

applicator training manual

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MOISTURE

d r a i n a g e

— moisture drainage MD eifs system



888.702.9915 totalwall.com

A comprehensive guide to assist in
the proper installation of Total Wall
Class MD Moisture Drainage EIFS
Wall Cladding System.

TOTAL WALL

Welcome To TOTAL WALL

TOTAL WALL is a leading national manufacturer of EIFS and Stucco products centrally located in Wisconsin. TOTAL WALL is a manufacturer of building products for use on homes and commercial buildings. Our products include Interior and Exterior Finishes, Stucco, Coatings, Panels, Sealers, and Exterior Insulation and Finish Systems (EIFS). Our product history dates back over 28 successful years.

We are members of the Northwest Walls and Ceilings Bureau (NWCB), Association of the Walls and Ceilings Industries (AWCI), the American Society for Testing and Materials (ASTM), the Indoor Air Quality Association (IAQA), and the Exterior Design Institute (EDI). Our wall systems and products have been tested by certified testing laboratories, and we have systems that comply with all major model codes including The BOCA National Building Code, the Standard Building Code, the Uniform Building Code, the International Building Code, and the International Residential Code. We hold ICC-ES Report Numbers NER-646 and ER-5245.

Our philosophy is to provide quality, attractive products that are simple to install and show a profit to our customers. Because TOTAL WALL product systems insulate, protect, and beautify any building, they show a return on investment. Building owners save money in energy costs, reduced property maintenance, and increased property utility and resale value.

Our customer service technical support team consists of competent, helpful, and resourceful individuals who are committed to customer service. Our management is committed to being responsive and striving to maintain a personal feeling and attention, backed with high quality products. For comments, questions, or orders we are always happy to hear from you. Our customer service / technical support number is toll-free 888-702-9915.

Thank You,

TOTAL WALL, INC.

PREFACE: Using This Installation Guide

This installation guide is a comprehensive handbook to assist you with the selection and application of TOTAL WALL Class MD Exterior Insulated and Finish Systems (EIFS). This guide is formatted into sections covering topics from the concept of EIFS, the components of EIFS, through the installation of the Class MD specific system. Numerous drawings and diagrams are used in each section to help clarify and assist in the explanation of the steps involved. Please use the table of contents to locate the specific information you wish to review. For clarification on technical terms, please refer to the glossary in the appendix.

Please keep in mind that this guide is designed to aid you in understanding the principles and application of EIFS. It is designed to support and not replace applicator training. This guide is not a substitute for on the job training or applicator certification seminar programs. Further, this guide is not a substitute for job specifications, materials specifications or job drawings. As always, if you have any questions call us at 888-702-9915 for assistance.

If you are unfamiliar with EIFS, we suggest that you read through The EIFS Concept in Part 2 of this guide to help with familiarization. If you are considering applying EIFS for the first time, you must attend and pass an approved EIFS training seminar or education program in order to be qualified to purchase product and be eligible for a materials warranty. As part of your training, your first field application may be closely monitored and corrected where necessary. A training seminar combined with your actual field application will give you the opportunity to do all the steps in a Class MD application. During the training class, you will be able to ask questions and learn some of the techniques used in a professional application. Additionally, you will learn how to use architectural enhancements and learn the vital points of proper trim and sealant application. Welcome to the growing TOTAL WALL family.

TOTAL WALL
Exterior Insulation and Finish Systems (EIFS)
Applicator Certification Guide
Class MD Moisture Drainage Systems

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chapter

1

an overview of EIFS

The History of the Moisture Drainage System.

System Types: Class PB, PM, MD, PI, DA, ICF

The EIFS Concept

EIFS Moisture Drainage History

1969 Exterior Insulated and Finish Systems were introduced into the North American market.

1977 Multiple manufacturers entered the EIFS market.

1980s EIFS market share grew rapidly in commercial and residential use.

1995 A preliminary NAHB study found moisture damage in the walls of homes in Wilmington, NC.

1996 The first building codes were enacted that require MD Class EIFS be used on residential construction clad with moisture sensitive sheathing.

1997 EIFS Manufacturers develop and actively market Class MD EIFS.

1998 BOCA drafts Model Code requiring 3rd party inspection on Barrier Class PB EIFS but not on MD EIFS.

1999 ICBO forces mandatory revision of code reports to require Class MD EIFS on residential construction

2000 The International Residential Code and International Building Code under the ICC required MD Class EIFS to be used on residential construction clad with moisture sensitive sheathing.

2001 New Class MD Systems using flat EPS foam board and corrugated house wrap become popular.

2003 MD systems continue to evolve offering liquid-applied moisture barrier option allowing adhered EPS (expanded polystyrene) in addition to mechanically fastened EPS over sheet-applied moisture

AN OVERVIEW OF "TYPICAL" SYSTEM TYPES AND COMPONENTS

CATEGORY	SOFT COAT PB	HARD COAT PM	POLYISO PI "QUICK R"	DIRECT APPLIED DA (Defs)	MOISTURE DRAINAGE MD	ICF Insulated Concrete Form
ADHESIVE	YES	OPTIONAL	OPTIONAL	NO	NO	NO
MECHANICAL FASTENERS	OPTIONAL	YES	YES	NO	optional	NO
RIGID FOAM INSULATION	EPS EXPANDED POLYSTYRENE	XPS EXTRUDED POLYSTYRENE	POLYISO CYANURATE	NONE	EPS	EPS SUBSTRATE
REINFORCING MESH	4 OZ STANDARD OR HIGHER	HARD COAT MESH	4 OUNCE STANDARD	* JOINT MESH OR FULL MESH	STANDARD 4 OZ MESH	STANDARD 4 OZ MESH
BASECOAT	SOFT COAT BASECOAT	HARD COAT BASECOAT	SOFT COAT BASECOAT	SOFT COAT BASECOAT	SOFT COAT BASECOAT	SOFT COAT OR HARD COAT
SYNTHETIC FINISH COAT	YES	OPTIONAL	YES	YES	YES	YES
STARTER TRAC	NO	YES	OPTIONAL	OPTIONAL	OPTIONAL	NO
TRIM ACCESSORIES	OPTIONAL	YES	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
MOISTURE BARRIER	NO	OPTIONAL	NO	OPTIONAL BEHIND SUBSTRATE	YES	NO
DRAINAGE MAT OR VENTS	NO	NO	NO	NO	YES	NO
CONTROL JOINTS	NO	YES	NO	NO	NO	NO
ISOLATION JOINTS	YES	YES	YES	YES	YES	YES
EXPANSION JOINTS	YES	YES	YES	YES	YES	YES

THIS CHART IS FOR INSTRUCTIONAL PURPOSES ONLY. MANUFACTURER SYSTEM COMPONENTS WILL VARY.

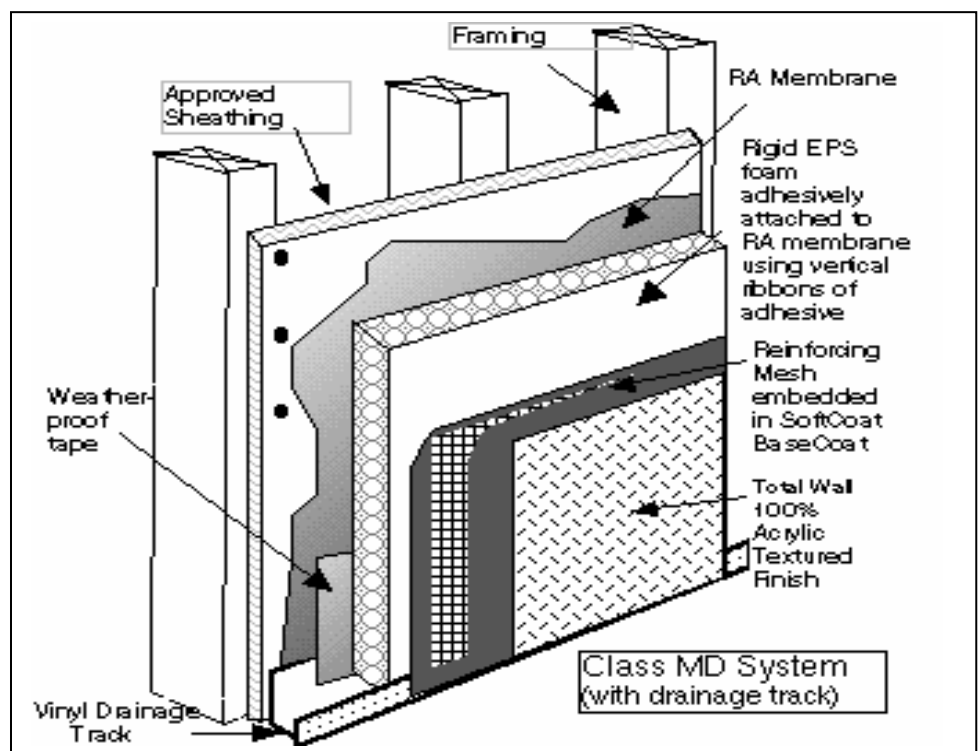
CONSULT MANUFACTURER SPECIFICATIONS AND DETAILS FOR ACTUAL SYSTEM DESIGN.

THE CONCEPT OF MOISTURE DRAINAGE CLASS MD EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

The principle of Class MD EIFS is the attachment of a multilayered, non-bearing cladding to the outside wall of a building. Class MD EIFS is a weatherproof cladding which incorporates a second line of defense in case water gets into the system. The second line of defense is a drainage plane which allows water to safely exit the wall system. Beginning at the inner most layer of the Class MD EIFS and working outward, the basic system contains the following layers:

- 1.a moisture barrier layer over the exterior wall sheathing or approved substrate,
- 2.a drainage plane to allow incidental water to escape,
- 3.a layer of rigid insulation foam board,
- 4.a layer of polymer modified Portland cement reinforced with fiberglass mesh, and
- 5.a textured synthetic finish coat.

The diagram to the right is an example of a moisture drainage system using a roller-applied moisture barrier. Vertical ribbons of adhesive create the drainage plane between the moisture barrier and the rigid foam insulation.



In the above illustration, base coat adhesive applied in vertical ribbons is used to attach the rigid foam to the substrate. If sheet-applied moisture barrier is used, such as Tyvek StuccoWrap, mechanical fasteners are required to attach the system to the substrate. Accessory materials, such as a water drainage starter track, flashings, and water proofing

tape, are typically employed in the assembly. Finally, a properly installed approved caulk sealant is required for proper performance of this cladding system.

The advantages of insulating and finishing the building exterior by the EIF cladding system are numerous and substantial. Here are some of the benefits:

- 1) Insulating a building on the outside surface takes advantage of the “mass effect” of the building interior. This protects the building interior from rapid outside temperature changes and allows smaller heating or air conditioning units to adequately service the building. This ultimately saves money in energy and equipment.
- 2) Insulating a building on the outside surface moves the dew point toward the outside of the wall system. This greatly reduces condensation problems in many US regions.
- 3) The operation of the building interior is not disturbed during installation of EIFS.
- 4) The exterior of the building is finished with a new attractive finish and texture which increases the value, appeal and character of the building.
- 5) Architectural enhancements and improvements can easily be made to the structure during the EIFS installation.
- 6) The savings in energy costs by virtue of the additional insulation will often pay for the cost of the EIF System over time.
- 7) The square footage of interior space is not reduced by the installation of EIFS.

There are a number of organizations that are involved in the safety and performance of EIF Systems. The EIFS manufacturers are guided by a number of important member body organizations. One such organization is EIMA (Exterior Insulation Members Association) where EIFS industry members can work on key issues as a collective group. EIMA publishes guidelines and other literature which serves to benefit the entire industry. Other organizations very involved in training and instruction are AWCI (Association of the Walls and Ceilings Industries), EDI (Exterior Design Institute), and NWCB (Northwest Walls and Ceilings Bureau). Another important organization is ASTM (American Society for Testing and Material), which publishes standards for materials and systems performance. Installation of EIFS is regulated by major model code bodies including ICBO, BOCA, SBCCI, and the ICC when these codes are adopted by local jurisdictions. Total Wall has active evaluation report listings recognized by the above listed code bodies. We have passed many tests on our EIFS products covering fire resistance, wind load, impact resistance, and weathering studies. In addition to testing, all details of system construction, material specifications and application procedures must be thoroughly documented and approved. Finally, TOTAL

WALL requires that an applicator be qualified before for the application to be eligible for a warranty. Total Wall reserves the right to use EIFS inspectors to monitor any Total Wall product application. More building codes require the use of a third party inspector. More frequently, an inspector may be required as a condition of warranty or a condition of liability insurance.

There are six basic types of EIF Systems. The chart on page 6 can be used to compare the various similarities and differences between the different systems. This certification guide will focus on the Moisture Drainage Class MD EIF System.

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2

system components

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Rigid Insulation Board

Rigid insulation board in EIFS is of two primary chemical types. Those types are:

Polyisocyanurate rigid boards are also known as polyiso board and as Quick-R from Celotex or Stucco Shield II from Atlas by brand names. Polyiso board is used in Class PI EIFS.

Polystyrene rigid boards. All polystyrene rigid insulation board used for EIFS must be fire retardant treated and have a flame spread index (FSI) of less than 25 and a smoke development index (SDI) of less than 450 when tested in accordance with ASTM E-84.

Expanded Polystyrene (EPS) is used in Class MD EIFS. It is made by expanding and fusing polystyrene bead with pentane and steam. The expanded and fused beads form lightweight white rigid foam plastic. The foam plastic used for EIFS is cured for specified time to release trapped moisture. This creates a dimensionally stable EPS. The EPS used in EIFS must meet Type I requirements for ASTM C578 as follows:

1. Density 0.9 to 1.1 pound per cubic foot
2. R-value 3.8 per inch at 75 degrees F
3. Maximum 4% by weight water absorption
4. Minimum 10 psi to deform 10% in compression
5. Flexural strength 25 psi minimum
6. Maximum 5 perm-in. water vapor permeability.

Depending on the type of drainage plane being constructed, the EPS board maybe flat board or it may be grooved with drainage channels. If flat EPS board is used, Tyvek StuccoWrap or RainDrop HouseWrap is used as the sheet-applied moisture barrier layer. If liquid-applied moisture barrier is used, Total Stop RA, flat EPS board may be used because vertical ribbons of adhesive produce drainage channels to create the drainage plane.

If Grade D building paper or regular Tyvek HouseWrap is used as the moisture barrier, then a drainage plane must be constructed using grooved foam board or a spacer mater must be used, such as PVC UltraLath.

EPS is used in Class PB and MD EIFS. The EPS is white in color and is sometimes referred to as bead board. Typical board size 2' wide by 4' long and thicknesses range from 3/4 inch to 4 inch. EPS must be cured, dimensionally stable, flame-retardant treated and approved for use for EIFS and by TOTAL WALL and the applicable code body. EPS Board bundles should be properly labeled and identified.

Total Wall Reinforcing Meshes are woven from high quality bundled fiberglass strands which are coated with a protective, alkali-resistant polymer. Total Wall Reinforcing Meshes are designed to add strength, impact resistance, flexibility, and crack resistance to all Exterior Insulated and Finish Systems (EIFS) and Direct Applied coating systems. Total Wall Reinforcing Meshes are made for exceptional workability and ease of use. Total Wall Reinforcing Meshes are available in a range of strengths and weights to provide cost effective choices in application design.

Mesh Types and Uses

In all cases, the Total Wall Reinforcing Meshes are used in the Base Coat layer of lamina. The type of Reinforcing Mesh used and the number of layers of Reinforcing Mesh and Base Coat employed is determined by job factors such as the desired impact resistance of the wall, the type of system being installed and the various system details. Runs of Standard, Enhanced and Intermediate Meshes are lapped a minimum of 2.5". Runs of High and Ultra High Meshes are butted and then covered with a layer of Standard Mesh.

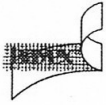
Soft Coat EIFS Reinforcing Meshes

1. Standard Mesh - this mesh is used on a majority of applications. This weight mesh is available in different width rolls for walls and in narrow width rolls for detail work. It is also available in a self-sticking version for special situations (see Coverages for a full listing of sizes). This mesh has a weight of ~ 4.3 ounces per yard, a thickness of 10.7 mils and a relative impact resistance of 25-35 in-lbs.
2. Enhanced Mesh - used to provide about 25% higher impact resistance relative to Standard Mesh. This mesh has a weight of ~ 6 ounces per yard, a thickness of 11.0 mils and a relative impact resistance of 35-45 in-lbs.
3. Intermediate Mesh - used to provide more than 200% impact resistance relative to Standard Mesh. This mesh has a weight of ~ 11 ounces per yard, a thickness of 19.0 mils and a relative impact resistance of 75-95 in-lbs.
4. High Impact Mesh - used to provide more than 600% higher impact resistance relative to Standard Mesh. This mesh has a weight of ~ 15 ounces per yard, a thickness of 26.0 mils and a relative impact resistance of 180-220 in-lbs.
5. Ultra High Impact Mesh - used to provide about 800% higher impact resistance relative to Standard Mesh. This mesh has a weight of ~ 20 ounces per yard, a thickness of 30.0 mils and a relative impact resistance of 230-240 in-lbs.

Coverage

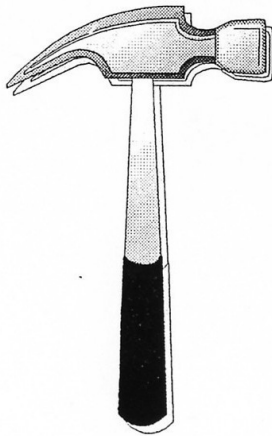
Standard Mesh (Also Available in self-stick)

Available Widths	38"	48"	76"	114"
Detail Widths	6"	7"	9.5"	12"
Roll Length	150 feet (all rolls of Standard)			
Enhanced Mesh	38" wide X 150' long			
Intermediate Mesh	38" wide X 75' long			
High Impact Mesh	38" wide X 75' long			
Ultra High Impact Mesh	38" wide X 75' long			



Typical Mesh Weights

Impact Ranges (Bayex Test Method)*



oz/yd²

inch-lbs.

▶ 4

25-35

Std. Impact

▶ 6

35-40

Std.
Impact..Enhanced

▶ 11

75-90

Intermediate Impact

▶ 15

180-220

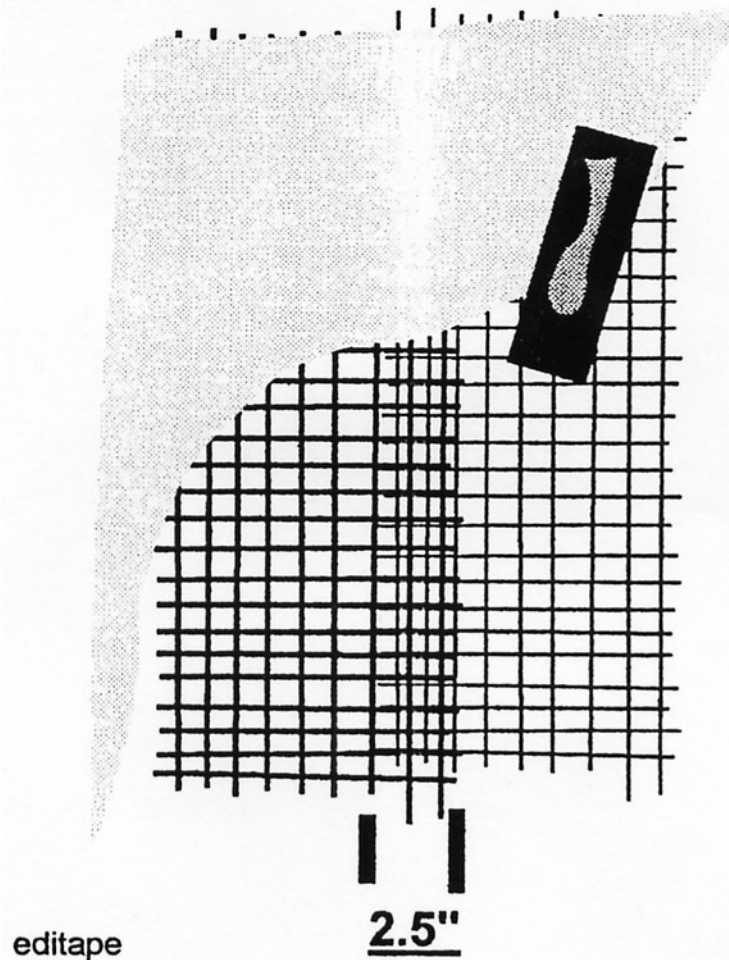
High Impact

▶ 20

230-240+ Ultra-High Impact

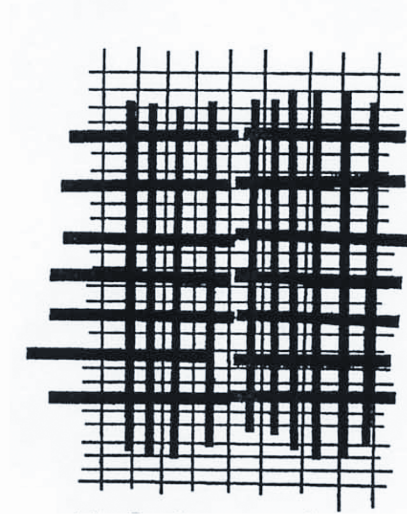
* Modified EIMA method...Gardner impact
Base coat only impact head.. 0.5in. semi spherical
with 1/8" flat on bottom

Seam Procedure For mesh ..11oz. & Lower



Overlap
Minimum of 2.5"

Seam Procedure For 15 & 20 Ounce High & Ultra High Impact Mesh

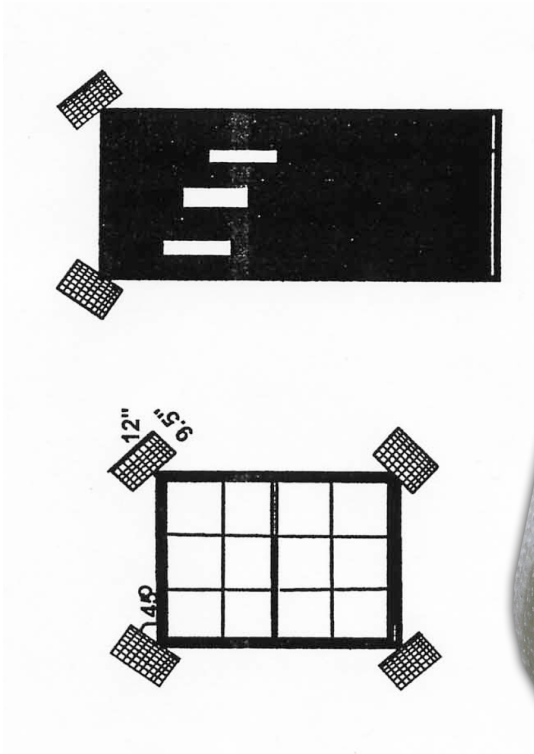


Butt Join and completely
cover with 4 Ounce Mesh

Total Wall High Impact Mesh (15 oz), and Ultra-High Impact Mesh (20 oz), are often specified for high pedestrian traffic areas, such as schools and shopping centers.

These heavier meshes are frequently used on the first six feet to ten feet of the ground floor level.

Use Of 9.5" Detail Mesh



The Total Wall 9.5" Detail Mesh can be used as an additional layer to the full system mesh that is already being used.

The purpose of the Total Wall 9.5" Detail Mesh is to transfer localized wall stresses over a larger area, and thereby reduce any incidence of cracking.

Approved Total Wall Class MD EIFS Sheet-Applied Moisture Barriers

If you are about to install a sheet-applied moisture barrier over exterior wall sheathing before you apply Class MD EIFS (Moisture Drainage class Exterior Insulated and Finish System), which material can you use?

Total Wall currently approves the following moisture barriers:

1. DuPont Tyvek StuccoWrap
2. DuPont Tyvek HouseWrap
3. Grade D Building Paper (15-lb and 30-minute minimum recommended)
4. RainDrop HouseWrap

The moisture barrier is installed directly over the exterior sheathing, for example Oriented Strand Board (OSB), using a staple gun. Avoid over-stapling by spacing the staples at 6" intervals. The runs of moisture barrier are lapped so that any moisture running down the wall will not get behind the moisture barrier. If a drainage track is being used, the moisture barrier is lapped over the back leg of the drainage track. Horizontal runs of moisture barrier are lapped a minimum of 2" and vertical seams are lapped a minimum of 6". When possible, all window and door openings should get the moisture barrier back-wrapped into openings before the window or door units are installed. It is recommended to seal the transition between the moisture barrier and window or door penetration using a waterproofing tape, such as ProtectoWrap or FortiFlash. Any window and door head flashing should be installed to work with the moisture barrier in keeping moisture away from the sheathing. It is also a good practice to run a thin bead of Silicone Sealant on the surface of the window nailing flange before it is mounted into the opening. This will seal the nailing flange to the moisture barrier. The moisture barrier should be carried down an extra one inch or more over bottom of the wall sheathing and onto the masonry foundation to prevent moisture from contacting the lower edge of the sheathing or the sole plate. Remember that the use of a moisture barrier requires that the EIFS be mechanically fastened and not adhered to the substrate.

