 hour(s).
1,2,4-trimethylbenzene	95-63-6	6.53	Not available.	<b>ACGIH TLV (United States).</b> TWA: 25 ppm 8 hour(s).
1,3,5-Triazine-2,4,6-triamine, polymer with formaldehyde, methylated	68002-20-0	5.45	Not available.	
2-Butoxyethanol	111-76-2	3.02	0.088 kPa (0.66 mm Hg) [20°C]	<b>ACGIH TLV (United States).</b> TWA: 20 ppm 8 hour(s). <b>OSHA PEL (United States).</b> <b>Absorbed through skin.</b> TWA: 50 ppm 8 hour(s).
Silicon dioxide	7631-86-9	2.72	Not available.	<b>ACGIH TLV (United States).</b> TWA: 10 mg/m <sup>3</sup> 8 hour(s). <b>OSHA PEL (United States).</b> TWA: 80 mg/m <sup>3</sup> 8 hour(s).
n-butanol	71-36-3	2.09	0.73 kPa (5.5 mm Hg) [20°C]	<b>ACGIH TLV (United States).</b> TWA: 20 ppm 8 hour(s). <b>OSHA PEL (United States).</b> TWA: 100 ppm 8 hour(s).
n-Butyl acetate	123-86-4	1.93	1.3 kPa (10 mm Hg) [20°C]	<b>ACGIH TLV (United States).</b> TWA: 150 ppm 8 hour(s). STEL: 200 ppm 15 minute(s). <b>OSHA PEL (United States).</b> TWA: 150 ppm 8 hour(s).
aluminium hydroxide	21645-51-2	1.21	Not available.	<b>ACGIH TLV (United States).</b> TWA: 1 mg/m <sup>3</sup> 8 hour(s).

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

## 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- Eye contact** : Get medical attention immediately if symptoms occur. Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
- Skin contact** : Get medical attention immediately if symptoms occur. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Get medical attention immediately if symptoms occur. Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

## 5. Fire-fighting measures

- Flammability of the product** : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Flash point** : Closed cup: 36°C (96.8°F)
- Flammable limits** : Lower: 0.7%  
Upper: 11.3%
- Extinguishing media**
- Suitable** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides  
metal oxide/oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.  
  
UNUSUAL FIRE HAZARDS: During emergency conditions, overexposure to products of combustion may cause a health hazard; symptoms may not be immediately apparent. Obtain medical attention.
- Special remarks on fire hazards** : Not available.
- Special remarks on explosion hazards** : Not available.

## 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flames, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

## 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not enter confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## 8. Exposure controls/personal protection

- Engineering measures** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Personal protection** : Selection of personal protective equipment (PPE) is to be established by the employer performing a PPE hazard assessment. In the U.S.A, OSHA requires completion of a documented PPE hazard assessment as described in 29 CFR 1910.132.



## 8. Exposure controls/personal protection

<b>Respiratory</b>	<ul style="list-style-type: none"><li>: Use properly fitted respiratory protection complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.</li></ul> <p>Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.</p>
<b>Hands</b>	<ul style="list-style-type: none"><li>: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.</li></ul>
<b>Eyes</b>	<ul style="list-style-type: none"><li>: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.</li></ul>
<b>Skin</b>	<ul style="list-style-type: none"><li>: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.</li></ul>
<b>Other protection</b>	<ul style="list-style-type: none"><li>: Not available.</li></ul>

## 9. Physical and chemical properties

<b>Physical state</b>	: Liquid.
<b>Burning time</b>	: Not applicable.
<b>Burning rate</b>	: Not applicable.
<b>Color</b>	: Not available.
<b>Odor</b>	: Not available.
<b>Taste</b>	: Not available.
<b>Molecular weight</b>	: Not applicable.
<b>Molecular formula</b>	: Not applicable.
<b>pH</b>	: Not available.
<b>Boiling/condensation point</b>	: 116.11 to 171.11°C (241 to 340°F)
<b>Melting/freezing point</b>	: Not available.
<b>Critical temperature</b>	: Not available.
<b>Relative density</b>	: 1.456
<b>Vapor density</b>	: Heavier than air
<b>Volatility</b>	: 28.35% (w/w)
<b>Odor threshold</b>	: Not available.
<b>Evaporation rate</b>	: Highest known value: 1 (n-Butyl acetate) compared with butyl acetate
<b>Viscosity</b>	: Not available.
<b>Ionicity (in water)</b>	: Not available.
<b>Dispersibility properties</b>	: Not available.
<b>Solubility</b>	: Not available.