DuPont Tyvek StuccoWrap and RainDrop House wrap both have an advantage in their ability to channel water out of a system due to corrugations. Therefore, flat EPS foam board can be installed directly over these barriers. Grooved EPS board or a spacer material is NOT required with either of these barriers.

If Grade D building paper or plain Tyvek HouseWrap is used as the moisture barrier, a drainage plane must be constructed. The drainage plane can be constructed in either of two ways:

1. Use foam board with grooves or channels cut in the back of the board, or
2. Install a spacer material, such as PVC UltraLath, over the moisture barrier.

If grooved board is used, please refer to the appendix of this manual for the proper groove depth and profile. Alternatively, if UltraLath is used, mechanically fasten the lath using staples. Butt runs of lath and do not lap.

**Approved Total Wall Class MD EIFS
Liquid Applied Moisture Barrier**

Total Wall currently approves the following liquid applied moisture barrier:

Total Stop RA liquid-applied membrane moisture barrier

The moisture barrier is installed directly over the exterior sheathing, for example Oriented Strand Board (OSB), plywood or exterior gypsum. The moisture barrier is knifed or trowel-applied to the sheathing joints. The sheathing joints require reinforcing mesh if the sheathing joint gap is 1/8" or greater. After the joints are allowed to dry, the entire surface is coated with one or two roller-applied coats of Total Stop RA. Up to 16 ounces of water may be added to a 5-gallon pail of Total Stop RA to facilitate rolling with a 1/2" to 3/4" nap roller. Two coats are required for OSB. If a drainage track is being used, waterproofing tape is lapped over the back leg of the drainage track onto the moisture barrier to bridge the transition. When possible, all window and door openings should get the moisture barrier back wrapped into openings before the window or door units are installed. It is recommended to seal the transition between the moisture barrier and window or door flange or trim using a waterproofing tape, such as ProtectoWrap or FortiFlash. Any window and door head flashing should be installed to work with the moisture barrier in keeping moisture away from the sheathing. It is also a good practice to run a thin bead of Silicone Sealant on the surface of the window nailing flange before it is mounted into the opening. This will seal the nailing flange to the moisture barrier. The use of a liquid-applied moisture barrier allows the EPS to be adhered to the substrate using Total Wall Base Coat as the adhesive. The adhesive must be notch trowel-applied using vertical notches of base coat adhesive. The vertical notches create the drainage plane. Either 3/8" X 1/2" X 1-1/2" or 1/2" X 1/2" X 2" notched trowel pattern is acceptable.

Some industry professionals feel that use of the liquid-applied moisture barrier has a few inherent advantages over a sheet-applied moisture barrier. For example: A liquid-applied moisture barrier does not require penetrations into the substrate from fasteners or staples. This reduces the chance of water seepage through the moisture barrier. Also, a manufacturer may include mold-preventative agents in the liquid-applied membrane coating to provide a level of protection against mold and mildew. Total Stop RA contains a highly effective mold-preventative agent.

Total Stop RA Weather Resistive Barrier Membrane Coating Product Data Information

Description

Total Stop RA is a rubberized coating, which cures to produce a permanent weather resistive barrier.

Total Stop RA is a ready-to-use product that can be trowel applied and roller applied.

Total Stop RA can be applied directly to OSB sheathing, plywood, exterior gypsum sheathing, Dens-Glass Gold, or FiberRock sheathing without the use of a primer.

Total Stop RA cures to produce a moisture barrier that has elasticity to: seal sheathing joints, seal the sheathing surface, seal existing hairline cracks, and in many cases provide zero-point crack protection to bridge future hairline cracks.

Total Stop RA is water vapor permeable and will function similar to Grade D paper relative to perm rating, but with superior water resistance to Grade D paper.

Application

The Surface must be dry and free of dirt, oils, loose debris or any substance that may interfere with the bond. Replace any damaged, fractured or warped sections of sheathing with new sheathing. For exterior gypsum sheathing, the paper facing should be checked for proper adhesion to the gypsum core using the X-cut method as recommended by AWCI. Replace any wood sheathing with splits greater than 1/4" wide or with craters greater than 1/4" deep and larger than 2" in any lateral direction. **Total Stop RA** is first applied to all sheathing joints and splits with a trowel. Following the joint treatment, the entire exterior wall surface is coated with **Total Stop RA**. Please follow the application steps as outlined below.

Sheathing Joints: Open a new pail of **Total Stop RA**, add up to 24 ounces of water to adjust viscosity for roller application, and mix with on low speed (500 rpm maximum) with a jiffler-style paddle for 30 seconds. Avoid over mixing or air entrainment of the product. Using a steel trowel, fill all sheathing joints with **Total Stop RA**. Also fill any cracks, splits, knotholes or craters in the face of the sheathing using a trowel stroke of **Total Wall RA**. ANY SHEATHING JOINTS GREATER THAN 1/8" WIDE SHALL BE BRIDGED WITH 6" WIDE 2.5 OUNCE REINFORCING SCRIM MESH EMBEDDED WITH **TOTAL STOP RA**. ALL SPLITS OR CRACKS IN THE SHEATHING GREATER THAN 1/8" WIDE SHALL BE BRIDGED WITH 6" WIDE 2.5 OUNCE REINFORCING SCRIM MESH EMBEDDED WITH **TOTAL STOP RA**. Allow curing a minimum of 4 hours or until dry to the touch before beginning coating.

Sheathing Face: Use a 1/2" nap roller to apply a heavy 15-20 mil wet coat of **Total Stop RA** to the entire sheathing face. Cross-roll the wet coating horizontally and vertically to ensure complete coverage. Allow the **Total Stop RA** to dry and inspect the coating for pinholes or voids. If pinholes or voids are present, apply a second coat of **Total Stop RA** in an 8-10 mil wet thickness. Allow coating to dry a minimum of 18 hours before proceeding with the installation of any direct applied exterior lamina or wall cladding system such as EIFS (Exterior Insulated and Finish System).

Technical Data

Flash point	>200 F	Seta
Density	8.9 lb/gal	
Viscosity	approx 30,000 cps	
pH	9.2 - 9.8	
Elongation	350 %	ASTM D412
Actives	65%	
Solids	57%	
PVC	25.0%	(calculated)
Moisture Vapor Transmission	15 perms	ASTM E96
Resin Chemistry: Internally plasticized resin emulsion		

Handling and Storage

Do not apply to frozen or saturated surfaces. Do not apply if precipitation is forecast within 8 hours of application. Do not apply if the temperature cannot be maintained above 40°F for 24 hours. Shelf life in closed containers is 18-24 months when stored at 50-90°F. Clean up with water or soapy water before drying.

Features

- Has permanent elasticity to help bridge cracks
- Is easy to apply with water cleanup
- Does not create a vapor barrier
- Excellent adhesion to many substrates
- Provides an excellent bonding surface
- Resists mold and mildew

Coverage

Gypsum sheathing	400-500 sq.ft/5-gallon pail
Oriented Strand Board *	250-350 sq.ft/5-gallon pail
Plywood*	250-350 sq.ft/5-gallon pail
	*(2 coats recommended)
Smooth Masonry	400-500 sq.ft/5-gallon pail
Rough Masonry	200-400 sq.ft/5-gallon pail

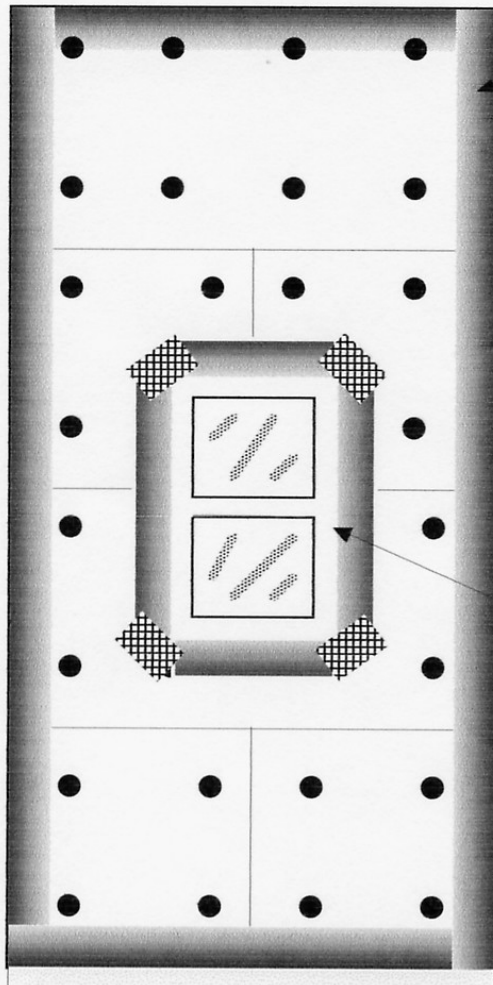
FASTENER SELECTOR GUIDE

Styro TEK Fasteners And WindLock Fasteners Are Approved

INSULATION THICKNESS							
SUBSTRATE	FASTENER TYPE	ONE INCH EPS	ONE AND ONE-HALF INCH EPS	TWO INCH EPS	TWO AND ONE-HALF INCH EPS	THREE INCH EPS	FOUR INCH EPS
SCREWABLE WOOD SHEATHING	TYPE W OR TYPE WT	1-5/8"	2"	2-1/2"	3"	3-1/2"	4-1/2"
WOOD FRAMING	TYPE W, WT OR BUGLE 'X'	2-1/4"	2-5/8"	3"	3-1/2"	4-1/2"	5"
LIGHT STEEL	HI-LO TYPE S OR LMT	2-1/4"	2-5/8"	3"	3-1/2"	4-1/2"	5"
STEEL (20-12 GA)	TYPE S - 12 OR TYPE ST	2-1/4"	2-5/8"	3"	3-1/2"	4-1/2"	5"
MASONRY	TYPE M, MT OR TAPCON	2-1/4"	2-3/4"	3"	3-1/2"	4-1/2"	5"

- only use the proper approved corrosion resistant fastener for the substrate.
- only use 1-3/4" or 2" polypropylene plates for soft coat PB systems such as Styro Tek or Wind-Devil plates.
- penetration must be entire depth or through screwable sheathing.
- penetration into studs must be minimum 1/2".
- masonry holes must be pre-drilled 1/32" smaller diameter than the fastener shaft; penetration is 1" minimum.
- average minimum fastener density must be one fastener per square foot unless reduced by Styro Tek Technical Support in writing because of the use of adhesive in addition to fasteners.
- Fasteners should be installed straight and true, slightly countersunk about 1/8", but not over driven.
- After rasping, it is recommended that fastener heads be dabbed with BaseCoat before the wall is fully coated.

Fastener Pattern for TOTAL WALL mechanically fastened EIFS



Detail mesh embedded in BaseCoat at terminations.

Fastener pattern density is one fastener per square foot average. The number of fasteners per 2' X 4' board is eight on average.

It is recommended to dab the fastener heads with BaseCoat and allow time to set up before applying BaseCoat to the entire surface for embedding the reinforcing mesh.

System held back 1/2" for caulk joint.

4' X 8' panel showing fastener pattern for a density of eight fasteners per 2' X 4' EPS board.

Fasteners may be installed at the EPS board joints. However, the fasteners in the board joints do not count toward the fastener density (one fastener per square foot average desired fastener density). Only fasteners in the main field of the EPS board count toward the fastener density.

T-2000 Soft Coat Base Coat and Adhesive Product Data Information

T-Wall T-2000 Soft Coat Base and Adhesive is a dry powder that is designed to be mixed with water to produce the base coat and adhesive for the soft coat Exterior Insulated and Finish System (EIFS).

T-Wall T-2000 Soft Coat Base and Adhesive serves two functions: 1. It produces the adhesive that will bond rigid polystyrene insulation board to raw masonry, exterior gypsum, DensGlass or cement board substrates, and 2. It produces the base coating that embeds the reinforcing fabric over the face of rigid polystyrene.

T-Wall T-2000 Soft Coat Base and Adhesive is also available as a Total Wall Journeyman Series product, which is formulated for enhanced workability and designed to help the experienced plasterer increase jobsite production.

Mixing Instructions

Open a 50 lb bag of T-Wall T-2000 Soft Coat Base and Adhesive. Slowly pour the powder into a 5-gallon pail containing one gallon of clean water while mixing. Add up to 1.5 quarts of additional water and continue to mix with a low speed mixer or until the product is homogeneous. Allow the mix to stand for about 15 minutes then remix for 1 minute.

For use as an Adhesive

The substrate must be firm, dry and free of loose debris and any substance that would interfere with bond. The substrate must conform to T-Wall System specifications. Cover the entire back of the insulation board with adhesive mix using a notched trowel across the short dimension of the EPS board. This will create vertical ribbons when the board is pressed to the wall. Immediately press the insulation board onto the substrate with firm, even pressure. Do not apply adhesive to the edges of the insulation.

For use as a Base Coat

The rigid insulation board should already be bonded to the substrate and have had time for the adhesive to gain strength. Any back-wrapping at system stops or protrusions using detail mesh should be completed. Prepare the rigid insulation board facing by sanding or rasping all joints and surface areas that need to be brought into plane. Measure and cut a length of Total Wall reinforcing mesh. Apply T-Wall T-2000 Soft Coat Base and Adhesive mix in a 1/16" thick butter coat over the face of the insulation board. Immediately embed the reinforcing mesh using a steel trowel. Work the mesh into the butter coat by starting at the center and trowel toward the edges. Avoid making wrinkles or tears in the mesh and be sure to overlap runs of mesh by a minimum of 2.5". Apply additional T-Wall T-2000 mix as needed to fully embed the mesh. The final coating should be a smooth even finish, thick enough to embed the mesh so that the mesh pattern is not visible. Consult Total Wall specifications for full instruction on all details.

Coverage

80 - 100 square feet/bag as a base coat.

30 - 40 square feet/bag as adhesive and coating

Handling and Storage

Do not apply to frozen or saturated surfaces. Do not apply if precipitation is forecast within 8 hours of application.

Total Wall Foam N' Base Coat and Adhesive Product Information

T- Wall Foam N' Base is a 100% acrylic emulsion blend that is designed to be mixed with Portland cement in a 1:1 ratio by weight. T- Wall Foam N' Base serves two functions: 1. It produces the adhesive that will bond rigid polystyrene insulation board to raw masonry, exterior gypsum, DensGlass, and cement board, and 2. It produces the base coating that embeds the reinforcing fabric over the face of rigid polystyrene insulation.

T-Wall Foam N' Base is also available as a Total Wall Journeyman Series product, which is formulated for enhanced workability and designed to help the experienced plasterer increase jobsite production.

Mixing Instructions

Open a 5-gallon pail of T- Wall Foam N' Base and mix with a low speed mixer until the product is homogeneous. Pour one half of the T- Wall Foam N' Base pail contents (30 pounds) into a clean mixing pail. While mixing the half pail of T- Wall Foam N' Base, slowly add 30 pounds of fresh, lump free Portland type I, II, or I -II cement (approximately 1/3 of a 94 pound bag of cement) to the pail. Add up to 1 quart of clean water to adjust workability. Allow the mix to stand for about 15 minutes then re-mix for 1 minute.

For use as an Adhesive

The substrate must be firm, dry and free of loose debris and any substance that would interfere with bond. The substrate must conform to T-Wall System specifications. Cover the entire back of the insulation board with adhesive mix using a notched trowel across the short dimension of the EPS board. This will create vertical ribbons when the board is pressed to the wall. Immediately press the insulation board onto the substrate with firm, even pressure. Do not apply adhesive to the edges of the insulation.

Coverage

100 - 150 square feet per pail as a base coat.

50 - 75 square feet per pail as a base coat and adhesive.

For use as a Base Coat

The rigid insulation board should already be bonded to the substrate and have had time for the adhesive to gain strength. In addition, any back-wrapping at system stops or protrusions using detail mesh should be completed. Prepare the rigid insulation board facing by sanding or rasping all joints and surface areas that need to be brought into plane. Measure and cut an area of Total Wall standard reinforcing mesh. Apply T- Wall Foam N' Base mix in a 1/16" thick butter coat over the face of the insulation board. Immediately embed the reinforcing mesh using a steel trowel. Work the mesh into the butter coat by starting at the center and trowel toward the edges. Avoid making wrinkles or tears in the mesh. The final coating should be a smooth even finish, thick enough only to embed the mesh so that the mesh pattern is not visible.

Handling and Storage

Do not apply to frozen or saturated surfaces. Do not apply if precipitation is forecast within 8 hours of application. Do not apply if the temperature cannot be maintained above 40 F for 24 hours. Shelf life in closed containers is 12-18 months when stored at 50-100 F. Keep containers sealed and under cover when not in use.

EZ Base NCB Product Information

Description

TOTAL WALL Soft Coat EZ Base NCB is a premixed, ready-to-use base coat and adhesive for the soft coat Exterior Insulated and Finish System (EIFS).

TOTAL WALL Soft Coat EZ Base NCB serves two functions: 1. it produces the adhesive that will bond rigid polystyrene insulation board to approved substrates, and 2. it produces the base coating that embeds the reinforcing mesh over the face of rigid polystyrene insulation board.

Mixing Instructions

Open a new 5 gallon pail of TOTAL WALL Soft Coat EZ Base NCB. Mix with a low speed mixer for about 30 seconds or until the product is homogeneous. If necessary, add a small amount of water to adjust workability. Final consistency should be a creamy light and easily troweled mixture.

For use as an Adhesive

The substrate must be firm, dry and free of loose debris and any substance that would interfere with bond. The substrate must conform to TOTAL WALL PB System specifications. This product is not recommended as an adhesive for glossy, chalky or deteriorated surfaces. Use TOTAL WALL Blue Mastic as the adhesive for hard to bond to substrates. Cover the back of the insulation board with adhesive mix using a notched trowel across the short dimension of the EPS board to create vertical ribbons on the wall. Immediately press the insulation board onto the substrate with firm, even pressure.

For use as a Base Coat

The rigid insulation board should already be bonded to the substrate and have had time for the adhesive to gain strength. In addition, any back-wrapping at system stops or protrusions using detail mesh should be completed. Prepare the rigid insulation board facing by sanding or rasping the entire surface. Measure and cut lengths of Total Wall reinforcing mesh. Apply TOTAL WALL Soft Coat EZ Base NCB mix in a 1/16" thick butter coat over the face of the insulation board. Immediately embed the reinforcing mesh using a steel trowel. Work the mesh into the butter coat by starting at the center and trowel toward the edges. Avoid making wrinkles or tears in the mesh and be sure to overlap runs of mesh by a minimum of 2-1/2". Apply additional EZ Base mix as needed to fully embed the mesh. The final coating should be a smooth even finish, thick enough to embed the mesh so that the mesh pattern is not easily visible. Consult TOTAL WALL specifications for full instruction on all details.

Technical Data

Appearance	Creamy, light grey liquid
pH (wet)	approx. 10.5
Density (wet).....	12 lbs per gallon
Chemistry	Acrylic Polymer based

Coverage

100 - 125 sq ft per 5 gallon pail as a base coat only.

50 - 75 sq ft per pail as adhesive and base coat.

Handling and Storage

Do not apply to frozen or saturated surfaces. Protect from precipitation for 12 hours. Do not apply if the temperature can not be maintained above 40 F for 24 hours. Shelf-life in unopened pails is 12-18 months when stored in doors.

Maintenance

If damage occurs to an installed system, please contact TOTAL WALL for information on repair.

Precautions

This product is a mildly alkaline based material. Do not ingest. Avoid contact with skin and eyes. In case of contact, flush with water. For contact with eyes, get immediate medical attention in addition to flushing. Wear safety glasses and protective clothing. Keep out of reach of children and pets.

Total Wall Synthetic Finish Product Information

Description

Total Wall Synthetic Finish is a high quality trowel grade textured coating material. Total Wall Synthetic Finish is pre-colored, pre-textured and ready to trowel on directly out of the pail. The eight standard textures available are:

- ShotBlast Coarse- a deep, open sandblasted texture;
- ShotBlast Medium- a rich, uniform sandblasted texture;
- ShotBlast Fine- a rich limestone texture;
- Swirl Ultra Coarse- a deep open swirl pattern;
- Swirl Coarse- a medium open swirl pattern;
- Swirl Fine - a light swirl pattern;
- Freestyle - produces a variety of patterns including skip, knockdown, stipple and brush;
- Gemstone - a variety of marble-like finishes.

Total Wall Synthetic Finish provides a weatherproof, attractive eggshell finish that is designed for permanent flexibility, maximum adhesion and long term durability.

Total Wall Synthetic Finishes are formulated with high-grade quality pigments and resins to exceed all industry standards for performance and durability.

Total Wall Synthetic Finishes are available in three grades. The Journeyman grade is our high quality standard material. Journeyman Finish is a siliconized acrylic designed with enhanced workability characteristics to maximize production for the craftsman. The Classic grade incorporates a resin backbone to provide a broader range of adhesion and elongation properties and is considered an elastomeric grade material. The Premium grade finish is designed for maximum elongation properties and is considered an elastomeric grade material.

Total Wall Synthetic Finishes are suited for all exterior and interior applications.

Application

The substrate must be clean and free of loose particles, oils or any substance that would interfere with bond. A smooth cement-based substrate (such as T-Wall Soft Coat Basecoat or T-Wall Hard Coat Basecoat) is recommended. For interior use, any smooth substrate (such as drywall) will do. A smooth, even substrate will provide better coverage, uniform texture, and a better result than a rough substrate. Glossy surfaces need to be roughened.

Open a new 5 gallon pail of Total Wall Synthetic Finish and mix with a low speed mechanical for 1 minute. If necessary, add up to 6 ounces of clean water to adjust workability. Using a stainless steel trowel, apply Total Wall Synthetic Finish to the substrate. Use firm pressure and trowel to trowel on the coating. For Swirl textures, trowel to the thickness of the largest aggregate in the Total Wall Synthetic Finish. For Gemstone and ShotBlast textures, trowel to a thickness a little greater than the largest aggregate. Try not to over-trowel the coating. Work to a natural stop or break. Depending on drying conditions and the desired result, float the finish within 2 - 5 minutes. Do not let the T-Wall Acrylic Premium Finish begin to dry before floating is completed. For the ShotBlast finishes, a plastic float or stainless steel trowel are often used. For the Swirl textures, a foam float or plastic trowel is often used. The face of the trowel or float is kept flat to the wall using light to moderate pressure and circular sweeping strokes. Do not over-float the Finish. Freestyle texture responds to different floating techniques to produce stipple, skip trowel, knockdown or other attractive textures.

The applicator must apply a thin skim coat and then a second coat which the applicator produces the final texture. Use T-Wall Lastic Smooth elastomeric coating if a primer is to be used ahead of Total Wall Synthetic Finish. When used as a primer, T-Wall Lastic can be diluted with one pint of water per gallon of T-Wall Lastic before application.

Total Wall Synthetic Finish Product Information Continued**Features**

- ' Meets all VOC, VOS requirements
- ' Is a 100% acrylic water-based coating
- ' Does not create a vapor barrier
- ' Protects against all weather conditions
- ' Provides a long lasting, attractive finish
- ' Resists dirt pickup and is non-chalking

Technical Data

Flash point	>200 F	Seta
Density	13.5 lb/gal	
Viscosity	approx 1 MM cps	
pH	9.0 - 9.8	
Elongation	ASTM D412	
Journeyman	up to 30%	
Classic	up to 100%	
Premium	up to 180%	
Solids	> 80%	ASTM D1044
Accelerated Weathering	2000 hrs	pass ASTM G23
Mildew Resistance	pass	Mil Std 810D
Flame Spread Index	5	ASTM E84

Texture	Coverage (5-gallon pail)
ShotBlast Coarse	70 – 90 sq.ft. / pail
Freestyle	80 - 140 sq.ft. / pail
Swirl Ultra Coarse	90 - 120 sq.ft. / pail
ShotBlast Medium	90 - 120 sq.ft. / pail
Gemstone	100 - 120 sq.ft. / pail
Swirl Coarse	120 - 150 sq.ft. / pail
Swirl Fine	140 - 160 sq.ft. / pail
ShotBlast Fine	140 - 170 sq.ft. / pail

Handling and Storage

Do not apply to frozen or saturated surfaces. Do not apply if precipitation is forecast within 8 hours of application. Do not apply if the temperature cannot be maintained above 40 F for 24 hours. Shelf life in closed containers is 12-18 months when stored at 50-100 F. Keep containers sealed and under cover when not in use.

Maintenance

If Total Wall Synthetic Finish becomes dirty or stained, clean with a mild cleaner solution and low-pressure spray rinse. For scars or hard to clean stains, recoat with T- Wall Elastomeric.

Precautions

Total Wall Synthetic Finish is an alkaline water based material. Do not ingest. Avoid contact with skin and eyes. In case of contact, flush with water. For contact with eyes, get immediate medical attention in addition to flushing. Wear safety glasses and protective clothing. Keep out of reach of children and pets. For additional information, please contact our Technical Department.

Sealant Listing Update

Technical Bulletin

Issue # 1038

Currently, TOTAL WALL recognizes Pecora, Dow, Tremco, TOTAL WALL, Sika and Sonneborn as primary approved sealant manufacturers. TOTAL WALL further recommends use of either a 2-part urethane such as Dynatrol II by Pecora, Dymeric by Tremco, NP 2 by Sonneborn, or single component ultra-low modulus silicone such as Dow 790, 791 or 795 silicones or Pecora 890 silicone. Experience has shown that the approved sealants perform satisfactorily for the TOTAL WALL Exterior Finish and Insulation Systems. As a minimum requirement, the sealant must meet ASTM C920, Type M and S, Grade NS, Class 25 specifications.

Caulk Sealants Currently Approved For All Applications:

- ☐ 1. Dow 790 ultra-low modulus single component Silicone Sealant.
- ☐ 2. Dow 791 ultra-low modulus single component Silicone Sealant.
- ☐ 3. Dow 795 ultra-low modulus single component Silicone Sealant.
- ☐ 4. Pecora 890 ultra-low modulus single component Silicone Sealant.
- ☐ 5. Pecora Dynatrol II two component urethane Sealant.
- ☐ 6. Tremco Dymeric and Dymeric 511 two component urethane Sealants.
- ☐ 7. Sonneborn NP 2 two component urethane Sealant.
- ☐ 8. Sonneborn Sonolastic 150 tint base two component urethane Sealant.
- ☐ 9. Sika LM 15 single component low modulus urethane sealant.
- ☐ 10. TOTAL WALL Mastic#11 single component tintable acrylic Sealant.

Caulk Sealants Conditionally Approved For Selected and Pre-approved Applications Only:

- ☐ 1. Sonneborn NP1 single component urethane Sealant.
- ☐ 2. Pro-Seal 34 single component polycarbonate sealant.
- ☐ 3. Sikaflex-2c, NS/SL two component urethane Sealant.
- ☐ 4. Bostik Chem-Caulk 500 two component urethane Sealant.

It is worth noting that the ultra-low modulus silicones have demonstrated the broadest range of performance. This equates to statistically fewer service problems and an anticipated longer service life, especially in harsh climates. Therefore, in our opinion, the ultra-low modulus silicones should be given extra consideration if all other factors are equal.

For additional information call TOTAL WALL 888-702-9917.

TOTAL WALL

888.702.9915 totalwall.com

applicator training manual

Moisture Drainage MD

applicator training manual

applicator training manual

MOISTURE

d r a i n a g e

■ moisture drainage MD eifs system ■

3

the moisture drainage system

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TOTAL WALL

When To Use Moisture Drainage Class MD EIFS

Moisture Drainage Class MD EIFS (Exterior Insulated and Finish Systems) were developed to provide a designed means for water to escape from behind the EIFS. By contrast, the Barrier or Face Sealed Class PB EIFS has no designed means for incidental water that gets behind the EIFS to safely escape from the wall system. The Moisture Drainage EIFS provides additional protection that is advantageous to moisture sensitive sheathings and moisture sensitive framing. TOTAL WALL considers OSB, plywood and exterior gypsum to be moisture sensitive sheathings. TOTAL WALL considers wood framing to be a moisture sensitive framing. In addition, construction practices relating to residential construction are substantially different from commercial practices. The incidence of water intrusion behind the exterior cladding is a higher risk factor in residential construction. Based on these factors combined with recent changes in building codes, TOTAL WALL requires the following practices with regard to TOTAL WALL EIFS installations:

1. **Residential construction where moisture sensitive sheathing or moisture sensitive framing is present, all EIFS installations shall be a Moisture Drainage System;**
2. **Commercial projects where moisture sensitive sheathing or moisture sensitive framing is present, it is recommended that EIFS be a Moisture Drainage System.** Anyone with questions regarding Moisture Drainage Systems, Barrier or Face Sealed Systems, Warranties, qualified applicators, code requirements, sheathing, framing, products, inspections, detailing or specifications should call 888-702-9915.

WALL PREPARATION

1. The wall should be plumb, clean and in sound condition. Any deteriorated, rotted, damaged or soft areas must be repaired before proceeding.
2. The wall should be uniform. The maximum allowable system deflection, normal to the plane of the wall, is L/240.
3. Protect windows, plants and other areas as necessary before proceeding.

MINIMUM RECOMMENDED TOOLS AND EQUIPMENT

1. A mixer for the base and finish coats (1/2" drill and jiffy mix-blade mixer)
2. A drill and appropriate bits and tips for the mechanical fasteners
3. A razor knife, tape measure, level, rasp, bucket brush and chalk-line
4. A hot knife tool or fine-toothed saw for cutting foam boards
5. A stainless steel trowel, a margin trowel, a notched trowel, and a float
6. A staple gun to install sheet moisture barrier or roller to apply liquid barrier

MINIMUM SYSTEM MATERIALS REQUIRED

1. TOTAL WALL Base Coat Use one of the following three products: Foam N' Base Coat (mix with Portland cement) or T-2000 Dry Soft Coat Base Coat (mix only with water) or TOTAL WALL NCB EZ Base (premixed ready-to-use non-cement Base Coat)
2. Portland cement (used only for TOTAL WALL Foam N' Base Coat)
3. TOTAL WALL Reinforcing Mesh and Detail Mesh
4. TOTAL WALL Mechanical Fasteners (for use with sheet-applied moisture barrier)
5. TOTAL WALL Finish Coat (with selected color and texture)
6. TOTAL WALL EPS Insulation Boards
7. Approved Moisture Barrier
 - a. Total Stop RA Liquid-Applied Moisture Barrier (no fasteners required) or
 - b. An Approved Sheet-Applied Moisture Barrier
8. PVC Accessories and waterproof tape
9. Approved backer-rod and caulk sealant.

A REVIEW OF PRODUCT MIXING INSTRUCTIONS**1. a. TOTAL WALL T-2000 Dry Soft Coat Base Coat**

This product is a powder and comes in 50 lb bags. Mix with water using a jiffy mixer blade and drill (or a mortar mixer) until a mortar-like consistency is achieved (about 5 quarts of water per 50 lb bag). Allow to stand for 5 minutes, then remix adding a little more water if necessary.

1. b. TOTAL WALL EZ Base (Non Cement Base Coat)

Mix before use. Product may be thinned by adding 4 - 6 ounces of water while mixing per 5 gallon pail of TOTAL WALL EZ Base. Mix with a low speed jiffy mixer blade on a drill. Product may be cleaned off surfaces with soap and water before drying.

1. c. TOTAL WALL Foam N' Base Coat

Mix product in a 1:1 ratio by weight with Type I Portland cement. Add 6 – 10 ounces of water to a 5 gallon pail of mix to adjust to a mortar-like consistency. An easy way to measure is to pour off 1/2 of a pail of Foam N' Base Coat into a clean empty pail. This will be about 30 lbs of product in each pail. Now add 1/3 of a bag of Portland cement to each pail while mixing (a bag of Portland cement weighs 94 lbs, so 1/3 of a bag is about 31 lbs of cement). Now each pail will have 30 lbs of Foam N' Base Coat and 31 lbs of cement. Add 16 - 30 ounces of water while mixing to achieve the desired consistency. Allow to stand 15 minutes, then remix.

2. TOTAL WALL Finish Coatings

These products are premixed and ready to use. However it is a good idea to mix the product for about 30 seconds with a low speed mixer before use to insure proper consistency. If the product is too thick, add 2 - 8 ounces of water per 5 gallon pail while mixing.

INSTALLATION

The moisture drainage system should be chosen and incorporated in the design and bid phase of construction upon before installation begins. What is a moisture drainage system? In the event that water accidentally enters the system, for example, from a faulty detail, a moisture drainage system will permit that water to safely exit from behind the EIFS. Without a moisture drainage system, water that enters the system cannot easily escape and may eventually cause damage to moisture sensitive sheathing and framing in the wall.

Do I need a moisture drainage system? Most areas of the country require that EIFS have a moisture drainage system on residential construction that has moisture sensitive sheathing or framing. Total Wall requires that a moisture drainage system Class MD be installed on residential construction where moisture sensitive sheathing or framing is present. Therefore, if the job is residential class construction with wood framing and/or OSB, plywood or exterior gypsum sheathing, the answer is yes.

Step 1 Beginning with an optional starter track with weeps

Using a level and chalk line, mark where the lower edge of the system will be on the wall. A PVC starter track is highly recommended, but not required. If you are using a starter track, it must be perforated for drainage. A 105 degree angle with a molded drip edge is recommended. A universal starter/drip track is also acceptable. Attach the PVC starter track along the bottom edge of the wall (at the lowest point of where the system will be installed). The lower insulation boards will rest on this starter track strip, so make sure that it is level and firmly attached to the wall using corrosion resistant screws. Ideally, the system should terminate one inch or more below any wood sheathing or framing.

If you do not use a PVC starter track, you must use a special back-wrap termination to keep the drainage path at the back of the EPS boards open. The special termination involves rasping the lower back edge of the EPS board to a 45 degree angle. This prevents base coat from blocking the drainage plane. Please see the details section of this manual for more information.

Step 2 Installing the Moisture Barrier Sheet Applied Moisture Barrier Option

It is recommended that window and door penetrations receive two layers of moisture barrier. Wrap the first layer of moisture barrier into the raw door opening or window opening. Install head flashing over the window or door heads. Install sill pan flashing as applicable.

Attach moisture barrier to the entire exterior wall sheathing. Lap the building paper over the back vertical edge of the starter track. Start at the bottom and work up to lap the moisture barrier so water running down the wall will not get behind the paper. Overlap horizontal runs of building paper at least 2". Lap vertical runs by at least 6". Be sure that the second layer of moisture barrier is lapped over the back of the head flashing and

tucked under the bottom edge of the first layer where necessary to prevent water from getting behind the barrier.

Seal the moisture barrier to the penetration transitions with waterproofing tape. Be sure to seal the top of the back riser on the sill pan flashing. Provide a drainage plane for the water to flow out of the system by using either Tyvek StuccoWrap or RainDrop House wrap with flat EPS board, or grooved board with non-corrugated moisture barrier. A spacer material may be used to create a drainage plane as an alternative to grooved boards and non-corrugated moisture barrier. All other flashings, including kickout flashing and deck flashing must be installed to work with the drainage system.

Liquid-Applied Membrane Moisture Barrier Option

Open a new pail of Total Stop Ra and low speed mix for 30 seconds. Use a putty knife or trowel to apply Total Stop Ra to the sheathing joints. Use of 4" or 6" wide reinforcing mesh on sheathing joints is recommended. If the joints are 1/8" or wider, you must use reinforcing mesh (2.5 ounce or 4-ounce weight) on the sheathing joints. Allow the joint treatment to dry. Up to 16 ounces of water can be added to Total Stop RA to adjust for roller application. Use a 1/2" nap roller and apply Total Stop RA to the entire sheathing exterior surface in 15-20 wet mils thickness, including the previously treated joints. OSB sheathing requires two coats of Total Stop RA. Seal the moisture barrier to the penetration transitions with waterproofing tape. Be sure to seal the top of the back riser on the sill pan flashing and the back leg of any drainage track. Also, seal the back leg of the starter track to the moisture barrier using waterproof tape.

Step 3 Back-wrapping of outer EPS board edges must be done at all wall stops (including the bottoms and tops of wall sections), openings (including doors and windows), and abutments and protrusions. You do not back-wrap where one EPS board meets another EPS board. You do back-wrap where an EPS board meets a window or a weep base or anything other than another EPS board. Back-wrapping is done using a short roll of standard reinforcing mesh called a starter roll or detail roll. Prepare the terminations for back-wrapping by using staples to attach detail mesh to the sheathing. These rolls of mesh are typically 9" wide. At least one-half of the mesh should hang over the penetration so that it may be pulled onto the EPS board face and embedded in base coat for back-wrapping. In some instances the system will be terminated with a PVC accessory that will not require back-wrapping. In those instances, the Base Coat and mesh is lapped onto the PVC accessory instead of back-wrapping.

All insulation boards need to meet specific safety and performance criteria. These criteria include fire resistance, density minimums, and dimensional stability. Check board label to be insure quality. Any discolored or warped boards should be rasped or used as cut trim pieces.

If the system has sheet-applied moisture barrier, you must install all insulation boards using Total Wall mechanical fasteners, Styro Tek Fasteners or Wind-Lock fasteners. No adhesive is used. Consult the fastener guide in this manual to determine the proper fastener. Install a minimum of eight Total Wall fasteners per 2' by 4' board. Fasteners may be installed on EPS board joints, but those fasteners do not count toward the required fastener density of one per square foot average. Fastener heads should be flush or slightly counter-sunk with regard to the board surface. The length of fastener is

determined by the foam thickness and the type of fastener is determined by the substrate. When fastening to screwable sheathing, the fasteners must penetrate the entire sheathing. For wood or metal framing, fasteners must penetrate the framing members of the wall by a minimum of 1/2". Dab all fastener heads with Total Wall Base Coat after the EPS boards are rasped to prevent fastener read-through.

If the System has liquid-applied moisture barrier, you should use Total Wall soft coat base coat (either T-2000 or Foam N' Base) to adhere the insulation boards in place. Use a notched trowel and apply base coat across the short length of the back of the EPS boards. The notches should be made from a 3/8" X 1/2" X 1-1/2" notched trowel or a 1/2" X 1/2" X 2" notched trowel. The adhesive must be applied so the ribbons run vertically on the wall. The vertical ribbons of adhesive make the drainage plane.

Install EPS boards in a running bond pattern. Interlock inner and outer corners. Use "L"-cut EPS boards at window and door corners. Insert a sliver of foam board in any gaps between insulation boards or use approved low expanding urethane foam.

Rasp entire board surfaces with a coarse rasping tool.

Step 4 Once the insulation board is placed, the detail mesh is then wrapped around to the face of the board. The mesh is embedded in base coat from the outer edge onto the face of the EPS board. At doors, windows and other protrusions leave room (from 3/8" to 1/2") for insertion of backer-rod and caulk sealant between the EIF System and the edge of the door, window, or other penetration in the wall.

Step 5 Apply Base Coat to the board face for embedding reinforcing mesh. Note - detail mesh should already be attached behind board edges and ready to be pulled around to the board face for back-wrapping.

a) If 15 ounce or 20 ounce High Impact Mesh is being installed, measure and cut runs so that the edges are butted. Using a steel trowel, apply Soft Coat Base Coat mix to the surface of the foam insulation boards in a 1/16" to 1/8" thick skim coat. The 15 ounce and 20 ounce High Impact Meshes are embedded in the layer of BaseCoat before proceeding.

b) Measure and cut TOTAL WALL standard reinforcing mesh. Overlap runs of mesh and edges by 2-1/2" minimum.

c) Using a steel trowel, apply Soft Coat Base Coat mix to the surface of the foam insulation boards (or High Impact Mesh layer if applicable) in a 1/16" to 1/8" thick skim coat.

d) Immediately embed the TOTAL WALL reinforcing mesh (such as TOTAL WALL Standard 4 ounce Soft Coat Mesh) into the freshly applied Base Coat. Use a trowel to press the mesh into the Base Coat by starting at the center and work toward the edges. Press out the air voids and wrinkles to produce a smooth Base Coat. Remember to overlap runs of standard mesh by a minimum of 2-1/2 inches.

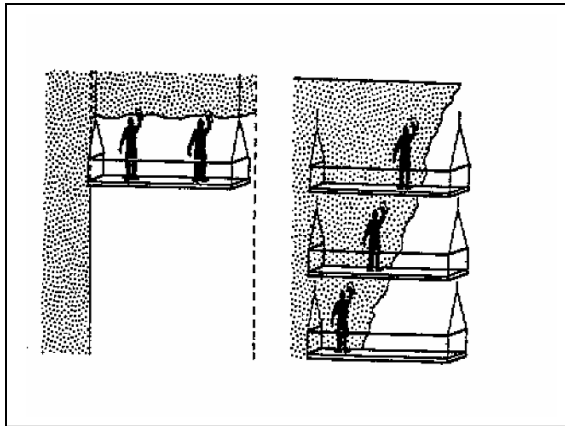
- e) Overlay a 9-1/2" by 12" section of detail mesh placed at a 45 degree angle at each window corner and door corner and embed in Base Coat to reinforce these natural stress points.
- f) Apply additional Base Coat as necessary to completely cover the mesh so that no mesh color is visible and most of the pattern is not visible. A minimum 1/16" thickness is required.
- g) Allow the Base Coat to dry and cure 18 hours minimum while protecting from freezing and precipitation.
- h) Remove any trowel marks by rubbing a pumice stone over the surface.

Step 6 Applying the finish coat.

- a) Apply TOTAL WALL Finish of choice directly out of the bucket onto the cured Base Coat using a stainless steel trowel. Be sure to keep a continuous wet edge and work to a natural stop.

Use enough skilled manpower appropriate to the size of the wall and weather conditions.

- b) Texture or float the finish to achieve the desired result. During floating, be sure to use the same type float and same motion and pressure.



Do not apply finish into the expansion joints or isolation joints. Sealant should be bonded to Base Coat.

Swirl Ultra Coarse, Swirl Coarse and Swirl Fine are designed to create a popular “worm hole” or “swirl” texture. Apply these finishes to thickness of the largest aggregate. Use one trowel pass to remove any excess product from the surface. Float in a circular motion using light pressure. Plastic, wood, neoprene and XPS foam make excellent floats. Each float will produce a different result. A delay in floating will create a “burned” or rougher looking texture. If you float or drag the finish in one straight direction rather than a circular motion, you will obtain a bark texture.

ShotBlast Fine, ShotBlast Medium and ShotBlast Coarse are designed to create a limestone or sand-blasted surface appearance. These textures are known for being very user friendly. Apply these finishes just slightly thicker than the largest aggregate. Float by using light to medium pressure in a circular motion with a steel trowel, sponge float,

neoprene float or plastic float. Waiting a few minutes for the finish to tighten on the wall will create a more open surface look.

Gemstone is designed to create a marble look. Apply these finishes slightly thicker than the largest aggregate. Float with steel or plastic. A number of other floats have also produced attractive results. A prime coat of Total Lastic is recommended over the base coat ahead of Gemstone Finish.

Freestyle is designed to create a versatile, hand applied natural stucco look. Apply these finishes in a tight skim coat on the first pass. Allow the finish to tighten by waiting at least 20 minutes. Apply additional finish to achieve a stipple, skip trowel, knock-down, brush or other desired result.

Spraying Finishes: All finishes can be sprayed using specific equipment and a suitable technique. Contact TOTAL WALL if you are considering spraying a finish.

- c) Allow all finishes to cure by protecting from freezing and precipitation for 24 hours.

Architectural Enhancements

Architectural shapes such as quoins, corners, arches and cornices can be added during the middle or latter phases of the installation process. Foam shapes can be mounted directly to the substrate or over the existing base coated system as applicable. These shapes are then base coated and finished to match the flat wall application described above. Alternatively, completely finished shapes which match or accent the flat wall system can be mounted to the base coated or finished system.

An example of an architectural enhancement is placing quoins (corner reveals) on the building corners. The quoins can be made at the job site, or they can be ordered (from TOTAL WALL) completely prefabricated and finished to a desired color and texture and ready to mount to the wall.

System Installation Points to Remember

- All terminations are properly back-wrapped
- System held back 1/2" at doors and windows for backer rod and sealant
- System held 6" to 8" above grade
- Moisture barrier properly installed and taped at penetrations
- 3/4" expansion joint at intersection of dissimilar materials
- 3/4" expansion joint where through wall joints already exist
- Interlock (stagger) board joints on inside and outside corners
- Double mesh inside and outside corners
- Use butterflies of mesh at stress points (window and door corners)
- Rasp entire EPS surface
- Dab fastener heads with base coat (fasteners not used with Total Stop RA)

No exposed horizontal EIFS
Roof lines are properly flashed.
Roof overhangs have drip edges.
Kickouts installed where needed at roof-wall interfaces
3/4" expansion joint at floor lines in wood frame construction
EPS board joint gaps are filled with foam
System kept 2" off roof shingles
Penetrations to be sealed with approved backer and caulk or fillet bead
All detailing, flashings and weeps designed to work with drainage system

Sealant Application

It is vitally important to carefully consider, review and follow all of the recommended procedures and details for sealant application. Pay particular attention to:

- joint dimension
- joint location and spacing
- joint surface (Base Coat)
- backer-rod placement
- primer application
- sealant application

Improper joint installation and sealant application will lead to serious job problems and could result in an EIF System failure. Therefore, it is prudent to use only experienced applicators

and reputable materials in all phases of sealant installation. Besides TOTAL WALL, Pecora, Dow, Tremco, Sika and Sonneborn are primary approved sealant manufacturers.

TOTAL WALL further recommends use of either a 2-part urethane such as Dynatrol II by Pecora, Dymeric by Tremco, Sonnelastic 150, or single component ultra-low modulus silicone such as Dow 790, 791 or 795 silicones or Pecora 890 silicone. In addition, low modulus single component urethane sealants, such as Sika 15LM or Sonneborn 150LM are approved. TOTAL WALL offers its own Mastic #11 tintable caulk sealant. Other sealants may be used such as a single part urethane (example Sonneborn NP 1) with prior approval from TOTAL WALL in writing. As a minimum requirement, the sealant must meet ASTM C920, Type M and S, Grade NS, Class 25 specifications. For additional information call TOTAL WALL.

**Sealant Application on
Class MD Systems**

With the exception of esthetic joints, all control joints should be a minimum width of 1/2" or 4 times the expected movement, whichever is greater.

Expansion joints or thru-wall joints (as shown) should be a minimum width of 3/4" or 4 times the expected movement, whichever is greater. The moisture barrier should be continuous behind the joint.

Joint depth minimums are established by the sealant manufacturer and can be obtained from their literature or by calling Total Wall Technical Services.

Typically, a total joint depth for backer rod and sealant of 1-1/4" or

greater will be sufficient for joints up to 3/4" width. However, silicone sealants typically require a thickness of as little as 1/4" because they function better in a narrower cross section. Urethane sealants require a maximum thickness of 1/2" for joint widths of 4" or wider. Mastic #11 requires a thickness of approximately 3/8" for joint widths of 1/2" or wider. In some instances, a fillet bead of sealant over a quarter-round backer rod or bond breaker tape is acceptable to accommodate specific details.

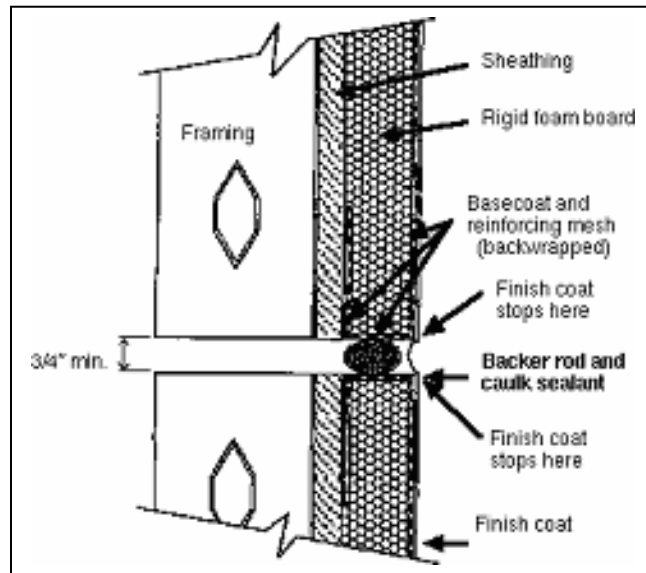
All insulation board edges shall be back-wrapped with mesh and Base Coat. The back-wrapped edges shall be cured at least 18 hours in dry and above freezing conditions. Any defects such as cracks, voids or exposed mesh in the joint must be repaired. The joint should not contain any finish coat.

Apply a primer when recommended by the sealant manufacturer.

Insert a proper diameter backer rod to allow for its compression into the joint at a uniform depth. The depth is to allow for the desired thickness caulk bead. The backer rod should be a closed cell polyethylene material or an extruded polyolefin with a non-absorbing skin.