## 10. Stability and reactivity

<b>Chemical stability</b>	: The product is stable, under normal conditions of storage and use.
<b>Hazardous polymerization</b>	: Will not undergo hazardous polymerization.
<b>Conditions to avoid</b>	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Other Conditions to avoid: light, drying out,
<b>Materials to avoid</b>	: Reactive or incompatible with the following materials: oxidizing materials, metals, acids and alkalis.
<b>Hazardous decomposition products</b>	: Not available.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.

## 11. Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-Butoxyethanol	LD50 Dermal	Rabbit	220 mg/kg	-
	LD50 Oral	Rat	250 mg/kg	-
	LC50 Inhalation Vapor	Rat	450 ppm	4 hours
1,2,4-trimethylbenzene	LD50 Oral	Rat	5000 mg/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m <sup>3</sup>	4 hours
n-Butyl acetate	LD50 Oral	Rat	10768 mg/kg	-
	LC50 Inhalation Vapor	Rat	390 ppm	4 hours
n-butanol	LD50 Dermal	Rabbit	3400 mg/kg	-
	LD50 Oral	Rat	790 mg/kg	-
	LC50 Inhalation Vapor	Rat	8000 ppm	4 hours
Silicon dioxide	LD50 Dermal	Rabbit	7500 mg/kg	-
	LD50 Oral	Rat	3160 mg/kg	-
1,3,5-Triazine-2,4,6-triamine, polymer with formaldehyde, methylated	LD50 Oral	Rat	12300 mg/kg	-

### Carcinogenicity

Product/ingredient name	IARC	NTP	OSHA
Titanium dioxide	2B	-	-

This product under certain conditions could release formaldehyde in sufficient quantities to require monitoring under OSHA regulations. Formaldehyde is a known carcinogen.

IARC has issued a notice that they will publish a monograph that lists titanium dioxide (TiO<sub>2</sub>) as possibly carcinogenic to humans (Group 2B) by inhalation (based solely on animal data). Human epidemiology studies do not suggest an increased risk of cancer in humans for occupational exposure to titanium dioxide. According to the IARC summary on titanium dioxide, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as paint."

### Mutagenicity

Product/ingredient name	Test	Experiment	Result
Not available.			

### Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

## 12. Ecological information

Data available upon request.





## 13. Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

## 14. Transport information

Note: Information contained in this section may vary from the actual shipping description depending on quantity in containers, mode of shipment and use of exemptions.

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	UN1263	Paint	3	III		RQ: 13956.1lbs (6329.31kgs) [xylene]
<b>TDG Classification</b>	UN1263	Paint	3	III		-
<b>IMDG Class</b>	UN1263	Paint	3	III		-
<b>IATA-DGR Class</b>	UN1263	Paint	3	III		-

PG\* : Packing group

## 15. Regulatory information

### United States

**U.S. Federal regulations** : **United States inventory (TSCA 8b)** : All components are listed or exempted. (HAPS) **Clean Air Act (CAA) 112 regulated toxic substances:** xylene; Cumene; Methanol; formaldehyde; ethanediol; ethylbenzene; Toluene; Naphthalene; 2-(2-butoxyethoxy)ethyl acetate; Chrome antimony titanium buff rutile

### SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
<b>Form R - Reporting requirements</b>	1,2,4-trimethylbenzene	95-63-6	6.53
	2-Butoxyethanol	111-76-2	3.02
	n-butanol	71-36-3	2.09

## 15. Regulatory information

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

**WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>	<u>No significant risk level</u>	<u>Maximum acceptable dosage level</u>
Cumene	Yes.	No.	No.	No.
Naphthalene	Yes.	No.	No.	No.
ethylbenzene	Yes.	No.	No.	No.
formaldehyde	Yes.	No.	No.	No.
Carbon black	Yes.	No.	No.	No.
Toluene	No.	Yes.	No.	No.

### Canada

**Canada inventory** : All components of this product are on the CEPA DSL inventory.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### International regulations

**International lists** : **Australia inventory (AICS):** Not determined.  
**China inventory (IECSC):** Not determined.  
**Japan inventory:** Not determined.  
**Korea inventory:** Not determined.  
**New Zealand Inventory of Chemicals (NZIoC):** Not determined.  
**Philippines inventory (PICCS):** Not determined.

\*\* All values in this section reported as percentage by weight, unless otherwise specified.

## 16. Other information

**HMIS III ® Hazardous** :  
**Material Information System**  
**(U.S.A.)**

Health	*	2
Flammability		3
Physical hazards		0
Personal protection		

**Caution:** HMIS III ® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risk, and 4 representing severe hazards or risk. Although HMIS III ® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS III ® ratings are to be used with a fully implemented HMIS III ® program. HMIS III ® is a registered mark of the National Paint & Coatings Association (NPCA).

The customer is responsible for determining the PPE code for this material.

**Other special considerations** : Not available.

### Notice to reader

**IMPORTANT NOTE** The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any

## 16. Other information

liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

Brand names mentioned in this data sheet are trademarks of or are licensed to Akzo Nobel.



# MATERIAL SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Cold Rolled Galvanized

**Manufacturer Name:**

Steel Dynamics, Inc.

Flat Roll Division

4500 County Road 59

Butler, IN 46721

Telephone: (260)-868-8000

**Emergency Telephone:**

(800)-424-9300

**Intended Use:** Steel Fabricated Parts

**Contact Person:** Safety Department

## 2 HAZARDS IDENTIFICATION

**Emergency Overview**

**Physical State:** Solid

**Color:** Metallic gray

**Odor:** None

In its manufactured and shipped state, this product is considered non-hazardous. Processing may generate hazardous fumes and dusts.

**Potential Health Effects**

**Inhalation:** No inhalation hazard under normal conditions. Welding, burning, sawing, brazing, grinding or machining operations may generate fumes and dusts of metal oxides. High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Fumes released during processing of mineral oil treated steel surface may cause irritation to the respiratory system.

**Eye Contact:** Under normal conditions of intended use, this material does not pose a risk to health. Contact with hot material can cause thermal burns which may result in permanent damage. Grinding and sanding this product may generate dust. Dust may irritate the eyes. Exposed may experience eye tearing, redness, and discomfort.

**Skin Contact:** Under normal conditions of intended use, this material does not pose a risk to health. Dust may irritate skin. Oil coating may cause temporary irritation to skin. May dry the skin leading to discomfort and dermatitis. Skin contact may aggravate an existing dermatitis. Contact with hot material can cause thermal burns which may result in permanent damage.

**Ingestion:** Solid steel: Not relevant, due to the form of the product. However, ingestion of dusts generated during working operations may cause nausea and vomiting.

**Chronic Health Effects:** Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. Contains nickel. May cause sensitization by skin contact. Nickel is

listed by IARC (Group 2B) and NTP. Vanadium pentoxide is classified as possibly carcinogenic to humans (Group 2B) by IARC, may cause adverse reproductive effects and may adversely affect the developing fetus. A residual chrome VI compound from the surface coating is water soluble and is carcinogenic. Chromium VI compounds are regarded as human carcinogens by IARC, NTP, OSHA and ACGIH. Exposure to manganese fume/dust can affect the central nervous system (apathy, drowsiness, weakness and other chronic symptoms such as postural tremors). These ingredients are bound within the product and release is not expected under normal conditions.

**Target Organ(s):** | Lung | Skin.

**Potential Physical / Chemical Effects:** The dangerous properties of the product are considered limited.

**OSHA Regulatory Status:** Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200.

**Environment:** The environmental hazard of the product is considered to be limited.

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

**General Information:** The product is an alloy. May liberate hazardous oxides such as iron oxides and vanadium pentoxide at temperatures above the melting point. The surface is galvanized with zinc. The surface may be passivated with chromic acid leaving residual coating of chrome III and VI compounds. The steel is treated with mineral oil.

Chemical Name	CAS-No.	Concentration*
Iron	7439-89-6	90 - 100%
†Manganese	7439-96-5	0 - 2%
†Chromium	7440-47-3	0 - 1%
†Iron oxide**	1309-37-1	0%
†Silicon	7440-21-3	0 - 1%
†Vanadium pentoxide**	1314-62-1	0%
†Zinc oxide**	1314-13-2	0%
†Nickel	7440-02-0	0 - 0.4%
Vanadium	7440-62-2	0 - 0.2%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

† This chemical is hazardous according to OSHA/WHMIS criteria.

\*\*Iron oxide and vanadium pentoxide are formed at temperatures above the melting point. \*\*Zinc oxide fumes may be formed during burning, cutting, or welding.

### 4 FIRST AID MEASURES

**Inhalation:** In case of inhalation of dusts or fumes from heated product: Move into fresh air and keep at rest. Get medical attention if symptoms persist. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration.