Prepare the sealant according to the manufacturer's instructions. Apply the sealant with pressure gun and properly sized nozzle. Fill the surface of the prepared joint with a smooth, solid, even bead of sealant. The bead must be free of sags, voids and wrinkles. Tool the joint to eliminate air pockets and force solid contact with the joint surfaces.

All joints should be regularly inspected to insure that a waterproof seal is maintained.



applicator training manual

MOISTURE

d r a i n a g e

■ moisture drainage MD eifs system ■

total wall system details

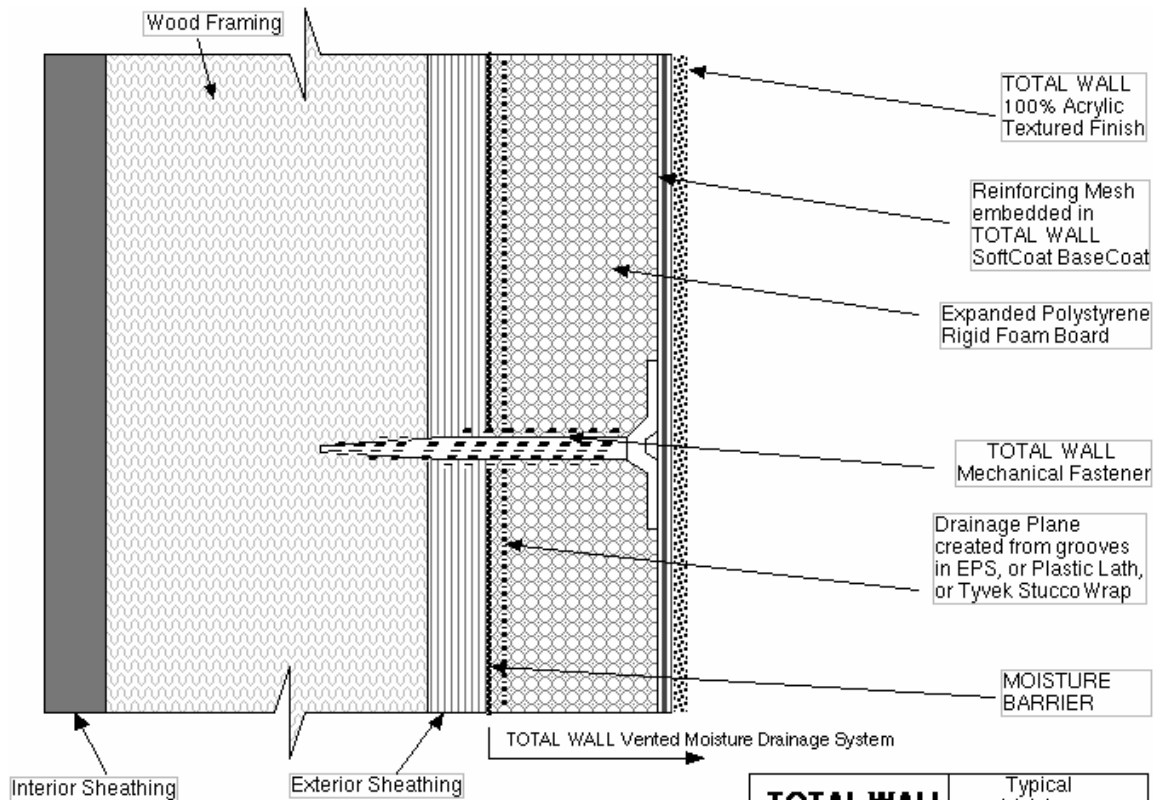
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Many of the following details are applicable to both sheet-applied and liquid applied moisture barrier systems.

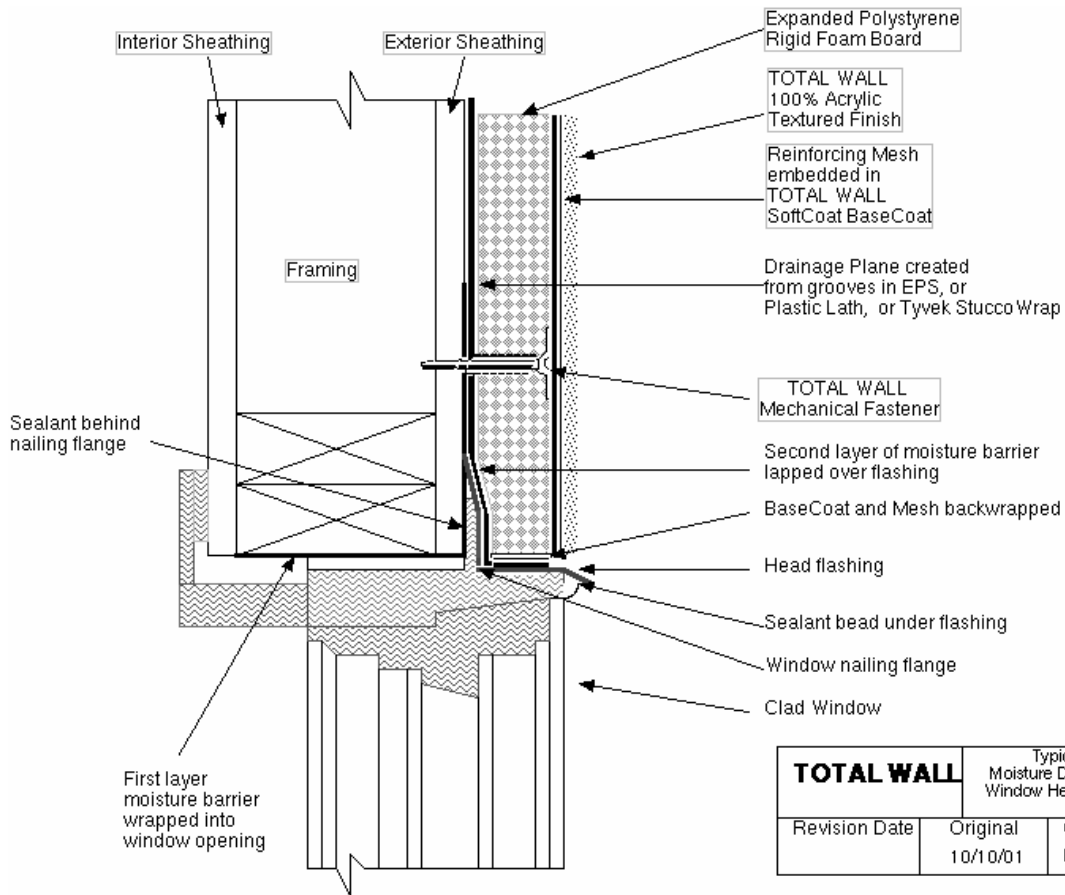
Several liquid-applied moisture barrier system details are not listed where an applicable detail is already provided.

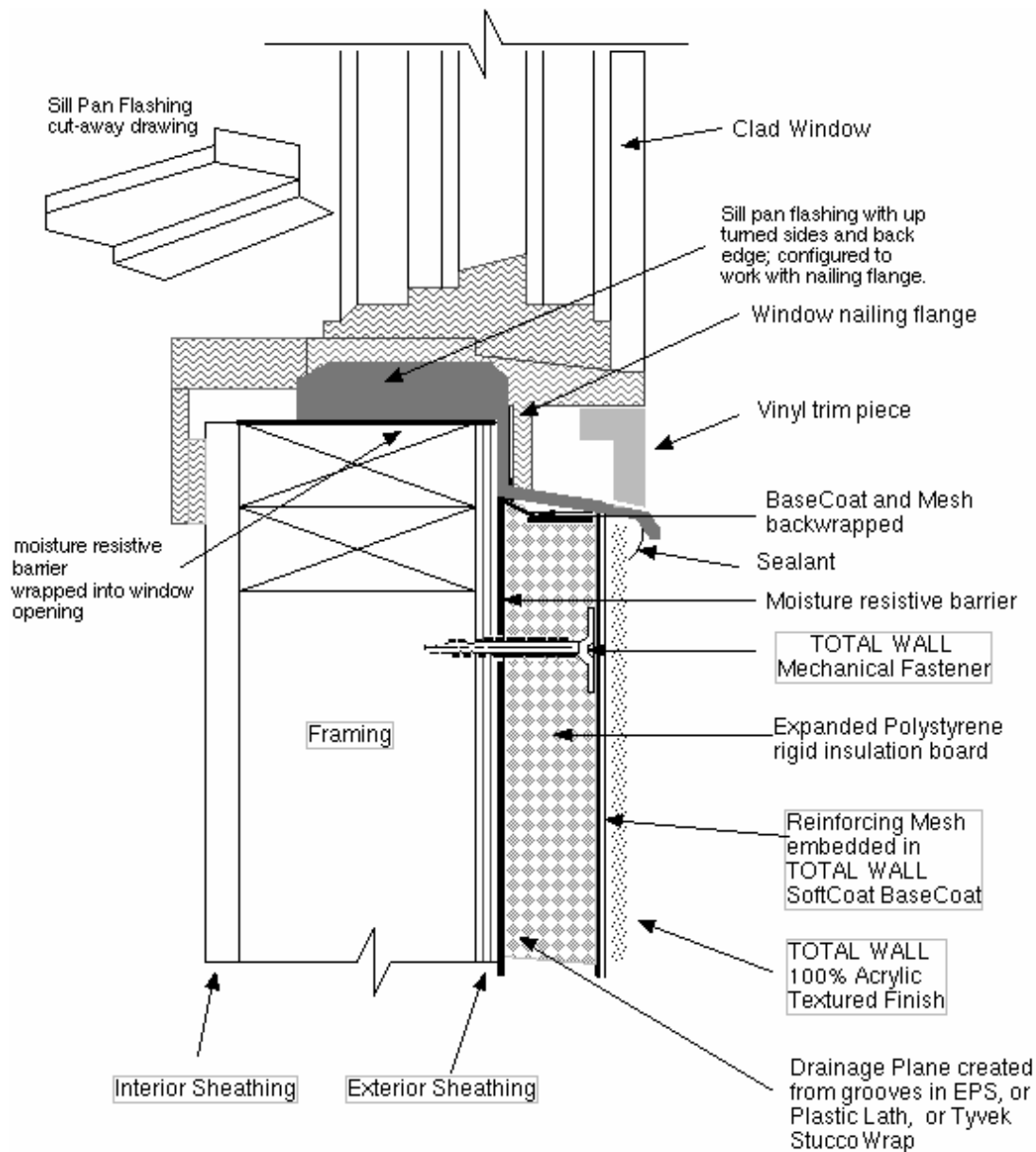
888.702.9915 totalwall.com

TOTAL WALL

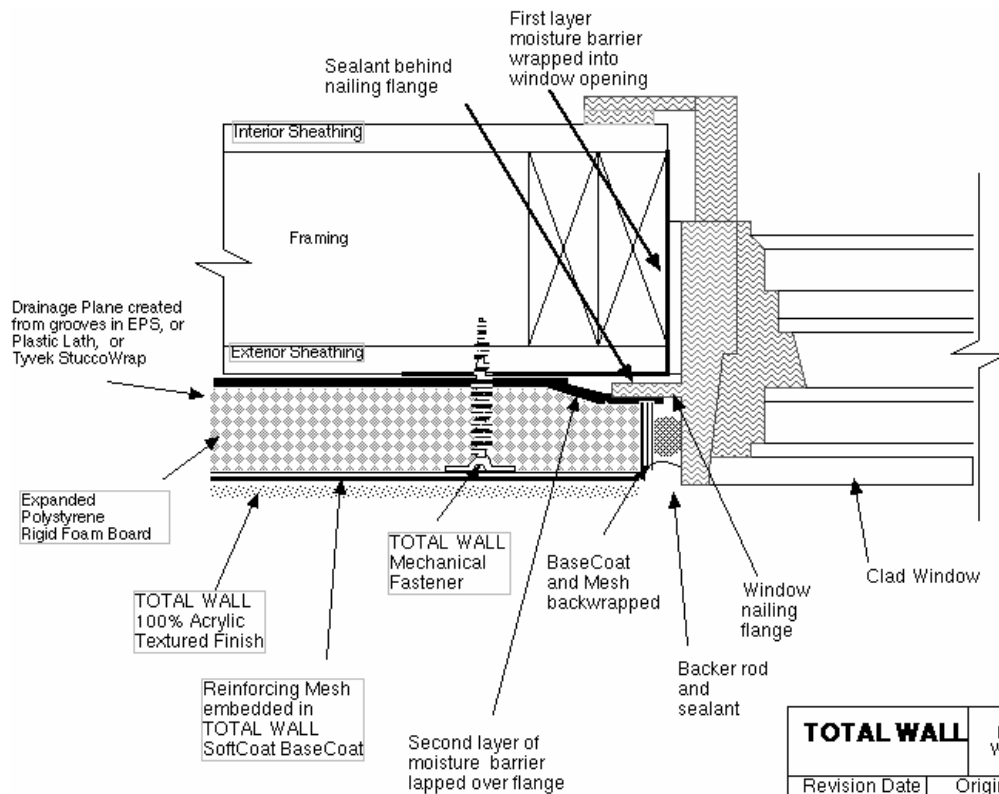


TOTAL WALL		Typical Moisture Drainage System
Revision Date	Original	Code No.
	10/10/01	MD 1.01

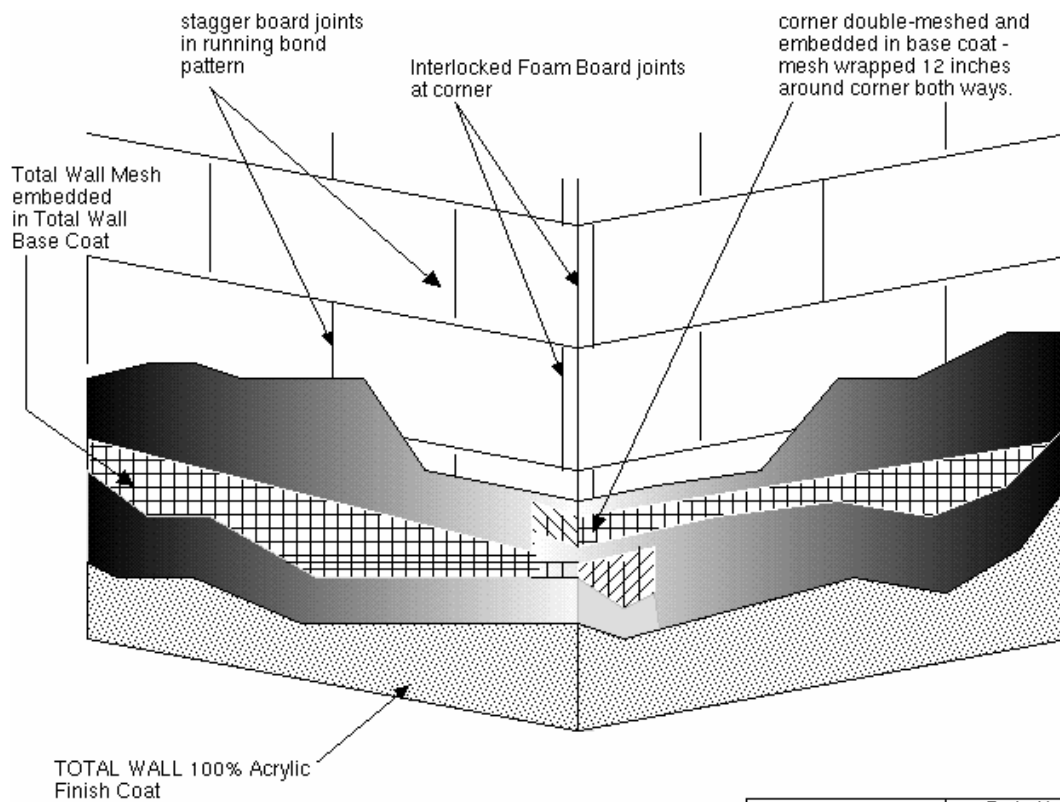




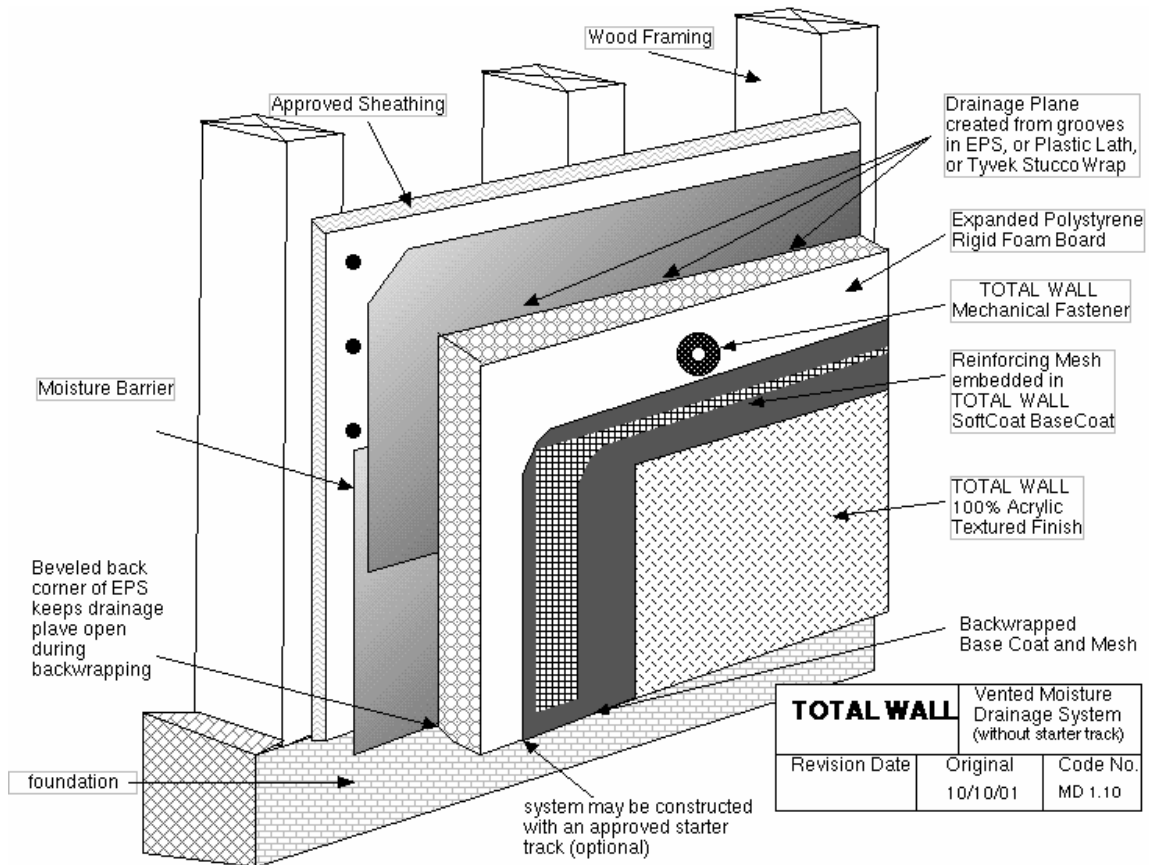
TOTAL WALL		Typical Drainage System Window Sill Detail (with sill pan)
Revision Date	Original	Code No.
	10/10/01	MD 1.03

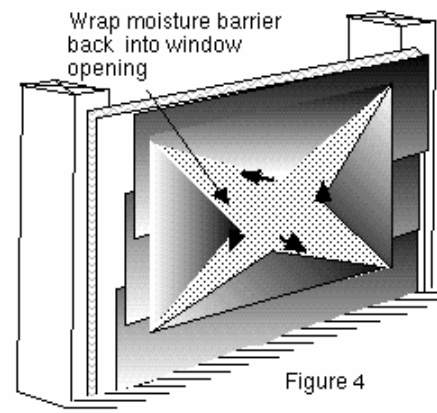
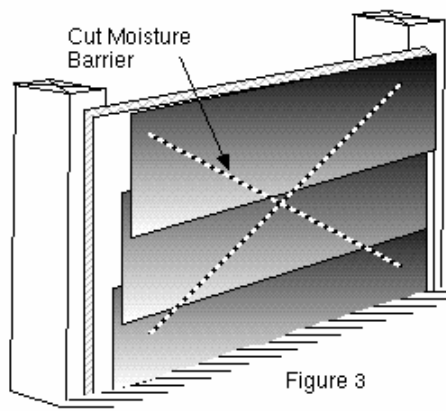
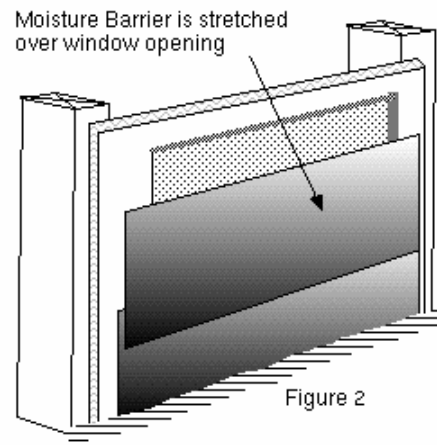
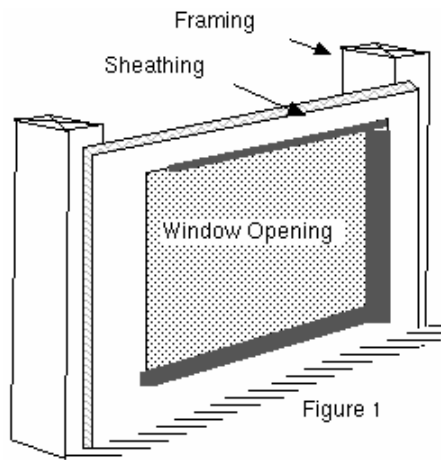


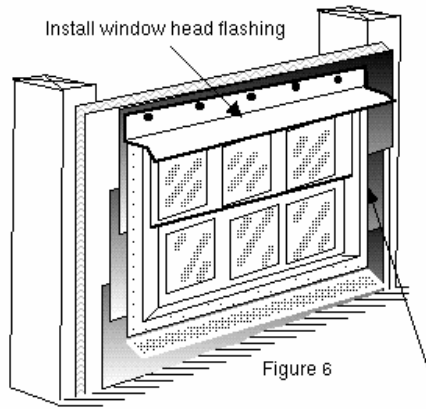
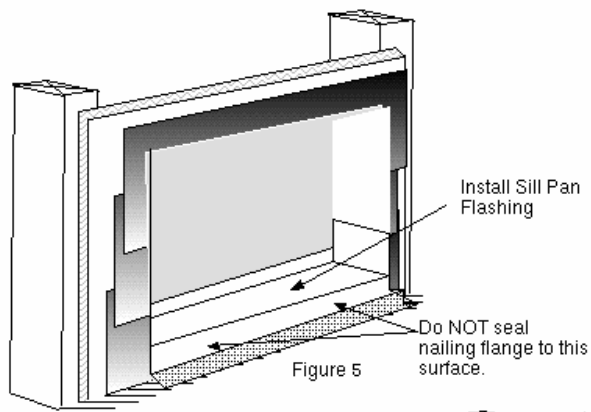
TOTAL WALL		Typical Moisture Drainage Window Jamb Detail
Revision Date	Original	Code No.
	10/10/01	MD 1.04



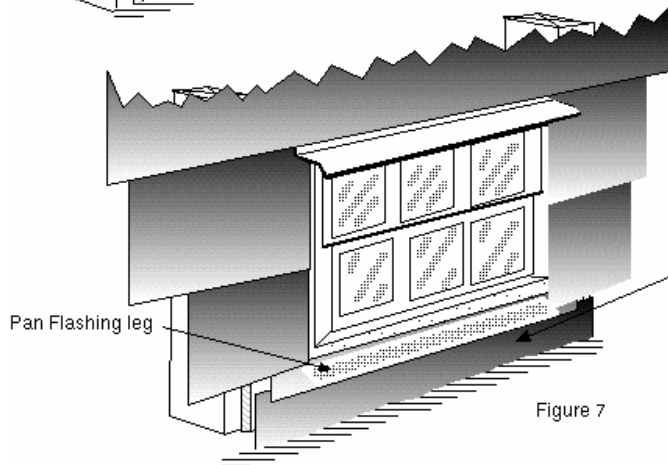
TOTAL WALL		Typical Inside or Outside Corner Section
Revision Date	Original	Code No.
	8/12/02	MD 1.05







Apply caulk under nailing flange over first layer of vapor barrier to seal window jambs and window head (not the sill).