**Eye Contact:** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention promptly if symptoms occur after washing.

**Skin Contact:** Wash skin with soap and water. In case of burns with hot metal, rinse with plenty of cold water. If burns are severe, consult a physician. If skin irritation or an allergic skin reaction develops, get medical attention.

**Ingestion:** Solid steel: Not Applicable    **Dust:** Get medical attention if any discomfort continues.

<b>5</b>	<b>FIRE-FIGHTING MEASURES</b>
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**Extinguishing Media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable Extinguishing Media:** Not applicable.

**Special Fire Fighting Procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual Fire & Explosion Hazards:** No unusual fire or explosion hazards noted.

**Hazardous Combustion Products:** Acrid fumes

**Protective Measures:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Flammability Class:** NFPA Rating Fire = 0.

<b>6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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**Personal Precautions:** Cold solid metal: No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the MSDS for additional personal protection advice when handling this product. Hot metal: Avoid contact with hot material. Wear protective clothing as described in Section 8 of this safety data sheet.

**Spill Cleanup Methods:** Collect for recycling.

**Environmental Precautions:** No specific precautions.

**Notification Procedures:** In the event of accidental release, notify relevant authorities in accordance with all applicable regulations.

<b>7</b>	<b>HANDLING AND STORAGE</b>
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**Handling:** Oil coating can make material slippery. Avoid contact with sharp edges and hot surfaces. Use appropriate gloves and tools to ensure a safe handling. Use work methods which minimize dust/fume production. Do not breathe fumes and dusts. Observe safety measures suited to the coating(s) when handling, cutting or melting. Follow the recommendations in ANSI Z49.1, Safety in welding and cutting (ANSI=American National Standard Institute).

**Storage:** Store in a dry place. Store away from: Acids. Oxidizing agents.

<b>8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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**Exposure Limits:**

Chemical Name	Source	Type	Exposure Limits	Notes
Chromium	ACGIH	TWA	0.5 mg/m <sup>3</sup>	as Cr

Chromium	NIOSH Guide	IDLH	250 mg/m <sup>3</sup>	
Chromium	US. OSHA Table Z-1	TWA	1 mg/m <sup>3</sup>	as Cr
Iron oxide** (Respirable fraction.)	ACGIH	TWA	5 mg/m <sup>3</sup>	as Fe
Iron oxide**	NIOSH Guide	IDLH	2500 mg/m <sup>3</sup>	as Fe
Iron oxide** (Fume.)	US. OSHA Table Z-1	TWA	10 mg/m <sup>3</sup>	
Manganese	ACGIH	TWA	0.2 mg/m <sup>3</sup>	as Mn
Manganese	NIOSH Guide	IDLH	500 mg/m <sup>3</sup>	as Mn
Manganese (Fume.)	US. OSHA Table Z-1	Ceiling	5 mg/m <sup>3</sup>	as Mn
Nickel (Inhalable fraction.)	ACGIH	TWA	1.5 mg/m <sup>3</sup>	as Ni
Nickel	NIOSH Guide	IDLH	10 mg/m <sup>3</sup>	as Ni
Nickel	US. OSHA Table Z-1	TWA	1 mg/m <sup>3</sup>	as Ni
Silicon	ACGIH	TWA	10 mg/m <sup>3</sup>	
Silicon (Respirable fraction.)	US. OSHA Table Z-1	TWA	5 mg/m <sup>3</sup>	
Silicon (Total dust.)	US. OSHA Table Z-1	TWA	15 mg/m <sup>3</sup>	
Vanadium pentoxide** (Respirable fraction.)	ACGIH	TWA	0.05 mg/m <sup>3</sup>	as V <sub>2</sub> O <sub>5</sub>
Vanadium pentoxide**	NIOSH Guide	IDLH	35 mg/m <sup>3</sup>	as V <sub>2</sub> O <sub>5</sub>
Vanadium pentoxide** (Fume.)	US. OSHA Table Z-1	Ceiling	0.1 mg/m <sup>3</sup>	as V <sub>2</sub> O <sub>5</sub>
Zinc oxide** (Respirable fraction.)	ACGIH	STEL	10 mg/m <sup>3</sup>	
Zinc oxide** (Respirable fraction.)	ACGIH	TWA	2 mg/m <sup>3</sup>	
Zinc oxide**	NIOSH Guide	IDLH	500 mg/m <sup>3</sup>	
Zinc oxide** (Fume.)	US. OSHA Table Z-1	TWA	5 mg/m <sup>3</sup>	
Zinc oxide** (Respirable fraction.)	US. OSHA Table Z-1	TWA	5 mg/m <sup>3</sup>	

\*\*Iron oxide and vanadium pentoxide are formed at temperatures above the melting point. \*\*Zinc oxide fumes may be formed during burning, cutting, or welding.