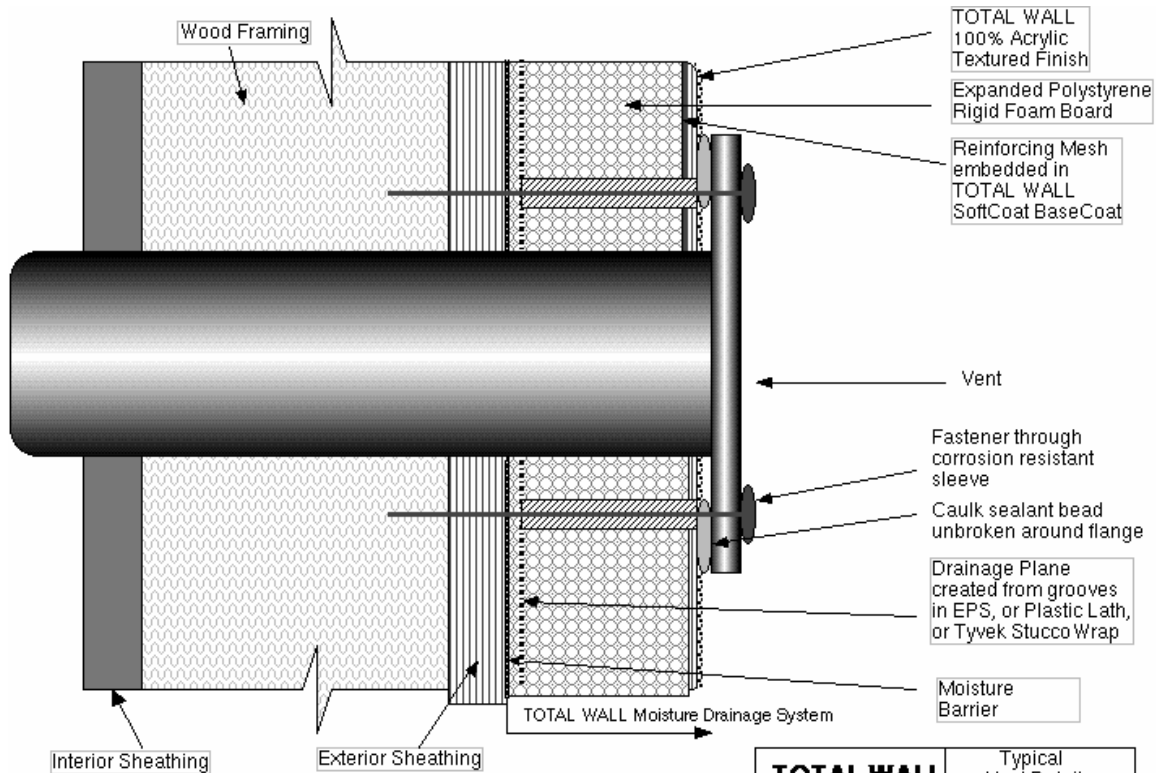


Install moisture barrier over entire wall surface.

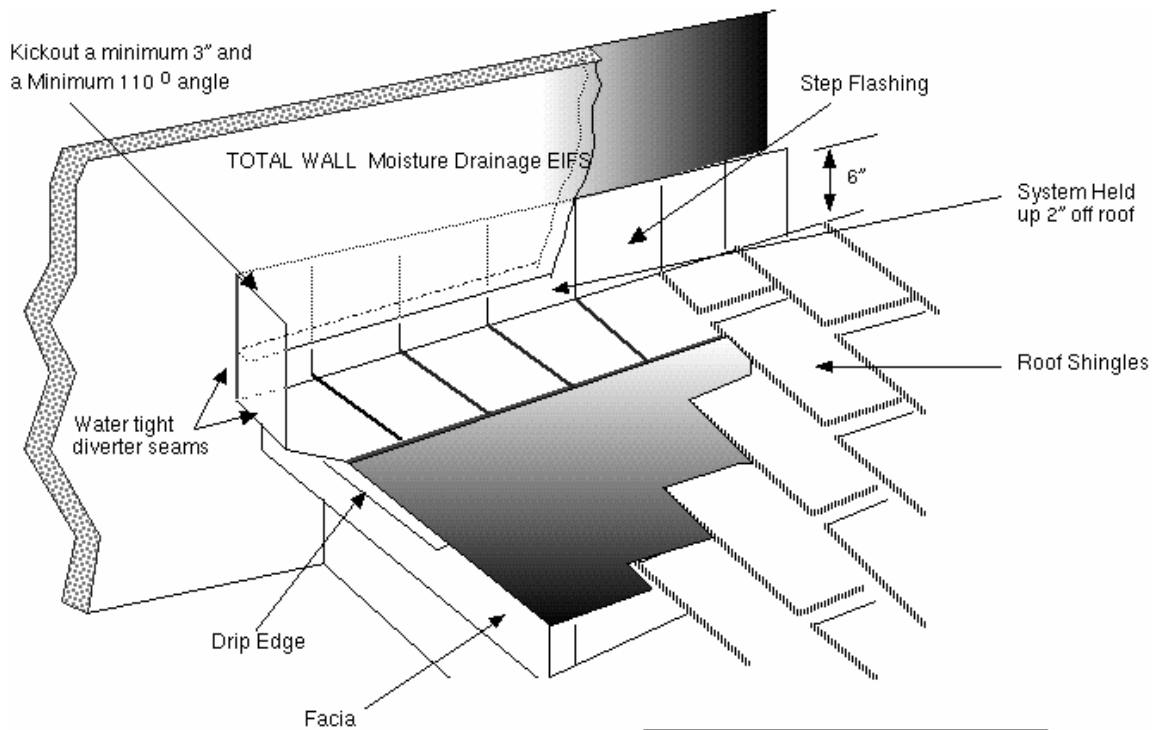
At window sill, tuck the second layer of moisture barrier under the first layer that was wrapped into the window opening.

TOTAL WALL		
Moisture Drainage System Window Preparation		
Revision Date	Original	Code No.
	10/10/01	MD 1.20

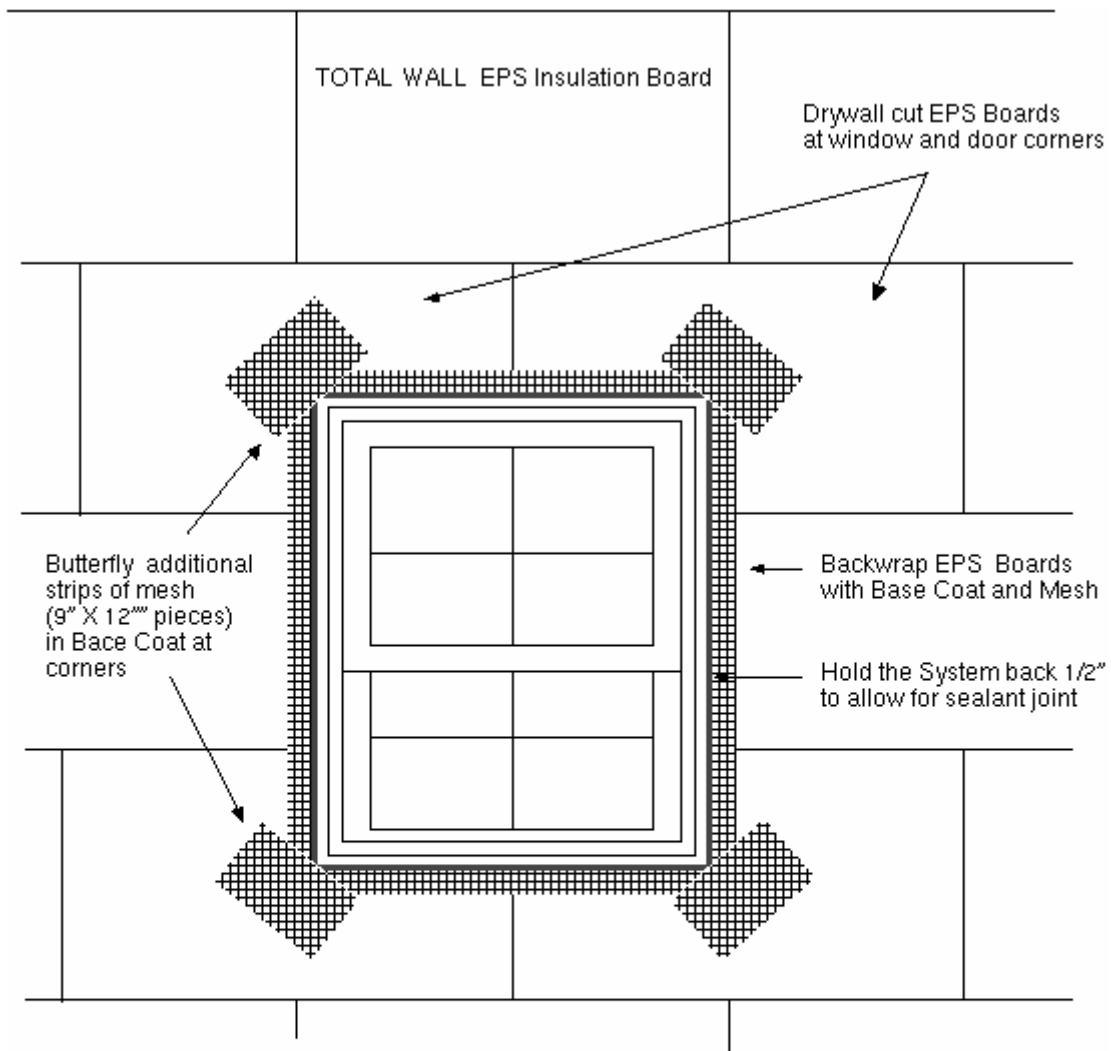
page 2 of 2



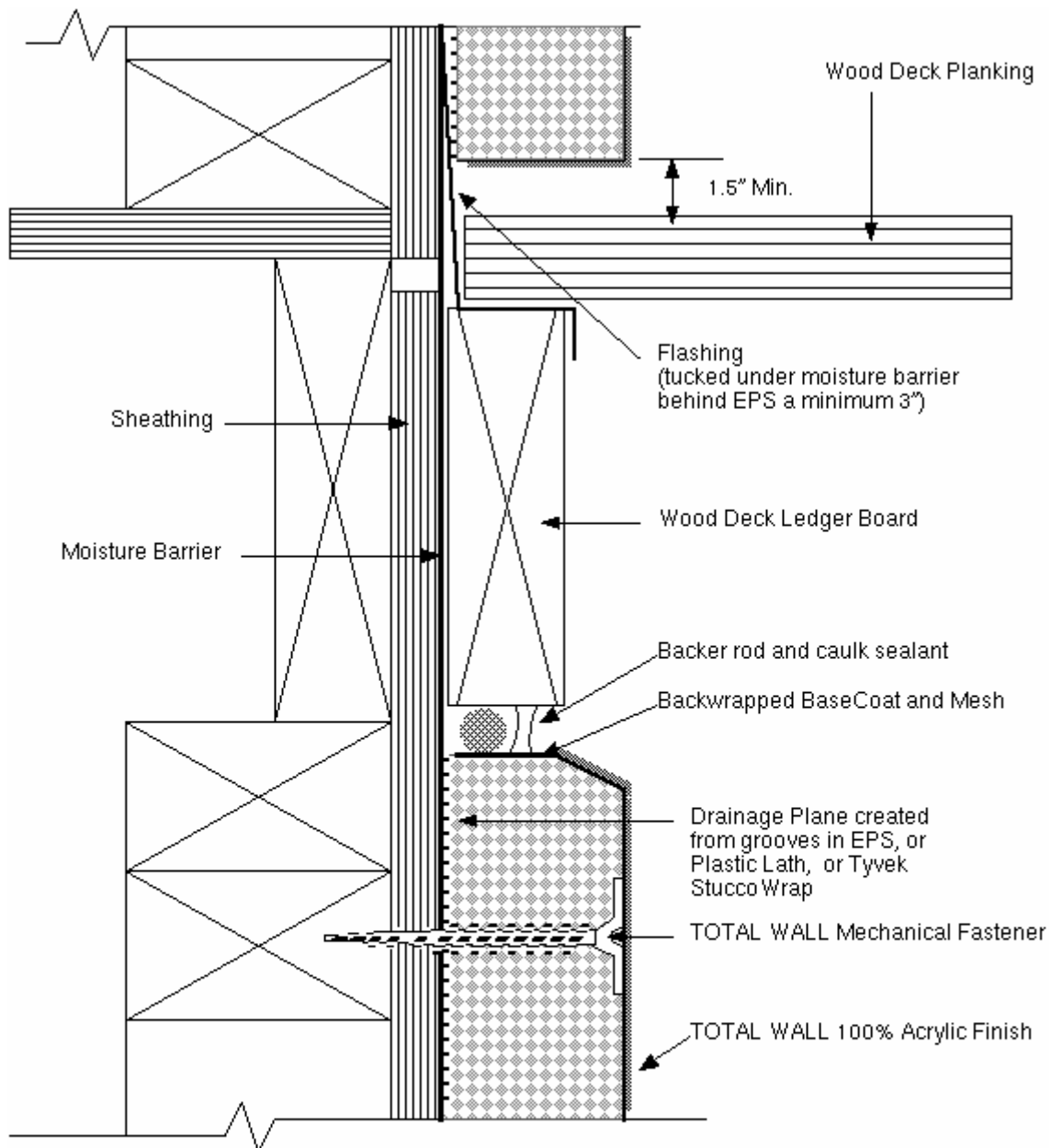
TOTAL WALL		Typical Vent Detail
Revision Date	Original	Code No.
	10/15/01	MD 2.00



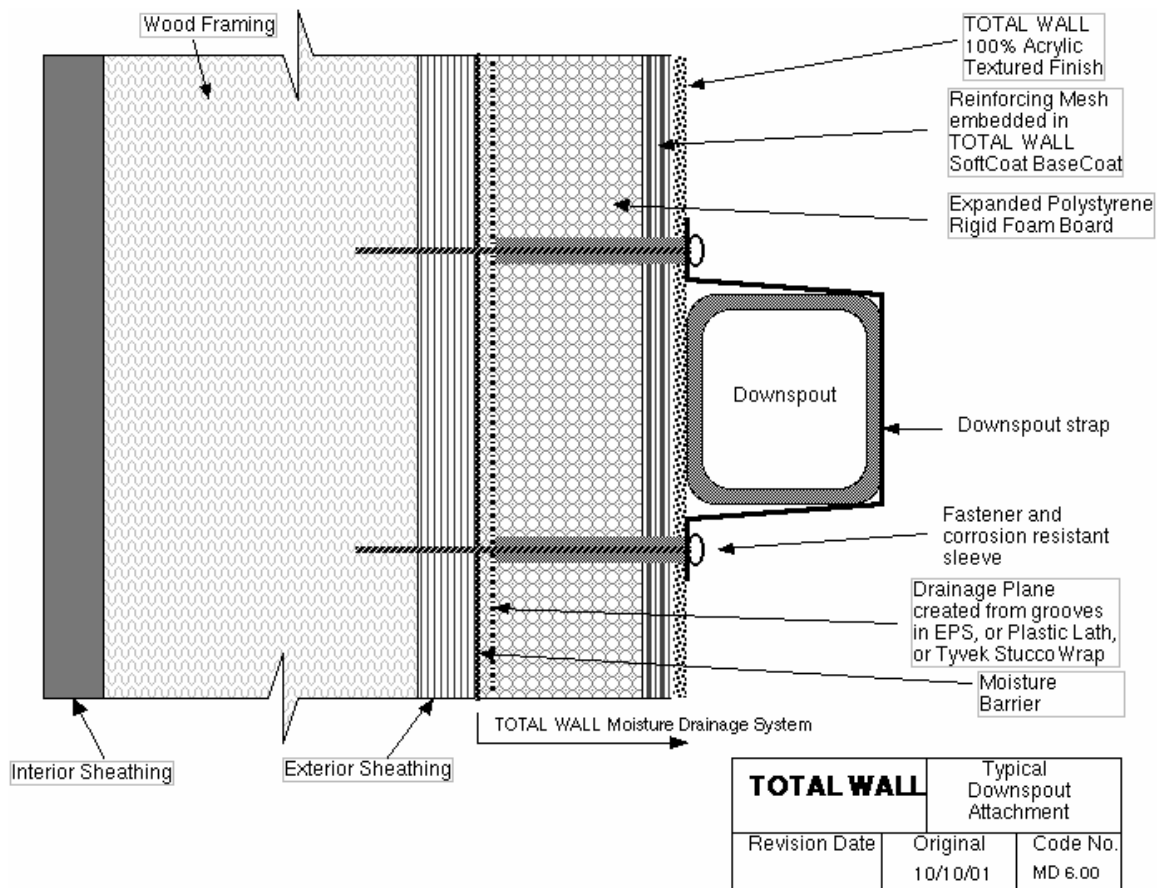
TOTAL WALL		Typical Roof Flashing with kickout diverter
Revision Date	Original	Code No.
	10/10/01	MD 3.00

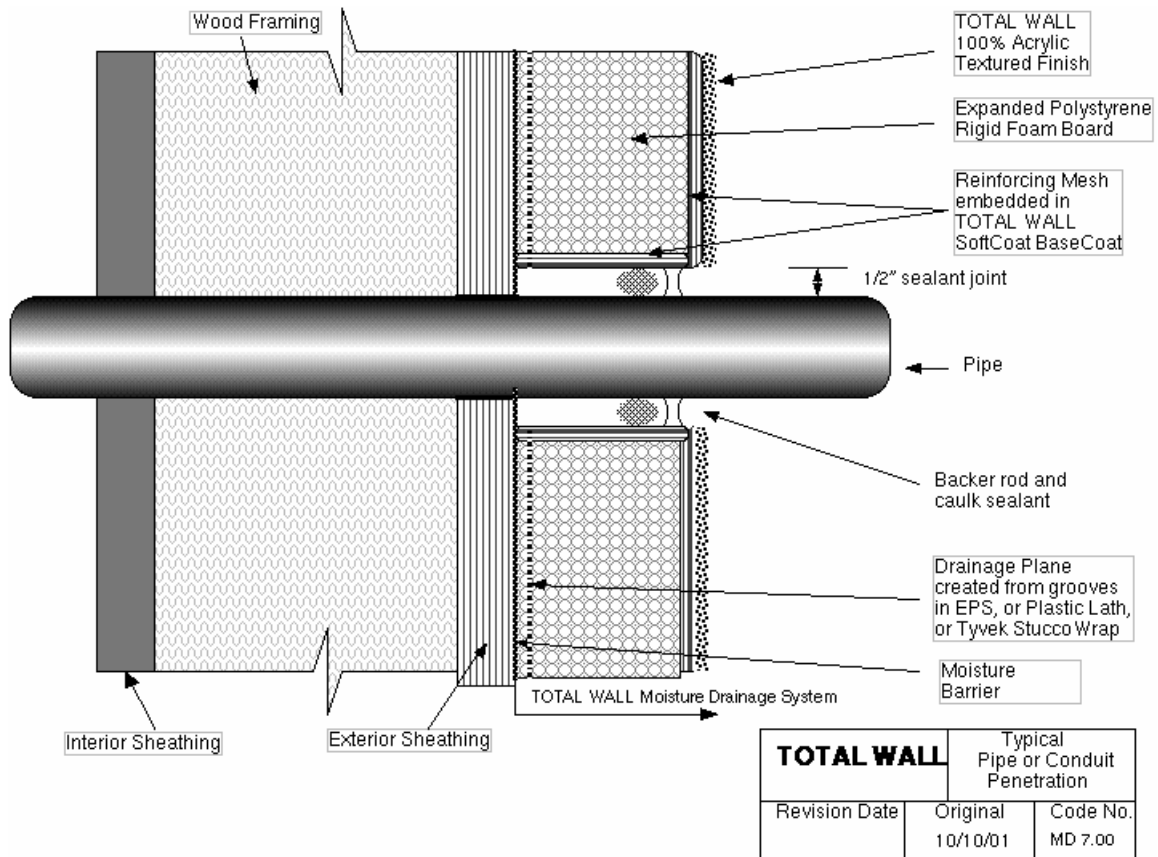


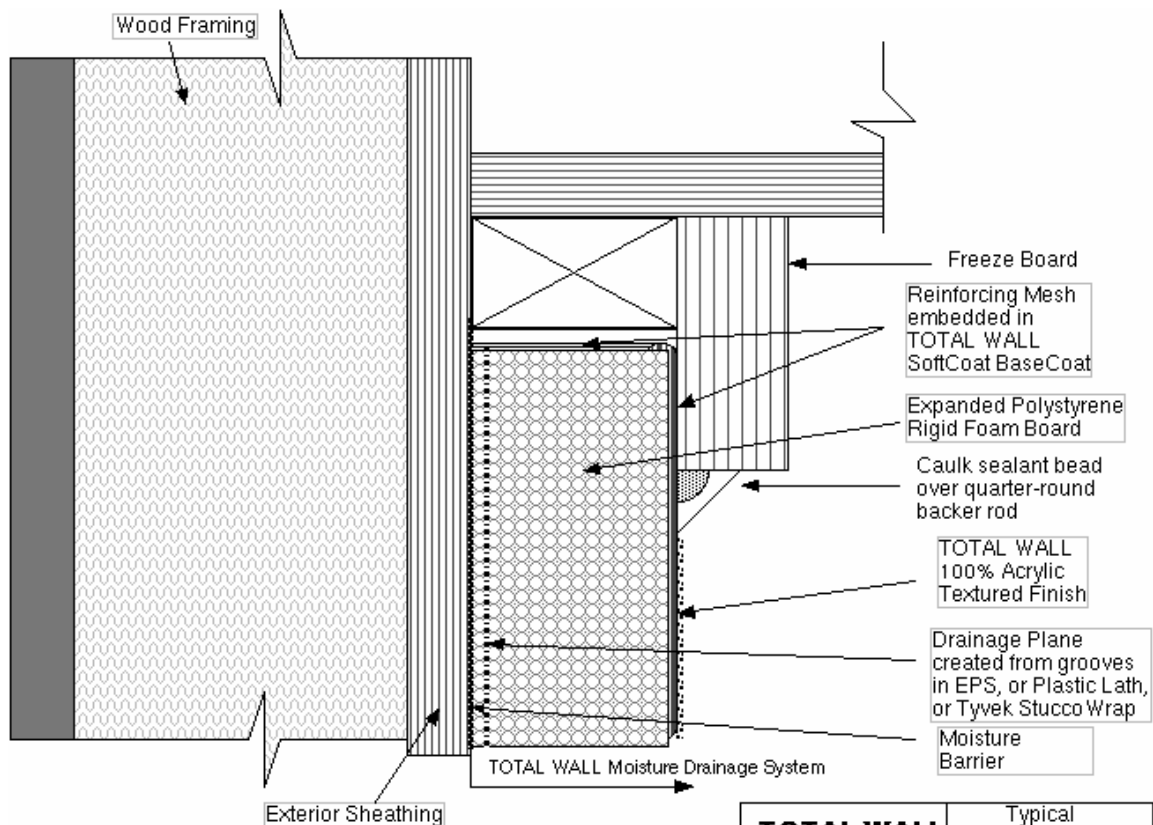
TOTAL WALL		Typical EPS Board & Mesh Installation at Windows and Doors
Revision Date	Original 10/10/01	Code No. MD 4.00



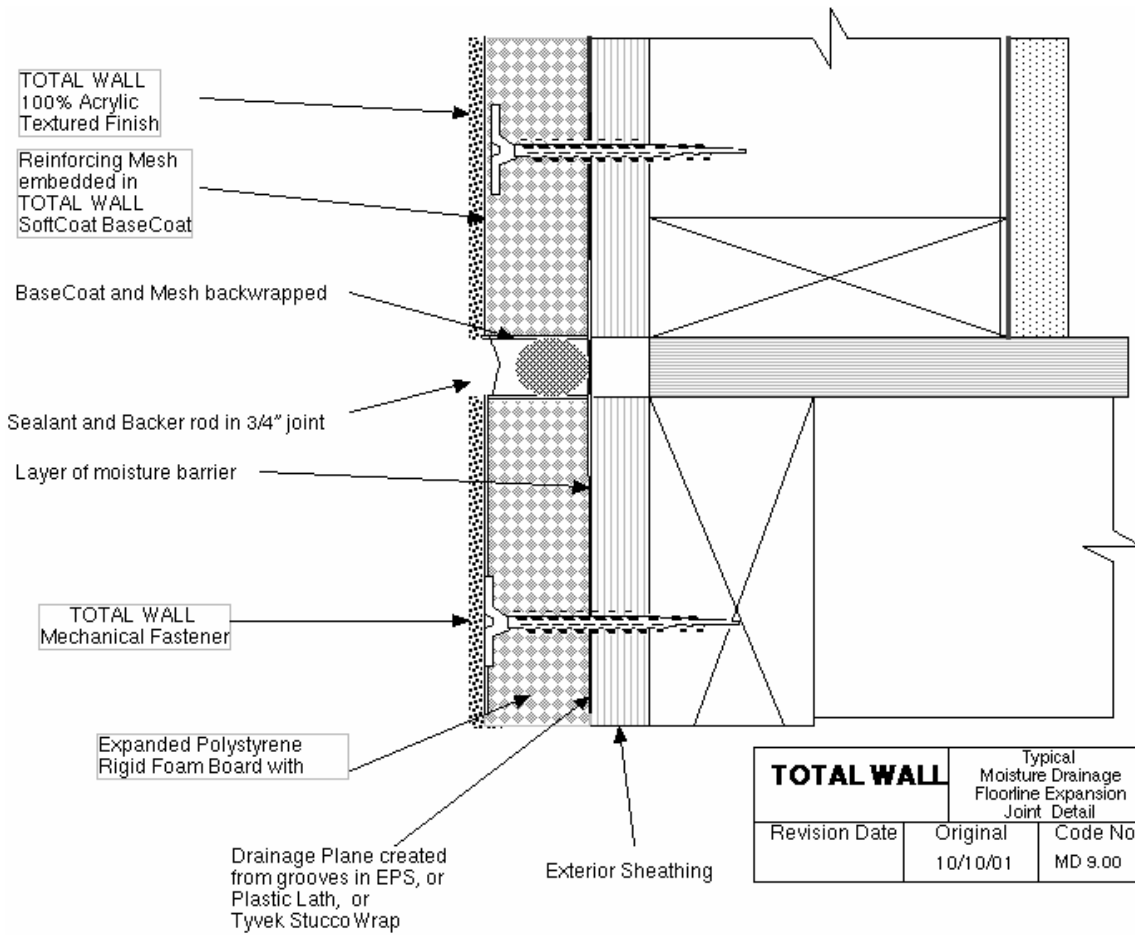
TOTAL WALL		Typical Wood Deck Detail with flashing	
Revision Date	Original	Code No.	
	10/10/01	MD 5.00	

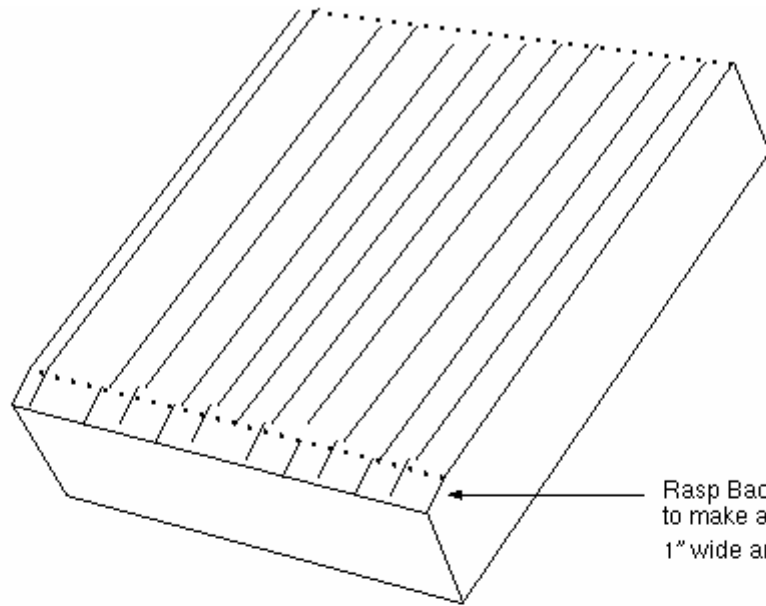




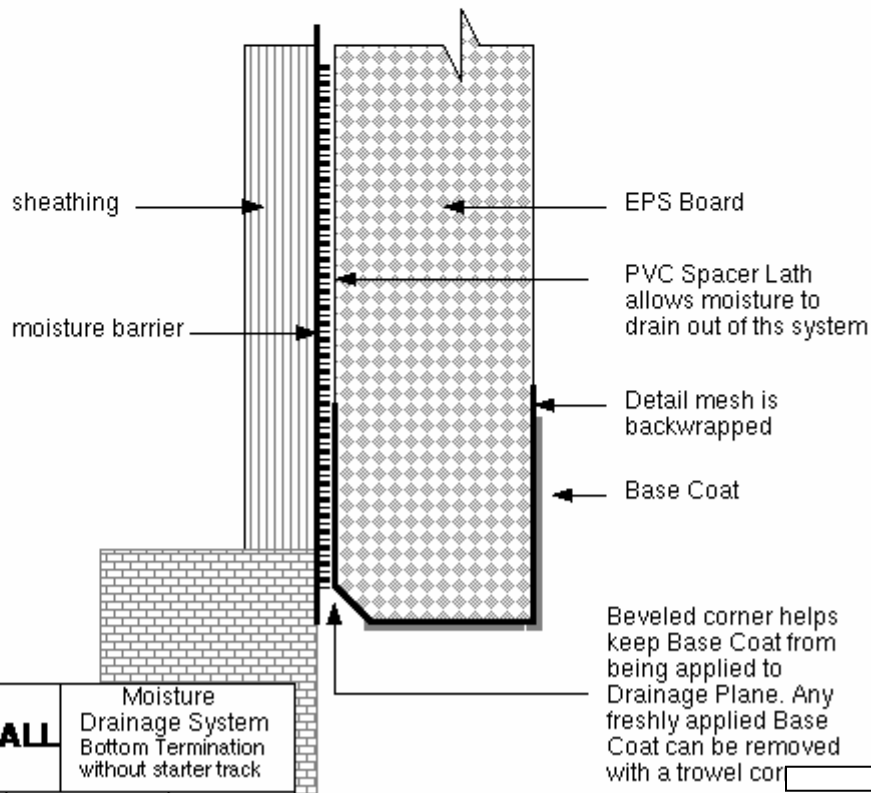


TOTAL WALL		Typical Moisture Drainage Soffit Termination
Revision Date	Original	Code No.
	10/10/01	MD 8.00

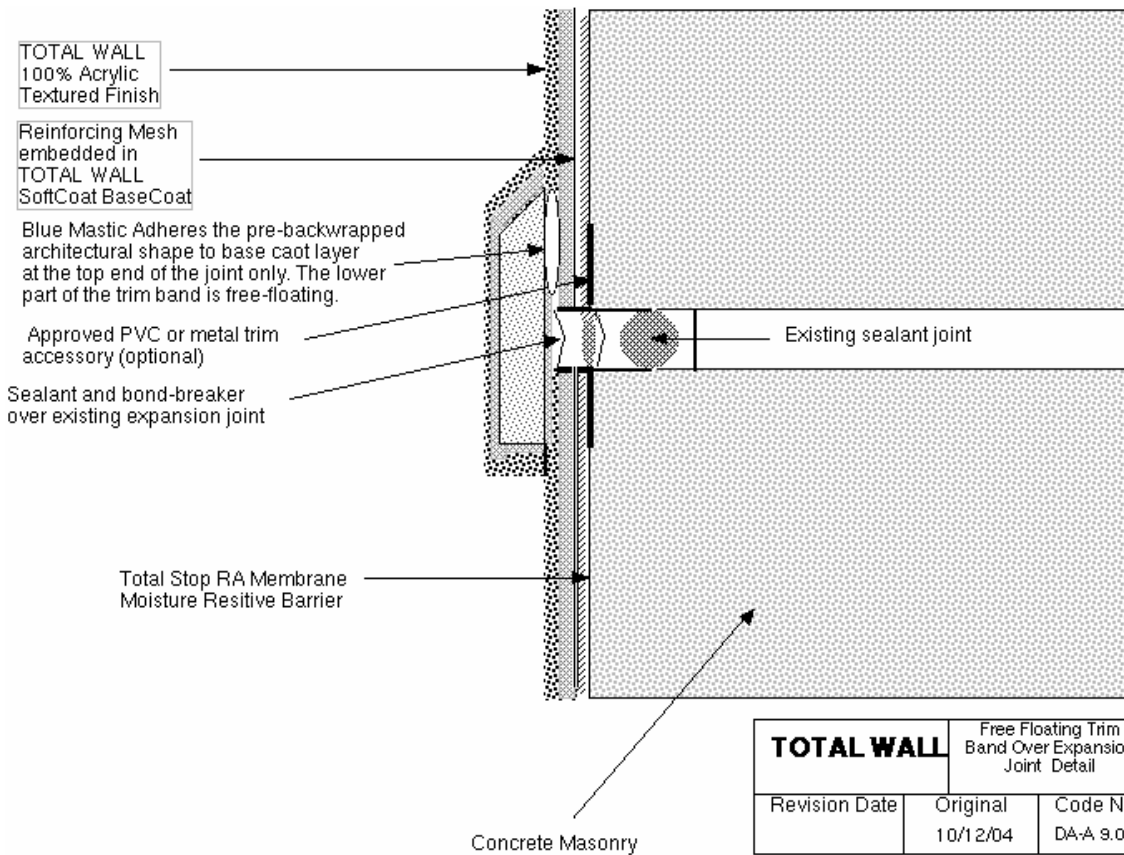


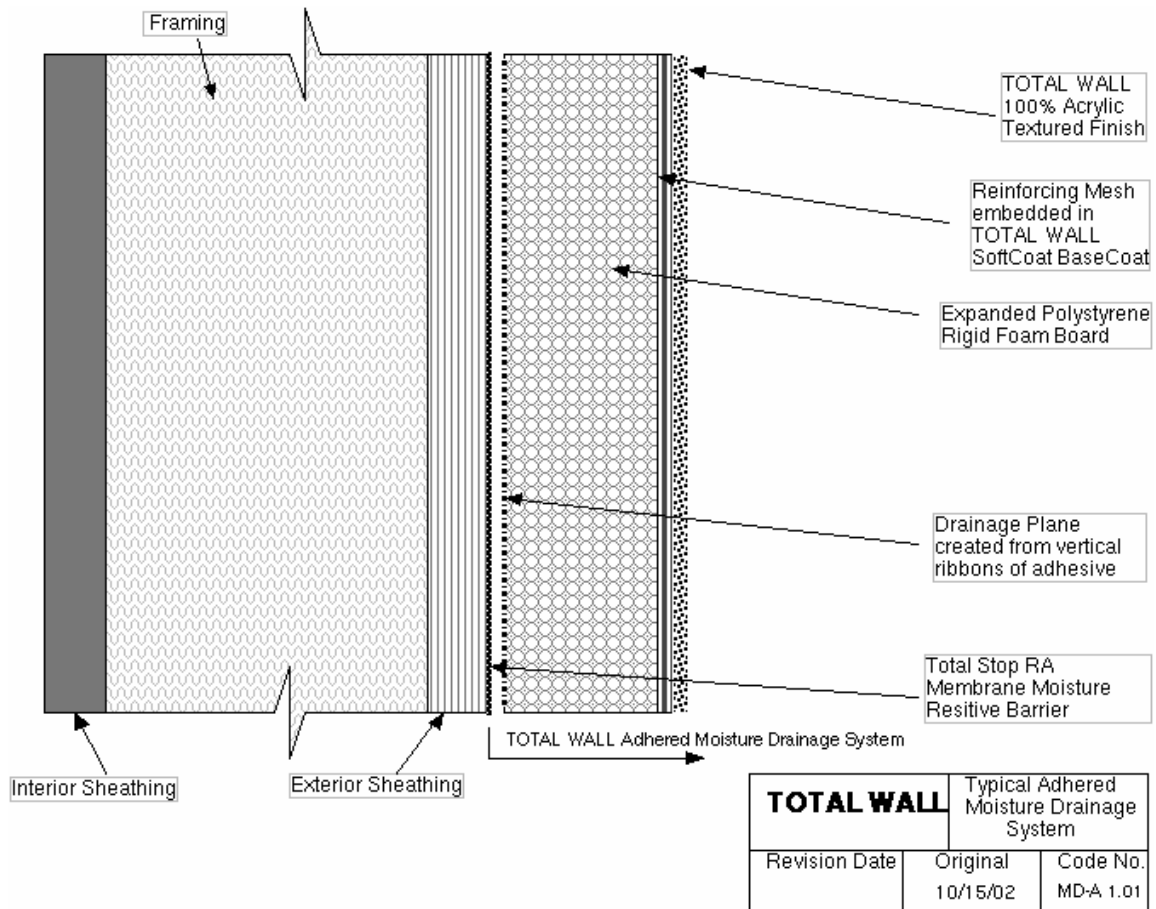


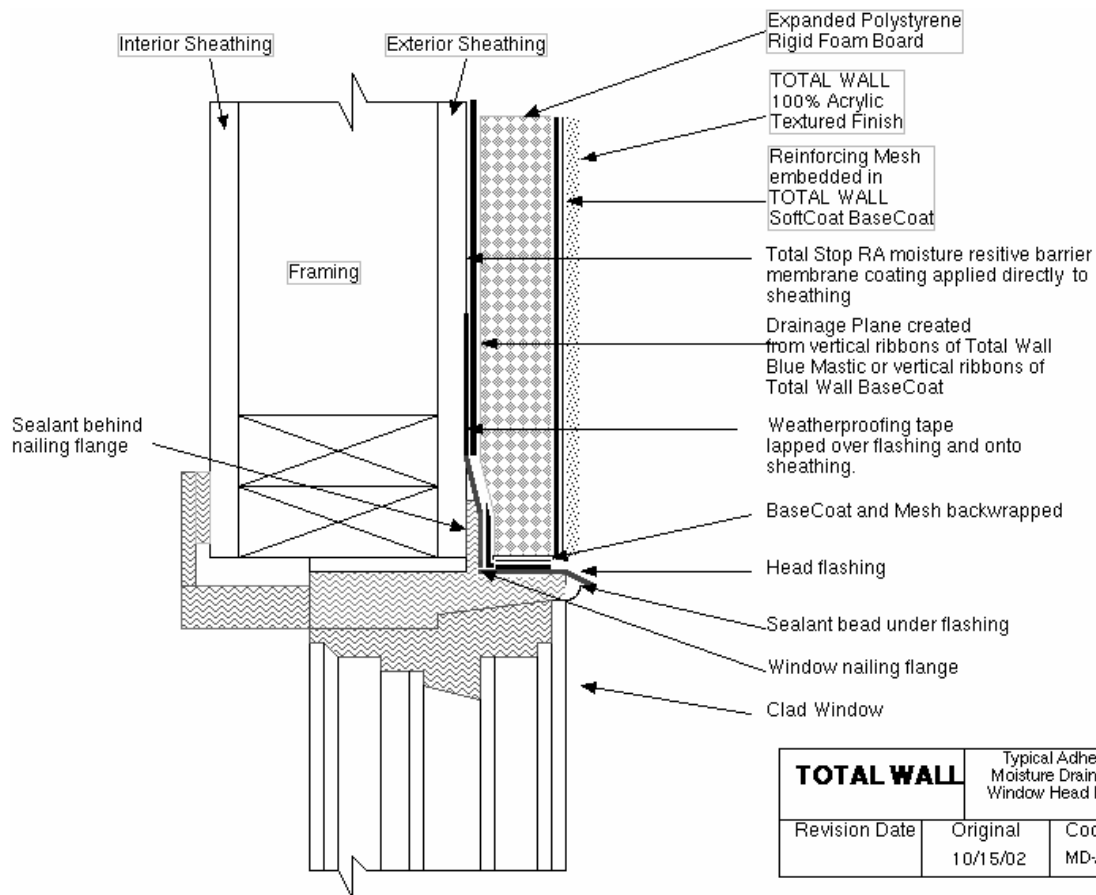
Rasp Back lower corner to make a bevel about 1" wide and about 45°

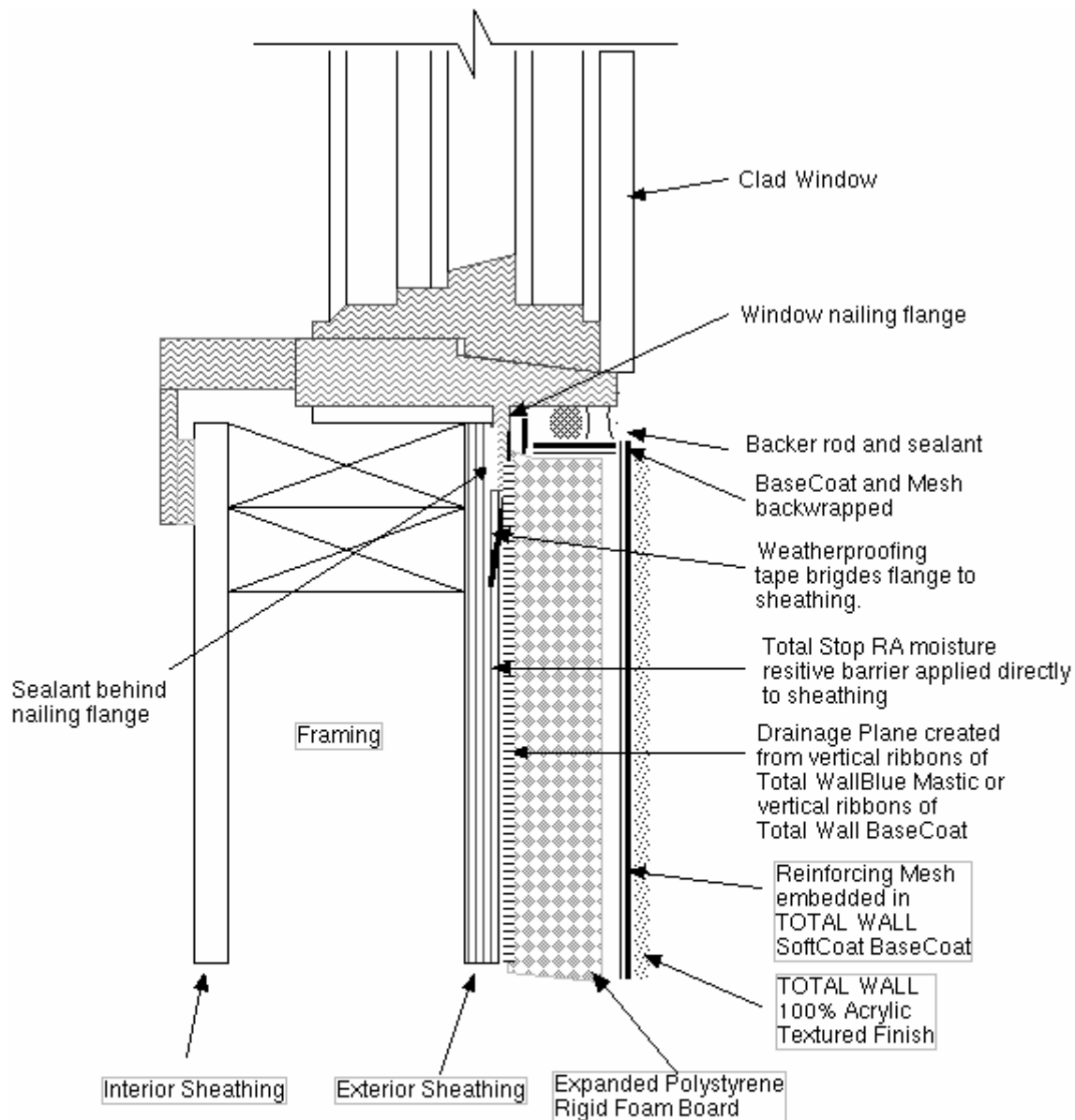


TOTAL WALL 3-15-05 Revision Date		
Moisture Drainage System Bottom Termination without starter track		
Original	6/14/99	Code No. MD 9.51