**Engineering Controls:** Adequate ventilation should be provided so that exposure limits are not exceeded. Use local exhaust when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

**Respiratory Protection:** Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

**Eye Protection:** Use of safety glasses or goggles is required for welding, burning, sawing, brazing, grinding or machining operations. In addition to safety glasses or goggles, a welding helmet with appropriate shaded shield is required during welding, burning, or brazing. A face shield is recommended, in addition to safety glasses or goggles, during sawing, grinding, or machining.

**Hand Protection:** Wear protective gloves. When material is heated, wear gloves to protect against thermal burns. While handling product and/or steel packing material wear cut resistant gloves and sleeves for laceration protection.



**Skin Protection:** Wear suitable protective clothing. Thermally protective apron or coat with long sleeves are recommended when the volume of hot material is significant.

**Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

**Environmental Exposure Controls:** Environmental manager must be informed of all major releases.

**9****PHYSICAL AND CHEMICAL PROPERTIES**

**Color:** Metallic gray

**Odor:** None

**Odor Threshold:** Not applicable.

**Physical State:** Solid

**pH:** Not applicable

**Melting Point:** 1510°C (2750°F)

**Freezing Point:** Not applicable.

**Boiling Point:** Not applicable.

**Flash Point:** Not applicable.

**Evaporation Rate:** Not applicable.

**Flammability Limit - Upper (%):** Not applicable.

**Flammability Limit - Lower (%):** Not applicable.

**Vapor Pressure:** Not applicable.

**Vapor Density (Air=1):** Not applicable.

**Specific Gravity:** No data available.

**Solubility in Water:** Not applicable

**Solubility (Other):** No data available.

**Partition Coefficient (n-Octanol/water):** Not applicable.

**Autoignition Temperature:** Not applicable.

**Decomposition Temperature:** No data available.

**10****STABILITY AND REACTIVITY**

**Stability:** This product is stable under expected conditions of use.

**Conditions to Avoid:** Avoid contact with acids and oxidizing substances.

**Incompatible Materials:** Strong Acids. Oxidizing agents.

**Hazardous Decomposition Products:**

At Elevated Temperatures:	Acrid fumes, Metal oxides
Strong Acid Contact:	Hydrogen

**Possibility of Hazardous Reactions:** Will not occur.

**11****TOXICOLOGICAL INFORMATION****Specified Substance(s)**

**Acute Toxicity:**

Component Chemical Name	Test Results
Manganese	Oral LD50 (Rat): 9 g/kg
Silicon	Oral LD50 (Rat): 3160 mg/kg

**Other Acute:** Mineral oil: Prolonged or repeated contact with skin may cause redness, itching, irritation, eczema/chapping and oil acne. High concentration: Repeated and prolonged overexposure to oil mists may result in droplet deposition, oil granuloma formation, inflammation and increased incidence of infection in the respiratory tract. High concentrations of freshly-formed fumes of zinc oxide can produce symptoms of metal fume fever.

**Chronic Toxicity:** Contains nickel. May cause sensitization by skin contact. Nickel is listed by IARC (Group 2B) and NTP. Vanadium pentoxide is classified as possibly carcinogenic to humans (Group 2B) by IARC, may cause adverse reproductive effects and may adversely affect the developing fetus. A residual chrome VI compound from the surface coating is water soluble and is carcinogenic. Chromium VI compounds are regarded as human carcinogens by IARC, NTP, OSHA and ACGIH. Exposure to manganese fume/dust can affect the central nervous system (apathy, drowsiness, weakness and other chronic symptoms such as postural tremors).

**Listed Carcinogens:**

Chemical Name	IARC	NTP	OSHA	ACGIH
Nickel	2B	Listed	Not Listed	A5
Chromium	3	Not Listed	Not Listed	A4
Iron oxide**	3	Not Listed	Not Listed	A4
Vanadium pentoxide**	2B	Not Listed	Not Listed	A4

IARC: 1 = Carcinogenic to Humans; 2A = Probably Carcinogenic to Humans; 2B = Possibly Carcinogenic to Humans; 3 = Not classifiable as to carcinogenicity to humans; 4 = Probably not carcinogenic to humans; Not listed = Not evaluated by IARC.