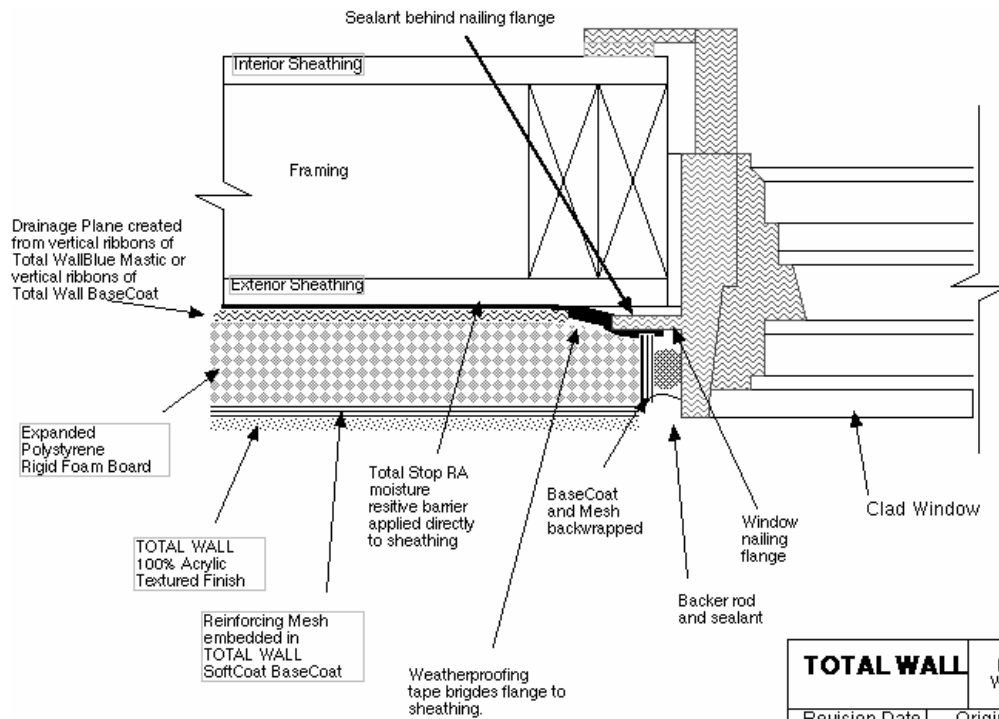




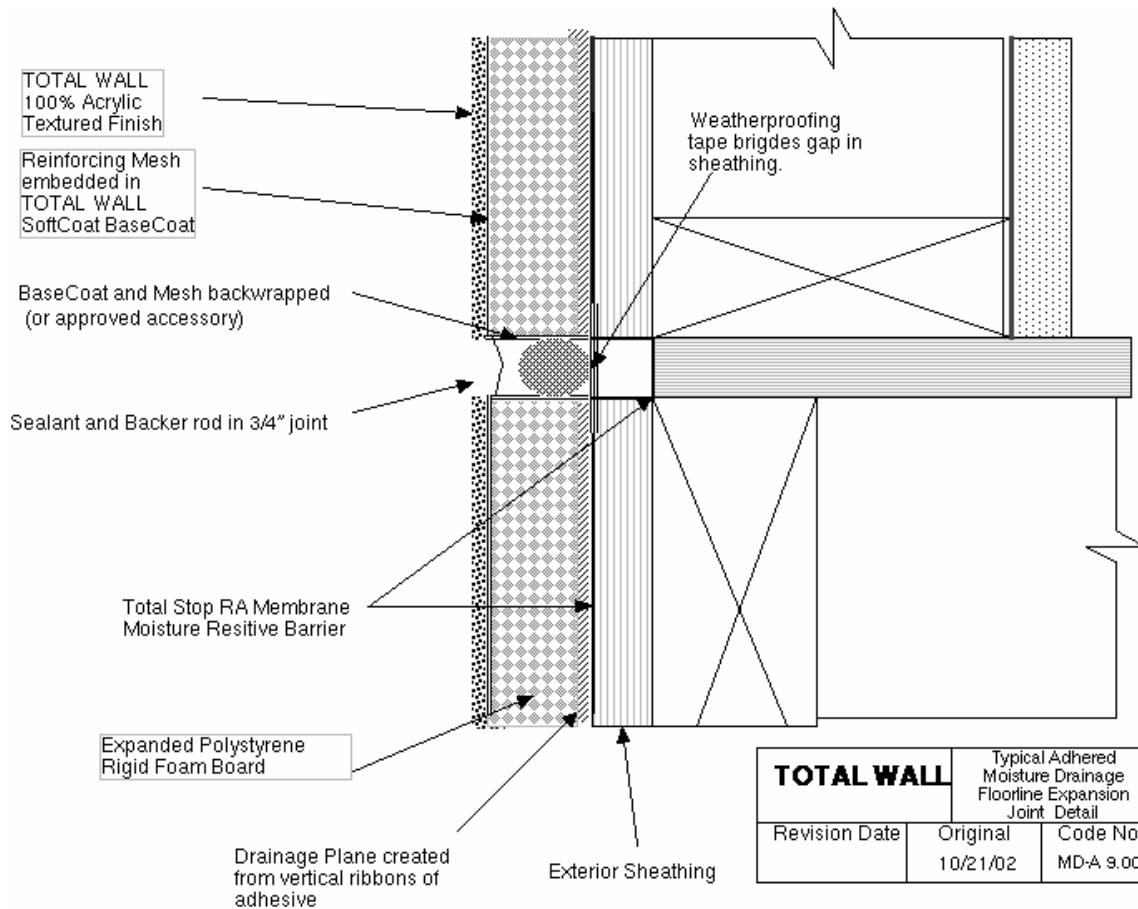


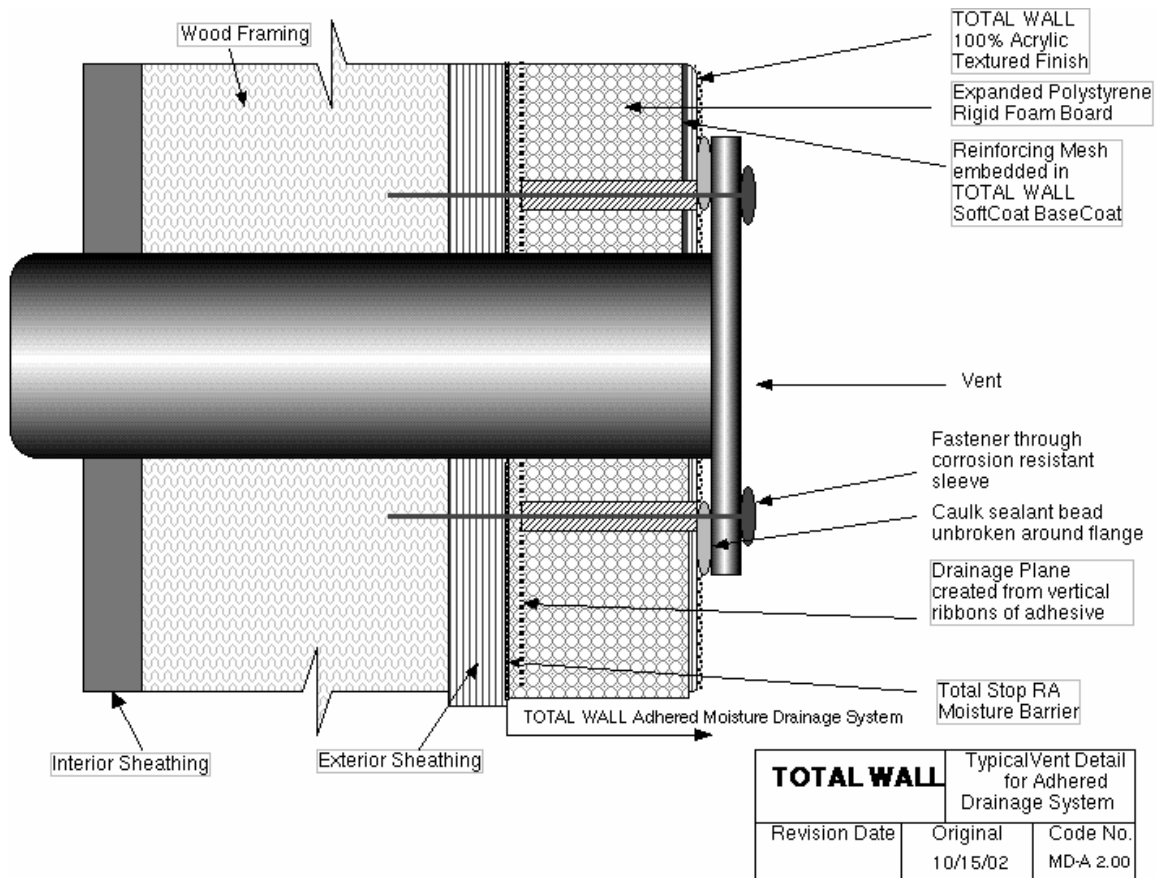


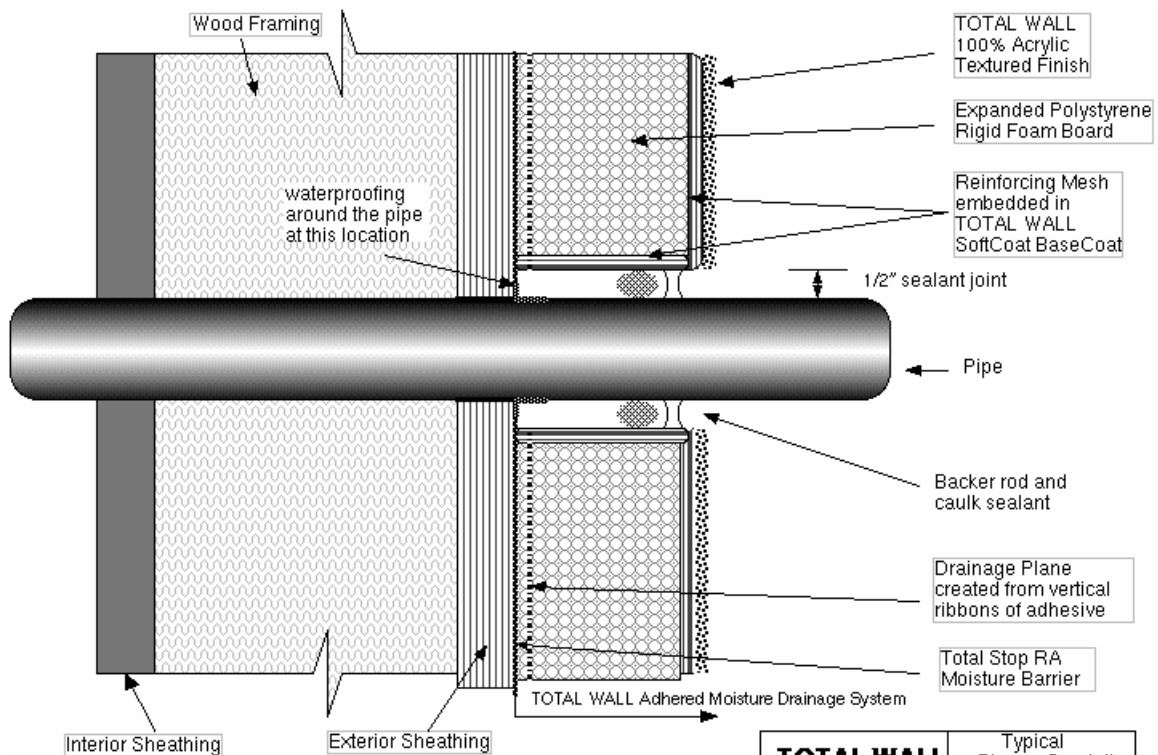
TOTAL WALL		Typical Adhered Moisture Drainage Window Sill Detail
Revision Date	Original 10/15/02	Code No. MD-A 1.03



TOTAL WALL		
Typical Adhered Moisture Drainage Window Jamb Detail		
Revision Date	Original	Code No.
	10/21/02	MD-A 1.04







TOTAL WALL		Typical Pipe or Conduit Penetration
Revision Date	Original	Code No.
	10/15/02	MD-A 7.00

MOISTURE

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■ moisture drainage MD eifs system ■

5

system analysis and inspections

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Job Tips

- Protect your wall application from adverse weather conditions.
- Store job materials under cover and protected from temperature extremes.
- Stage your job to take advantage of sun and shade at different times of the day and ambient temperatures.
- Supply enough man-power to maintain a continuous application of basecoat and finish coat to natural wall stops.
- Insure consistent texturing and floating of the finish coat on the entire job.
- Group pails of finish coat by lot (batch) number. When changing lot numbers, mix the last two pails of current lot number with two pails of the next lot number. This will blend any subtle differences that could exist between different lots of materials.
- Always use fresh and clean job materials. These materials include water, Portland cement (when required), and sand (when required).
- When adjusting workability of any material by water addition, record the amount of water added and maintain consistent adjustments. Make small adjustments in workability rather than risking an over-adjustment by adding too much water at one time.
- Thoroughly mix all hand applied materials and products before use.
- Use clean mixing vessels and tools to avoid contaminants such as rust, grease or left-over product from previous jobs.
- Protect windows, doors, roof sections, plants and any other areas that could be affected by spills or spatters.
- Clean spills and spatters as soon as possible, especially on non-protected surfaces.
- Maintain good housekeeping practices at all times; keep tools and equipment clean and well maintained.
- Keep yourself and everyone on the job conscious of safety. Keep material safety data sheets available at the job site.

TOTAL WALL EIFS Step-By-Step Check List for Total Stop RA (liquid-applied membrane system)**Moisture Drainage MD Installation Inspections**

Note all deviations or concerns in the margins or on the back of this page. It is helpful to include photographs and sketches to augment this form. Mark "N/A" next to any item that does not apply.

PRIOR TO APPLICATION

- ☐ 1. The Substrate is flat (no deflections >1" in 16 feet).
- ☐ 2. The substrate is sound (no spalls, voids or weak areas).
- ☐ 3. Flashing is properly installed (rooflines, chimneys, dormers, ledger boards, etc).
- ☐ 4. Kick-out flashing is properly installed. (How many .)
- ☐ 5. A 3/4" gap in sheathing at each floor line (wood construction).
- ☐ 6. Windows code compliant. (Manufacturer and type .)
- ☐ 7. Windows properly installed and flashed.
- ☐ 8. Balconies, decks and other projections properly prepared.

TOTAL WALL EIFS APPLICATION

- ☐ 1. All materials supplied by TOTAL WALL are in original unopened containers and protected from sunlight and freezing conditions.
- ☐ 2. Weather check (above 40 F and protected from precipitation).
- ☐ 3. EPS meets ASTM and TOTAL WALL specifications.
- ☐ 4. Moisture barrier properly installed (terminations bridged with waterproofing tape.)
- ☐ 5. Drainage plane properly created over Total Stop RA with vertical ribbons of Total Wall base coat adhesive.
- ☐ 6. Butt EPS boards (fill gaps with slivers of foam or EnerFoam spray urethane foam).
- ☐ 7. Vertical ribbons of base coat adhesive properly bonded to substrate and EPS board.
- ☐ 8. Proper back-wrapping at all terminations (windows, doors etc).
- ☐ 9. Head flashing installed at windows and doors.
- ☐ 10. Overlap runs of Soft Coat mesh (minimum 2 1/2" overlap).
- ☐ 11. Expansion joints (floor lines in wood frame, or change in substrate).
- ☐ 10. System held back 1/2" at all penetrations (for backer rod and caulk).
- ☐ 12. Base Coat applied in 1/16" level thickness.
- ☐ 13. Minimum 6:12 slope on all exposed EIFS.
- ☐ 14. System held back 8" from grade.
- ☐ 15. System held back 2" from roof shingles.
- ☐ 16. Proper lower termination using either PVC weep track or special TOTAL WALL angled back-wrap detail.

SEALANT APPLICATION

- ☐ 17. Install backer rod and sealant (Sealant/primer used).
- ☐ 18. Sealant Manufacturer instructions followed.
- ☐ 19. Sealant bonded to Base Coat.
- ☐ 20. All joints and penetrations properly sealed.

FINISH APPLICATION

- ☐ 21. Apply and texture TOTAL WALL Finish.
- ☐ 22. Finish applied uniformly with adequate labor and equipment.
- ☐ 23. EIFS maintenance instructions left with building owner.

Printed Name:

Title:

Signed:

Date:

Maintenance and Repairs of TOTAL WALL Systems

Your Total Wall exterior wall cladding is designed to be a low maintenance system. TOTAL WALL Finishes are equipped with a patented dirt resistance to maintain a clean surface for many years. TOTAL WALL Finishes are also protected with agents that prevent growth of mold, mildew, algae and bacteria on the wall. Finally, TOTAL WALL Finishes use materials that are stable against all weather and exposure conditions. However, any surface may become dirty, stained or damaged over time. Here are some suggestions for routine maintenance and repairs.

Cleaning - Should the surface need to be cleaned, exterior cleaning can be done with a low pressure washer and a small amount of mild (non-phosphate) cleaner, followed by a clear water rinse. The best cleaner to use is a dilute solution of Borax in warm water with a little Joy or Ivory liquid soap. If necessary, light scrubbing can be done with a soft brush. Do not use high-pressure spray equipment as it may damage the finish. Mold and mildew growth is very rare on TOTAL WALL Finishes. Should you ever encounter mold or mildew on a wall, clean the wall with a solution of: 1 quart bleach, 3 quarts water, ¼ cup Borax, and 1 ounce Ivory liquid. Use only fresh solution. Dissolve the borax in water before adding bleach. Wear safety goggles and full clothing protection including gloves. Protect plants and sensitive materials from over-spray. Use a low-pressure spray (such as a Hudson sprayer) and wet the wall. Allow the cleaner to work for 3-5 minutes then rinse with clear water.

Changing the Color - Occasionally, re-coating may be desired for a fresh look or color change. In this instance, re-coating is done with one or two coats of T-Wall Lastic available from TOTAL WALL. T-Wall Lastic will provide a fresh color coat and additional weather resistance while maintaining the stucco look and texture of the existing system. Using T -Wall Lastic will also maintain the integrity of the system.

Repairing Damage - TOTAL WALL recommends that damage be repaired by an approved EIFS or stucco professional. If a section of EIFS becomes damaged, torn or punctured, repairs can be made by the following procedure:

1. Cut out the damaged section (including the foam insulation board) in the shape of a rectangle. If this is a Moisture Drainage System, do not cut through the moisture barrier.
2. Next, grind off an additional 2 inches of finish in a perimeter around the rectangle shaped hole you made in step 1.

Cut a piece of polystyrene foam insulation board to fit snugly into the rectangle hole. The insulation board must be the same type and thickness as the foam board that was removed.

3. If this is a “Barrier EIFS” System, apply a small amount of TOTAL WALL Blue Mastic adhesive onto the substrate and gently press the piece of foam board into the rectangular hole. If this is a Moisture Drainage System or Hard Coat System, use a proper mechanical fastener to attach the piece of foam to the substrate.
4. Cut a piece of reinforcing mesh in a rectangular shape, 3 inches wider and 3 inches longer than the rectangular hole. This will allow a 1.5-inch overlap of mesh onto the sanded border on all sides of the rectangular hole.

Maintenance and Repairs of TOTAL WALL Systems - continued

5. Embed the reinforcing mesh with TOTAL WALL Soft Coat basecoat and remove the excess so that the mesh pattern is barely visible.

6. Allow the TOTAL WALL Basecoat to cure for 24 hours.

7. Tape off repair area with masking tape and apply original TOTAL WALL finish in the same color and texture. Feather and float the repair to match the original finish as close as possible. Remove masking and touch up texture.

Allow the repair to cure (protected from precipitation) for 24 hours.

Small repairs to hard coat stucco that has a synthetic finish can be made in a similar manner using polystyrene foam and soft coat mesh. Alternatively, the cut out section can be filled and repaired with multiple layers of Portland cement stucco. This is accomplished by allowing each layer to dry before the next is applied. The finish or outer layer of stucco must be reinforced with fiberglass mesh, which laps onto the existing stucco by at least 1.5 inches.

Inspections - In general, it is good maintenance practice to have the building inspected every few years. The purpose of the inspections is to identify and correct any problem areas before they have a chance to allow damage to occur.

In addition to professional inspections, the homeowner or building owner can also perform routine visual inspections. Routine visual inspections are recommended every six months. Here is a suggested list of items for routine visual inspections:

1. Check sealant joints for condition of sealant and that sealant is bonded to both sides.
2. Check surface of finish for cracks, delamination, efflorescence or blisters.
3. Press on the surface of the system with palms of hands to find any spongy or soft areas.
4. Make sure all flashings are properly installed and functioning. Examples of some flashings are: kickout diverter flashing, deck ledger board flashing, and window and door head flashing.
5. Inspect all exposed utility penetrations for proper sealant or gasket condition.
6. Inspect the lower termination for condition and proper attachment.
7. Check all roof terminations, chimney caps and roof flashing for condition.

For both the routine and professional inspections, the date of the inspection and results of the inspection should be recorded. If possible, a set of photographs can be taken to accompany the inspection write-up. Any questionable areas that are discovered during an inspection should be addressed as soon as possible. For additional technical assistance, you may call your local Total Wall Distributor, your Total Wall Applicator or you may call Total Wall Customer Service at 888-702-9915. You may also visit our website at www.TotalWall.com.

MOISTURE

d r a i n a g e

■ moisture drainage MD eifs system ■

system warranties

6

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Warranty Program Abstract

TOTAL WALL's Warranty Program has two service levels. The two levels of Warranty are designed to service two market needs.

The first service level is a 5 Year Material Warranty. This service level accommodates the existing EIFS (Exterior Insulated and Finish Systems) industry standard practices. An application is eligible for a 5 Year Materials Warranty from TOTAL WALL if the installation is done by an Approved Applicator in accordance with current installation documents. The Approved Applicator is someone who has satisfactorily demonstrated experience and competence in installing the particular EIFS and holds a Letter of Acceptance from TOTAL WALL. TOTAL WALL reserves the option to have 3rd Party Inspectors or Corporate Technical Personnel present during any application.

The second service level is a 10 Year Material and Labor Performance Warranty. This service level accommodates the growing requirement for a source responsibility of the building envelope performance. An application is eligible for a 10 Year Materials and Labor Performance Warranty from TOTAL WALL if it is done with a Certified Applicator in accordance with current job installation documents. The Certified Applicator is an individual who has: attended a TOTAL WALL training seminar on the system to be installed, passed the written test, and successfully completed at least one field installation under the observation of a TOTAL WALL Trainer. The TOTAL WALL Certified Applicator holds a Training Certificate and a Photo Identification Badge. TOTAL WALL reserves to option to have 3rd Party Inspectors or Corporate Technical Personnel present during any application.

It is our desire to provide the marketplace with quality materials and reliable installation of these systems. Further, it is our position to fully support our program with solid Warranties. The three components to the success of our program are: 1. quality materials, 2. knowledgeable installers, and 3. field inspection and record keeping. If you have any questions about our program, please call us at 888-702-9915.

TOTAL WALL APPLICATION FOR WARRANTY

Date of Application _____

This form is an application for a Total Wall Warranty. This form is to be initiated prior to installation of materials to provide opportunity for design review and third party inspection, at the option of Total Wall. Total Wall reserves the right to have any project inspected by a Total Wall agent or third party inspector. At the conclusion of the installation, this fully completed form along with a completed Total Wall system inspection checklist should be faxed to 352-629-2070. The approval of the application for Warranty and subsequent issuance of a Warranty Document is contingent upon project completion in accordance with Total Wall specifications, and receipt of payment for Total Wall materials. For assistance, please call 888-702-9915.

Length and type of warranty applied for _____

Distributor _____ Sales Rep. _____

Building Name / Project Description _____

Project Address / Location: _____

Building Owner and Phone No. _____

Architect _____ General Contractor _____

Age of Building _____ Type Construction _____

Project Start Date _____ Square Footage _____

Total Wall Applicator Firm _____

Address and Phone No. _____

Name(s) of Qualified Installers _____ Completion Date _____

SYSTEM INFORMATION:

System Type _____ Substrate _____

Date project was inspected _____ Individual(s) inspecting _____

Fill in the following information where applicable:

Is this a drainage system Y N (circle one) Building Service: Commercial or Residential

Type of moisture barrier _____ Adhesive Type _____

Fastener Type _____ Foam type and thickness _____

Type and weight of fiberglass mesh or metal reinforcement _____

Type of Base Coat or Plaster Base or Admix _____

Primer or Coating or Sealer _____ Sealant and backer _____

Flashings _____ Accessories _____

Type of Finish / Color and Textures _____

Comments and additional information: _____

Total Wall Application for Approved Applicator

Date of Application: _____

This form is an application for licensing as a TOTAL WALL Approved Applicator. This form is intended to be completed and presented to TOTAL WALL prior to the applicant's installation of any TOTAL WALL materials. TOTAL WALL reserves the right to require proof of the applicant's record of experience and/or credentials. Falsification of the information on this form may lead to the immediate cancellation of the license to apply any TOTAL WALL materials. Please complete as many items on this form as possible and fax it to Total Wall at 352-629-2070. If you require further assistance, or if you have any questions, please call 888-702-9915. If the application is approved, the applicant will receive a Certificate officially qualifying the applicant to install TOTAL WALL products. The qualification is issued to an individual and not to a company. TOTAL WALL reserves the option to request 3rd Party Inspection of any installation of TOTAL WALL materials performed by the applicant. An Approved Applicator may upgrade to Certified Applicator status by attending a TOTAL WALL training class and passing the test.

Name of Applicant: _____

Company Name: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone: _____ FAX: _____

The different systems have you installed (PM, PB, Drainage, Stucco, Sprint type, etc):

List the brands of materials you have installed: _____

List all manufacturer certifications (with dates):

Estimate total number of EIFS installations and average square footage:

Additional history with EIFS:

HAVE YOU PERSONALLY APPLIED OR PERFORMED THE FOLLOWING (Circle All That Apply):

- | | |
|---------------------------------|---------------------------------|
| 1. ADHESIVE WITH NOTCHED TROWEL | 2. ADHESIVE WITH RIBBON AND DAB |
| 3. MECHANICAL FASTENERS | 4. BACKWRAPPING |
| 5. RASPED EPS FOAM BOARDS | 6. PLASTIC OR METAL ACCESSORIES |
| 7. EMBED MESH IN BASE COAT | 8. FLOATED SYNTHETIC FINISHES |
| 9. BACKER ROD AND CAULK | 10. USED A DARBY OR SLICKER |

Signature of Applicant: _____

Total Wall Application for Certified Applicator

Date of Application: _____

This form is an application for licensing as a TOTAL WALL Certified Applicator. Falsification of the information on this form may lead to the permanent cancellation of the license to apply any TOTAL WALL materials. Please complete as many items on this form as possible and fax it to TOTAL WALL at 352-629-2070. If you require further assistance, or if you have any questions, please call 888-702-9915. If the application is approved, the applicant will receive a Certificate qualifying the applicant to install TOTAL WALL products. The qualification is issued to an individual and not to a company. TOTAL WALL reserves the option to request 3rd Party Inspection of any installation of TOTAL WALL materials.

Name of Applicant: _____

Company: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone: _____ FAX: _____

What date(s) did you attend TOTAL WALL training: _____

Names of TOTAL WALL Instructor(s) _____

What systems did you learn: _____

What was your test score: _____

Where was the training class held: _____

List the name and location of at least one system installation that you performed that we may inspect. You must have at least 2 years experience to become a certified applicator:

Project location: _____

What Type System: _____ Square footage: _____

Date completed: _____ Materials used: _____

What Finish: _____ Who installed the Caulk Sealant: _____

Comments: _____

Signature: _____

MOISTURE

d r a i n a g e

■ moisture drainage MD eifs system ■

appendix

appendix

Re-Skimming EIFS
When to Prime
Base Coats in Hot Weather
Using Tint Vials
Tyvek StuccoWrap Data
RainDrop HouseWrap
Glossary

Storage of Partial Pails of Finish to be Later Used for Touch-up

Tek Note 0046

To increase the shelf life of touch-up samples or retainers, mist a little water on the surface of the material and around the inner sides and lid of the container before replacing the lid. Do not mix the water into the material, but allow it to rest in a very thin layer on the surface. This will prevent skinning and coagulation and keep the material alive for touch-up purposes for two years or even more. Keep the container in a cool (not freezing) storage area. Avoid high temperatures in storage if possible. If the material is needed for a repair, mix in the water then repeat the storage process.

For additional technical assistance, you may call your local TOTAL WALL Distributor, Total Wall Applicator, or you may call TOTAL WALL at 888-702-9915 or visit our website at www.TotalWall.com.

R1003

Use Of Tint Vials: Since applicators mix TOTAL WALL Finish before use (possible adding some water adjust Workability), they may prefer to tint the finish by adding a vial of pre-measured colorant during mixing. One advantage for adding the colorant to the Finish-base at the job site is the applicator will tint exactly the number of pails required to do the job. That means there will be no extra pails of colored Finish left over. Also, an applicator may carry extra tint vials and extra pails of Finish-base to the job because he can either use the leftover pails of Finish-base on the next job, or return unopened pails to the TOTAL WALL distributor for credit or refund. Therefore, the applicator need never too much or too little Finish on a job.

Tips for the Applicator

1. Order a few extra pails of Finish-base and colorant vials for the job than you think you will need. You always can return unopened pails of Finish-base or save them for another job. Not all Base 4 colors can use tint vials. Some must be factory tinted due to the amount of color in them.
2. Do not tint pails of Finish ahead of time unless you are sure you are going to use them. Tint the pails as follows:
 1. There are three different Finish-base strengths. They are numbered either 1, 3 or 4. Be sure the other words, if the vials reads Base 1, then the pail must read Base 1.
 2. Be sure the colorant vial has the right color name and number.
 3. Open a new pail of TOTAL WALL Finish-base.
 4. Using a clean paint stick or scoop, make an indent in the top of the Finish (as if you were going to put gravy on mashed potatoes).
 5. Open the colorant vial and carefully pour the colorant into the Finish.
 6. Fill the vial half way with water or up to 4 ounces, whichever is least. Replace the cap and shake the vial. Open the vial and carefully add the rinse water to the Finish. Repeat this step until all the color is out of the vial. Save the vials, you can return them to the distributor. Use the paint stick or scoop to loosely blend the surface colorant with some of the Finish. Wipe your stick or scoop clean into the pails. Be sure the colorant stays in the pail.
 7. Insert your jiffy mixer blade deep into the pail and begin mix on slow speed or with intermittent mixing to avoid any loss of colorant. Gradually increase mix speed, scraping the sides and bottom of the pail to insure complete mix. As always, you may add additional water to adjust workability.
3. If you are using both factory tinted and field tinted Finish on the same job, be sure to box two pails of each source of TOTAL WALL Finish to guarantee a uniform transition on the wall.

Tips for the Distributor

1. Use straight wall wide-mouth plastic jars to hold colorant. You can order them from Total Wall (888-702-9915) or a number of other supply houses. We recommend the clear polystyrene jars, although the natural polypropylene, and PVC will work well to. Most colorant formulas will fit into the 4 oz jars, however, some of the darker colors will require more colorant. Therefore, we recommend that you have several 8 oz and a few 16 oz jars on hand.
2. Label each colorant vial with the color name, the color number, the Finish-base number, and the date.
3. Eyeball the colorant vials after filling. They should all have the same level and colors.
4. Record in your colorant journal the color name, the color number, the Finish-base number and texture, the date, the formula, the applicator, the job, and number of vials (jars) tinted.
5. Put the caps on fairly tight and pack them so they are handled and stored upright.
6. If you are reusing colorant vials, remove old labels and markings then clean them and inspect them before use.
7. Each pail should be mixed for 1-2 minutes to make sure all the color is mixed completely.

Base Coats and Hot Weather

Issue # 1041

It is no secret that hot summer weather will shorten the pot life and open time of any base coat containing Portland cement. T-Wall T-2000 Soft Coat Base Coat and T-Wall Foam N' Base Coat Adhesive products are no exception to this rule. Here are tips and product options that will give you more open time while applying Total Wall Base Coats.

Tips

1. Mix the product slightly looser and wetter than you normally would prepare it. Also, always remember to allow the mix to stand for 3-5 minutes and then re-mix to break the false set.
2. When possible, use cool water and a clean mix container. Water in a hose that is lying in the sunlight can get quite hot, therefore let the water run until cool water is flowing. Also, leftover mix from a previous batch can act as a catalyst; therefore try to keep the mix vessel clean, especially in hot weather.
3. Schedule work to take advantage of any shade and cooler morning or late afternoon hours when applying base coat.

Product Options

This is to remind you that there are two product options that are available to extend pot-life and open time of T-Wall T 2000 Soft Coat Base Coat and T-Wall Foam N' Base Coat Adhesive.

1. The first option is to purchase the "Slow Set" version of the T 2000 Base Coat, or the "Slow Set" version of Foam N' Base Coat. Slow Set versions afford a bit more open time. For example, at 80°F you may expect about 20 minutes additional open time when using the Slow Set versions. At 90°F you may obtain about 12 minutes additional open time.
2. The second option is to have Total Wall Base Coat Retarder on hand at the job site. A small amount of Retarder is added during mixing to slow the set of the base coat. Follow the directions carefully and do not over add Retarder.

**** Note - do not add Retarder to Slow Set products.**

SAVE TIME USING Total Wall EZ Base NCB

Issue # 1025

The biggest single cost factor on an EIFS job is not the materials cost. It is time. Time translates into several costs all at once. For example, the costs associated with equipment use, such as scaffolding, are time based. Costs associated with labor are time based, and costs of covering and heating are also time based. Finally, there are often costs in the form of penalties for late completion of work. The profit on an EIFS job lies in the job production. The yardstick of how profitable a job is usually comes down to square footage per day. Once again, we're talking about time on the job. Increasing the job production is where Total Wall EZ Base NCB can often be an asset.

Total Wall EZ Base NCB is a broad performance ready-to-use product. It is an all acrylic coating that is used right out of the pail. Therefore, there is no need for Portland cement, no need for mortar mixers, and the labor normally dedicated to mixing base coat can now be used for other work. That is a savings in time. Another benefit is there is no waste of material due to pot-life. That's because Total Wall EZ Base NCB will not setup until after it is applied on the wall.

HOW MANY WAYS CAN Total Wall EZ BASE NCB BE USED ON AN EIFS JOB?

1. Total Wall EZ Base NCB can be used as the Base Coating to embed the reinforcing mesh. This saves time in mixing.
2. Total Wall EZ Base NCB can be used as the Adhesive to bond the EPS foam boards to many substrates. This saves time in handling additional products.
3. Total Wall EZ Base NCB can be used as the Finish coat. This saves time in waiting for a base coat to cure and also saves time in handling additional products.

Here's how it works as a finish: Total Wall EZ Base NCB can be tinted to meet the desired color for the job just like finish. First the Total Wall EZ Base NCB is applied as the base coat directly over the EPS and the reinforcing mesh is embedded. Then after this base layer of Total Wall EZ Base NCB has had time to stiffen (30 minutes to 2 hours depending on weather conditions) a second pass of Total Wall EZ Base NCB is applied as the finish and texture coat. The textures that can be developed are freestyle, brush, spray or sand textures only. The use of Total Wall EZ Base NCB as the base coat and finish coat as described above can save time amounting to days on some jobs.

Consider Total Wall EZ Base NCB as an option on your next EIFS job bid to get the production edge.

Note- to use Total Wall EZ Base NCB as a finish coat requires a job review and pre-approval by Total Wall before job startup.

The Total Wall Technical Department

Notched Trowel Selection For Applying Total Wall Blue Mastic Adhesive

Using the proper notched trowel will improve both the performance and coverage of Total Wall Blue Mastic Adhesive. Experience tells us that excessive use of adhesive wastes material and slows drying. It also tells us that the adhesive must be applied thick enough to make full contact with the substrate. The idea is to apply properly spaced thin ribbons of adhesive from a notched trowel. The ribbons must be tall enough to compensate for minor dips in the substrate or rigid insulation board. The ribbons must also be spaced properly to have enough adhesive while at the same time provide air channels for faster drying. The result of proper application is to achieve the excellent bond that is the trade mark of Blue Mastic and optimum coverage.

Substrate

Smooth and level sheathing.

Trowel Selection

Rounded 3/16" by 3/8" by 1-3/4".
WindLock item TN 316D or
Demand item TRNT 5.

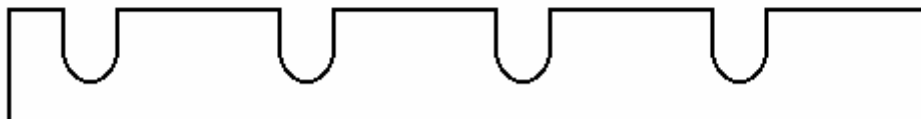


Substrate

Rough and irregular, such as raw
concrete block

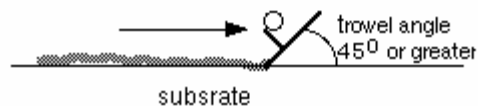
Trowel Selection

Rounded 3/8" by 1/2" by 1-1/2".
WindLock item TN 3815 or
Demand item TRNT 3.



This trowel is
recommended to apply
vertical ribbons of
base coat adhesive
over Total Stop RA

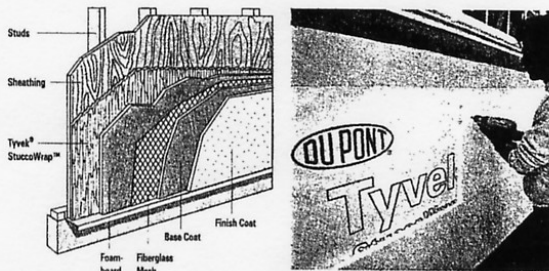
Here's another tip: When applying the adhesive do not allow the trowel angle to drop below 45 degrees.



The Total Wall Technical Department

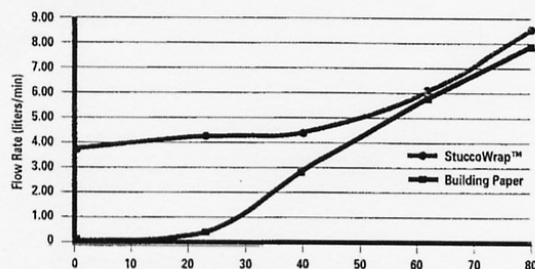
Excellent Drainage for Synthetic Stucco or EIFS

Tyvek® acts as a secondary weather membrane against incidental water that might enter around windows, doors or other joints, and StuccoWrap™ channels it safely to the outside. With StuccoWrap™ between sheathing and the insulating foam board, grooves designed into StuccoWrap™, create a drainage path for water or moisture vapor to escape. Grade D building paper wrinkles as it absorbs water and can create dams that hinder water drainage. The surface texture of StuccoWrap™ was engineered to help transport water and moisture to the outside. Lab tests show StuccoWrap® is **up to 100 times better** than building paper at draining water, even when



no mechanical spacing is used. StuccoWrap™ increases the wall's drying capacity by safely moving incidental water outside. And, because Tyvek® is a breathable membrane, it dissipates potentially damaging moisture vapor. *"After seeing the test results and conducting our own tests we definitely will encourage the use of StuccoWrap® under all USG's water-managed exterior systems, including EIFS", said Jim Reicherts, Product Manager for USG in Chicago.*

StuccoWrap™ vs. 60-min Building Paper Drainage Demonstration

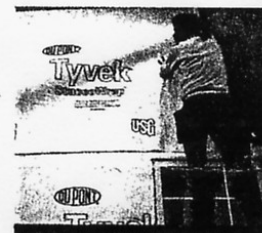


Outstanding Protection Against Water, Moisture Vapor And Air Infiltration

Stucco is susceptible to fractures and cracking. Cracking not only occurs during curing, but also during expansion and contraction of sheathing or wood studs. Water and moisture get behind stucco potentially causing mold, mildew and damage to sheathing, insulation or framing. Grade D paper can absorb water and deteriorate over time—reducing the secondary protection against air, water and moisture. Water can't degrade Tyvek® StuccoWrap™. An outstanding secondary barrier to air and water, and your best defense against damaging in-wall moisture, Tyvek® StuccoWrap™ belongs under stucco.

Installation Is Easier

StuccoWrap™ is much easier to install than building paper. It's more pliable, so it wraps around corners easier. It's lighter weight. Easier to handle. Faster to install. Because it's flexible, Tyvek® easily interfaces at joints and over architectural elements. Like all Tyvek® weatherization products, StuccoWrap™ has excellent tear strength. Rain on the jobsite? No problem. StuccoWrap® won't absorb water like black paper. It stays strong and stable even when it's wet. Accidental jobsite tears? Repair quickly and easily with DuPont tape.



**RainDrop™**
HOUSEWRAP

Patent Pending

Superior Moisture Management. Outstanding Overall Performance.**• Drainage**

- GreenGuard® RainDrop™ Housewrap drains moisture like no other housewrap.
- RainDrop's unique vertical fiber channels enhance moisture drainage, allowing water to exit the wall system. (Patent pending)

• Air and Moisture Infiltration Barrier

- In addition to providing superior drainage, RainDrop is an air and moisture infiltration barrier. By preventing air and moisture from penetrating the wall cavity, RainDrop preserves the energy efficiency of your home.

• Breathability

- RainDrop's unique construction allows the product to "breathe" so that potentially harmful moisture vapor can escape the wall cavity.

• Quick and Simple Installation

- RainDrop is lightweight, so it is easy to handle.
- RainDrop is translucent, which makes it easy to locate studs, edges, corners, and openings.
- RainDrop can be nailed or stapled.
- RainDrop's green color reduces glare, making it easy to work with on bright, sunny days.

• UV-Stable

- RainDrop is UV-stable up to 4 months until covered.

• Two Convenient Roll Sizes

- RainDrop is available in the following sizes:
 - 9 ft x 100 ft
 - 9 ft x 150 ft

EIFS GLOSSARY

- Acid Wash:** A system of removing efflorescence from our work.
- Adhesive:** A material used to attach the insulation board to the substrate.
- Aesthetic Joints:** A groove cut into EPS board for appearance purposes. It also may provide a place for the applicator to stop and start the application process.
- Aggregate:** A granular material such as natural sand, manufactured sand, vermiculite, or perlite, used in stucco plaster or concrete mixture in the case of exposed aggregate. We hand seed in cement matrix.
- Air Entrainment:** The intentional introduction of air in the form of minute, disconnected bubbles (generally smaller than 1 mm) during mixing of Portland cement plaster to improve flow and workability, or to impart other desired characteristics to the plaster.
- Applicator:** An independent contractor who installs EIFS systems. They are instructed by specific EIFS manufacturers in the handling and use of their products but have no contractual relationship with the manufacturer.
- Arch:** Curved border to opening in the wall.
- ASTM:** American Society for Testing and Materials. An independent organization that is involved with setting standards and practices for all materials, including those used in EIFS. ASTM standards are currently being developed specifically for EIFS construction.
- Backer Rod:** Closed-cell, flexible, polyethylene foam rod. It is sized for specific joint widths and is inserted into a joint cavity to a specific depth from the face of the joint. The rod limits the depth of the sealant joint and helps produce an hourglass sealant shape which helps to distribute stresses in the sealant.
- Backlog:** List of sold and approved work awaiting production start.
- Backwrapping:** The practice of attaching a strip of reinforcing mesh to the wall substrate, adhesively attaching EPS insulation board to the substrate, then wrapping the mesh around to the face of the EPS board and embedding it in the base coat. When the

base coat is applied in this manner and totally encapsulates the system, the system is resistant to water penetration.

Band: Line formed within wall surface by using dissimilar materials, color, texture, pattern or plane.

Batching: Weighing or volumetrically measuring and introducing into the mixer the ingredients for a batch of plaster.

Base Coat: A material applied to the face of the insulation board that functions as the weather barrier.

Blistering: Protrusions on a coat of plaster during or soon after the finishing operation, also bulging of the finish plaster coat where it separates and expands away from the base coat.

Block: A concrete masonry unit, usually containing hollow cores.

Bond Strength: The adhesion developed between plaster and a substrate; the resistance to separation of plaster from other materials it comes in contact with.

Bonding Agent: A compound applied as a coating to a suitable substrate to create a bond between it and a succeeding layer, as between a substrate and a succeeding plaster application, also a compound used as an admixture to increase adhesion at the mortar-substrate interface and increase adhesion and cohesion of the plaster.

Brown Coat: The second coat of the three coat plastering process.

Brown Out: To complete application of a base coat.

Casing Bead: Accessory for plastering work used to trim perimeter of openings and edge work area, when viewed from end looks like a "J".

Cherting: Development of shallow cracks at closely spaced but irregular intervals in the plaster surface.

Chemical Bond: Adhesion between dissimilar materials or between one plaster coat and another that is the result of a chemical reaction.

Class PB System: A class of EIFS where the Base Coat varies in thickness depending upon the number of layers or thickness of reinforcing mesh.

The reinforcing material is glass fiber mesh, which is embedded into the base coat per EIFS manufacturers recommendations and with no mesh color visible. Protective finish coats of various thickness, in a variety of textures and colors, are applied over the base coat.

Class PM System: A class of EIFS where the base coat is applied to a uniform thickness which can range from a nominal 1/4" (6mm) to 3/8" (9mm). The base coat thickness is not dependent upon the number of layers or thickness of reinforcing mesh. The reinforcing mesh is installed over the surface of the insulation board. The base coat is applied over the reinforcing mesh.

Cohesion: The ability of a material to cling to itself.

Consistency: The relative mobility or ability of freshly mixed plaster to flow.

Corner Reinforcement: Metal reinforcement for plaster used at corners to provide continuity between two intersection plaster planes.

Cracks: Breaks in the surface lapings of an EIFS. They can be caused by internal stresses in the wall system greater than the strength of the annula. Some common causes are unclipped mesh, gaps between insulation boards, adhesive between insulation boards, design errors (no expansion joint where one belongs) and concentrated stresses at unreinforced corners of openings and projections through the system.

Curing: Keeping freshly applied plaster moist and at a favorable temperature for a suitable length of time following application to assure satisfactory hydration of carbonation of the cementitious materials and proper hardening of the plaster.

Dampproofing: Treatment of plaster to retard the passage or absorption of water, or water vapor, either by application of a suitable coating to exposed surfaces or by use of a suitable admixture or treated cement.

Darby: A flat wooden or magnesium-alloy tool with handles, approximately 45 in. (1143 mm) long, used to dress or float the second (brown) coat.

Dash Texture: A finish coat of thick cement plaster hand-dashed or machine blown into a well-prepared, uniformly plane surface of brown-coat plaster. Also known as splatter dash texture.

Deflection: The amount of movement in a wall as a result of the loads applied to it. Most class PB EIFS are designed to be applied to substrates that meet L/240 (the ratio of unsupported wall span/240) maximum allowable deflection. **NOTE:** Meeting design criteria and calculation of deflection are the responsibility of the building designer.

Dentil Work: A series of small projecting rectangular blocks usually under cornice.

Divider Strip: Metal or plastic strip used to separate panels or sections.

Double-Back: Application of a second coat of plaster to the first or scratch coat immediately after first coat has attained sufficient rigidity to receive it. Also called double up.

Drip Cap: Projection above window or door opening.

Durability: The ability of Portland cement plaster to resist weathering action, chemical attack, abrasion, and other service conditions.

Efflorescence: A deposit of salts, usually white, formed on a surface the substance emerging in solution from within the plaster and deposited by evaporation.

EIFS: Exterior Insulation and Finish System.

EIMA: EIFS Industry Members Association.

EPS: Extruded Polystyrene. Type I rigid EPS insulation board is typically used in class PB EIFS. Thickness range from 3/4" to 4" (19-100mm) and density is usually 1.0 to 1.6 lb./cu ft. (16 kg/m³).

Expansion Joints: Gaps that extend through the entire depth of the EIFS and allow movement of the wall system without damage to the EIFS. They are usually constructed with expansion joints in the substrate and are sealed with the proper sealant to prevent water intrusion into or behind the system.

Featheredge: A wood or metal tool with a beveled edge and varying in length, used to place the surface of the brown coat and dry rod or dry rake it to better control color in the finish coat.

Finish: A decorative and protective textured coating applied over the base coat.

Flashing: Metal or plastic accessories used to deflect water away from EIFS termination's in the event of water infiltration. They are used at parapet tops, window and door heads, window sills and the like.

Float: A rectangular tool consisting of a handle attached to a base pad of molded rubber, foam plastic, cork, wood, or felt tacked to wood and used to impart a relatively even but still open texture to a plaster surface -- generally second- and third-coat plasters.

Gradation: The size distribution of aggregate particles, determined by separation with standard screen sieves.

Grade: The future of current finished ground line.

Gypsum Sheathing: In EIFS construction, the most common type of sheathing that has been used is exterior grade gypsum sheathing, conforming to ASTM C-79. Glass mat-faced gypsum sheathing conforming to ASTM C-1177 is the preferred type of gypsum sheathing.

Hairline Cracks: Very fine cracks in either random or essentially straight line patterns that are just visible to the naked eye.

hawk: A tool used to hold and carry plaster, generally a flat piece of metal approximately 10 to 14 in. (250 to 350 mm) square, with a wooden handle fixed to the center of the underside.

Inspection: On-site examination of components and installation of an EIFS. Inspection may include review of plans and details; observation and critique of all phases of EIFS construction; quality control testing of components and the system itself; and a complete record of operations, which may be kept on a daily basis and reported as part of the project acceptance process by the owner of the project.

Installation: The application of an EIFS to a substrate.

Insulation: A performed insulating material of a specific type and density that functions to reduce heat flow through the wall and provides the surface to receive the base coat.

Isolation Joint: A joint provided around penetrations through the EIFS system, such as window and door openings, supports, etc. It may or may not incorporate flashing and is sealed with the appropriate backer rod and sealant.

Lamina: The combination of the base coat, embedded mesh and finish. The lamination provides strength and resistance to damage and gives the system its appearance, durability and resistance to water penetration.

Mechanical Bonds: The physical keying of one plaster coat to another coat, or to the plaster bases by means of plaster keys to metal lath, or through interlock between adjacent plaster coats created by scratching the surface in a horizontal direction across walls and at right angles to ceiling supports.

Mechanical Fasteners: A device sometimes used to attach the insulation board to the substrate.

Model Building Codes: Three major code groups exist in the United States. The western states are represented by IBCO (International Congress of Building Officials). In the midwest and northeast, the group is BOCA (Building Officials Code Administrators). SBC (Southern Building Code Congress International) is referred to in the southeast.

Monitor: Laborer on production team.

Mortar Board: Plain flat board used to hold mud ready to use.

Mud: Cement and sand mixture, slung for wet ready-to-apply material.

Paper: RETRO-TEK's slang for asphalt impregnated felt material used as vapor barrier behind steel lath.

Paperback Lath: Felt paper pre-attached to back of lath surface.

Parapet: Uppermost portion of wall where inside of wall extends above roof line.

Parge Coat: Initial application usually without bonding agent over dense, low porosity walls.

Permeability: The relative ability of a specific material to allow the flow of water vapor. EIFS generally have a low resistance to the flow of vapor, so they are considered to have low vapor permeability.

Plasterer: Person who applies our instant Cretex material.

Plastic: Clear, vapor barrier used typically on gyp board and stucco applications.

<p>Plasticizer: An added material that increases the plasticity of a Portland cement plaster. Plasticizing agents include hydrated lime or lime putty, air-entraining agents, and approved fateners.</p> <p>Plasticity: A complex property of plaster involving a combination of qualities of mobility and magnitude of yield value; that property of freshly mixed plaster that determines its resistance to deformation or its ease of molding.</p> <p>Porosity: Ability of wall to absorb water.</p> <p>Primer: A material that may be used to prepare surfaces prior to application of another system component.</p> <p>Quality Control: The inspection and testing of components of a system as well as the system itself, on a program basis.</p> <p>Quoin: French word for solid exterior angle of building usually distinguished from adjoining surfaces by material, texture, color, size or projection.</p> <p>Reinforcing Mesh: Balanced, open weave fabric, treated for compatibility with other materials of the system, which functions to strengthen the system.</p> <p>Restoration: Bringing back to former condition.</p> <p>Retardation: Slowing down the rate of hardening or setting, usually in hot weather, to gain an increase in the time required to reach initial and final set or to develop early strength of fresh plaster.</p> <p>Retarder: An admixture that delays the setting of cement paste and hence of plaster.</p> <p>Retempering: Adding water and remixing plaster that has started to stiffen and become harsh.</p> <p>Rod: Name used by trade for a straightedge used to straighten the face of walls and ceilings by cutting off excess plaster to the plane established by forms, ground wires or screens.</p> <p>Rustification: To make joints conspicuous, deep mortar joints in stone or block walls.</p> <p>Scarifier: A tool with flexible steel lines used to scratch or rake the un-set surface of a first coat of plaster.</p> <p>Scratch Coat: First coat of plaster applied to a surface in two or three coat plastering work.</p>	<p>Sealant: A specially-designed sealant, used with backer rod, to fill joints and make them waterproof. The sealant used must be flexible enough to expand and contract with the wall system while maintaining its bond to both sides of the sealant joint. Low modulus sealants are generally preferred for use with EIFS because of their ability to elongate without imposing high stress at the EIFS/sealant interface.</p> <p>Set: The change in plaster from a plastic, workable state to a solid, rigid state.</p> <p>Slicker: A wood or metal tool with beveled edge used to plane the surface of mortar.</p> <p>Soffit: The underside of a building or staircase.</p> <p>Splatterdash: See "Dash Texture".</p> <p>Staging: Another term used for scaffolding.</p> <p>Styrofoam: Insulating material used in our RCTRO Wall System.</p> <p>Substrate: The surface to which an EIFS is attached.</p> <p>Suction: The capacity for absorption possessed by a substrate or plastered surface. Controlled properly, it is beneficial in developing bond between coats of plaster or of plaster to a base.</p> <p>Termination's: Any place an EIFS ends. Termination's can be window or door openings, the bottom or top of a wall or both sides of an expansion joint. In any case, all termination's must be totally encapsulated with base coat and mesh and a sealant or flashing with appropriate backer rod installed to prevent water infiltration.</p> <p>Texture: The appearance of the finish. It is affected by the aggregate sizes used in the finish as well as the troweling technique used.</p> <p>Trowel: A flat, broad-blade steel hand tool used to apply, spread, shape, and smooth finish Portland cement plaster.</p> <p>Weep Hole: Small openings in wall to permit water escape.</p>	<p>Workability: The property of freshly mixed plaster that determines its working characteristics and the ease with which it can be mixed, placed, and finished.</p>
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