ACGIH: A1 = Confirmed Human Carcinogen; A2 = Suspected Human Carcinogen; A3 = Confirmed Animal Carcinogen; A4 = Not classifiable as a human carcinogen; A5 = Not suspected to be a human carcinogen; Not listed = Not evaluated by ACGIH.

**Product Information**

**Other Acute:** High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Inhalation of dust (generated at high temperatures only) or oil mist from this product may cause mild irritation of the upper respiratory tract. Prolonged contact may cause redness, irritation and cracking.

**Chronic Toxicity:** Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. The product contains a small amount of sensitizing substance which may provoke an allergic reaction among sensitive individuals in contact with skin. The ingredients of the alloy are bound within the product and release is not expected under normal conditions.

**12****ECOLOGICAL INFORMATION**

**Ecotoxicity:** No data available.

**Mobility:** Not relevant, due to the form of the product.

**Persistence and Degradability:** No data available.

**Bioaccumulation Potential:** No data available on bioaccumulation.

**Other Adverse Effects:** None known.

<b>13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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**General Information:** Dispose waste and residues in accordance with applicable federal, state, and local regulations.

**Disposal Methods:** Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Recover and reclaim or recycle, if practical.

**Container:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

<b>14</b>	<b>TRANSPORT INFORMATION</b>
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**DOT** Not Regulated

**TDG** Not Regulated

**IATA** Not Regulated

**IMDG** Not Regulated

<b>15</b>	<b>REGULATORY INFORMATION</b>
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**Canadian Controlled Products Regulations:** This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

**WHMIS Classification:** D2A

**Inventory Status**

**This product or all components are listed on the following inventory:** DSL, TSCA

**US Regulations**

**CERCLA Hazardous Substance List (40 CFR 302.4):**

Chemical Name	RQ
Vanadium pentoxide**	1000 lbs

**SARA Title III**

**Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A):**

Chemical Name	RQ	TPQ
Vanadium pentoxide**	1000 lbs	

**Section 311/312 (40 CFR 370):**

☐ Acute (Immediate)    ☒ Chronic (Delayed)    ☐ Fire    ☐ Reactive    ☐ Pressure Generating

**Section 313 Toxic Release Inventory (40 CFR 372):**

Chemical Name	CAS-No.	Concentration
Zinc oxide**	1314-13-2	0%
Vanadium pentoxide**	1314-62-1	0%
Manganese	7439-96-5	0 - 2%
Nickel	7440-02-0	0 - 0.4%
Chromium	7440-47-3	0 - 1%

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):** None

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):** Vanadium pentoxide\*\*

**Drug Enforcement Act:** None

**TSCA:** No component is listed on TSCA Sections 4(a), 5(a)(2), 5(e) or 12(b).

**State Regulations**

**California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** Nickel; Vanadium pentoxide\*\*

**Massachusetts Right-To-Know List:** Chromium; Iron oxide\*\*; Manganese; Nickel; Vanadium pentoxide\*\*; Zinc oxide\*\*

**Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)):** None

**Minnesota Hazardous Substances List:** Chromium; Iron oxide\*\*; Manganese; Nickel; Vanadium pentoxide\*\*; Zinc oxide\*\*

**New Jersey Right-To-Know List:** Chromium; Iron oxide\*\*; Manganese; Nickel; Vanadium pentoxide\*\*; Zinc oxide\*\*

**Pennsylvania Right-To-Know List:** Chromium; Iron oxide\*\*; Manganese; Nickel; Vanadium pentoxide\*\*; Zinc oxide\*\*

**Rhode Island Right-To-Know List:** Chromium; Iron oxide\*\*; Manganese; Nickel; Vanadium pentoxide\*\*; Zinc oxide\*\*

<b>16</b>	<b>OTHER INFORMATION</b>
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**HAZARD RATINGS**

	Health Hazard	Fire Hazard	Reactivity Hazard	Special Hazard
<b>NFPA</b>	0	0	0	0

	Health Hazard	Fire Hazard	Reactivity Hazard	Personal Protection
<b>HMIS</b>	2*	0	0	X

0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe \*- Chronic Health Effect

X - Specialized Handling

**Issue Date:** 02-Mar-2007

**Supersedes Date:**

**SDS No.:** 1004401

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment. MSDS's for specific coatings are available upon request.