

STEGO® WRAP

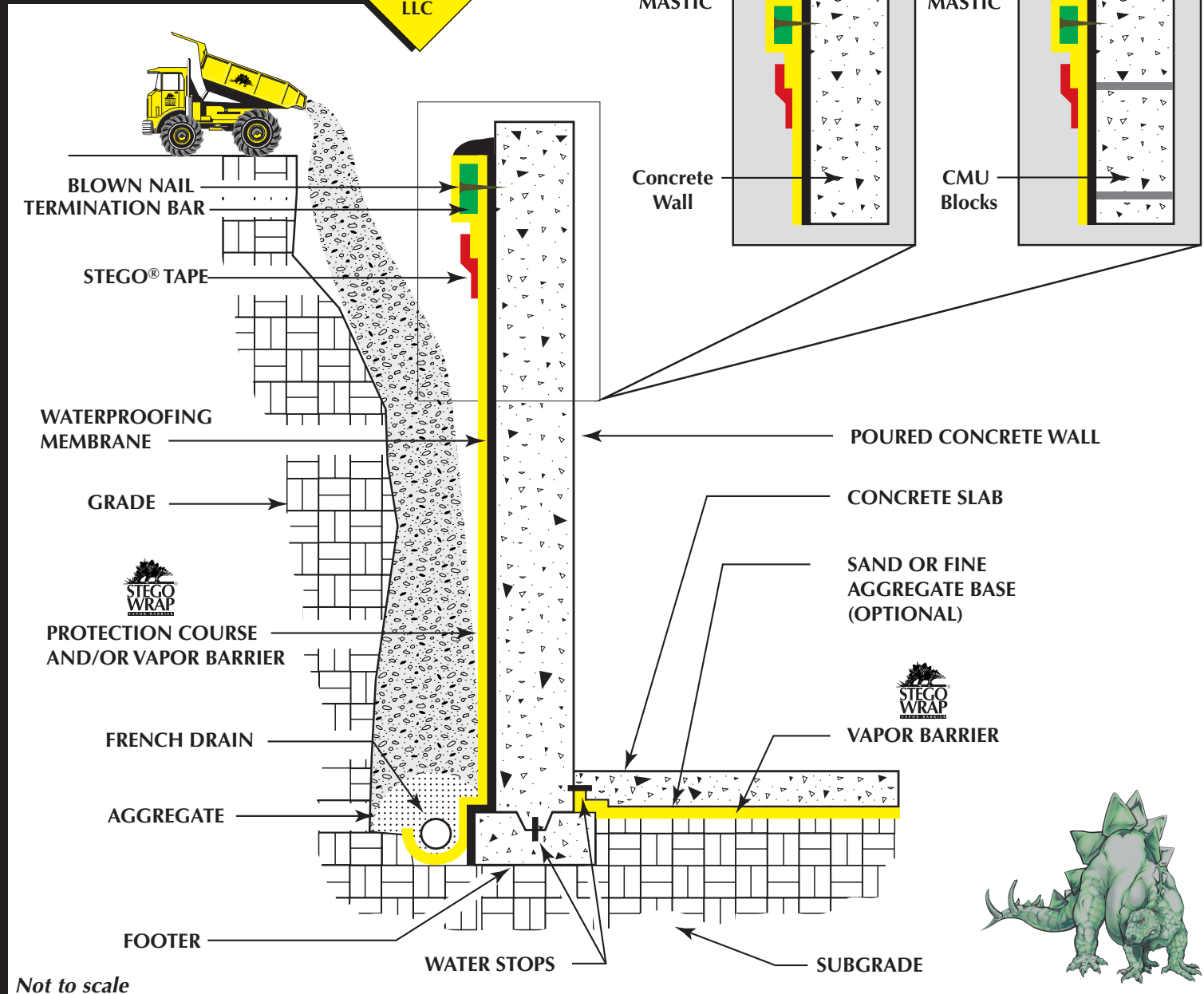
PROTECTION COURSE



STEGO WRAP is a new generation polyolefin film. It is extruded from prime virgin resins on a first melt basis. Since STEGO WRAP never uses recycled or reground material, our batches are consistent providing you with the product we state in our literature.

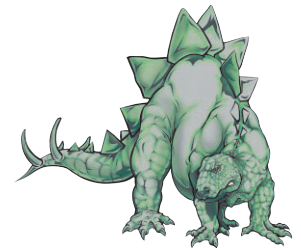
- **Protection Course:** STEGO WRAP has unprecedented puncture resistance as a protection course. It provides as much as 15 times the protection of foam board.
- **Impermeable to water, water vapor & trace chemicals:** STEGO WRAP has a perm rating of 0.01. Water will not penetrate the film. It protects against trace chemicals including sulfates.
- **Organic Protection:** STEGO WRAP protects against micro-organisms in the soil, as well as termites and roots that can get behind the protection course and destroy the integrity of the waterproofing membrane.
- **Durability:** Unlike foam board, STEGO WRAP is impervious to tough job site conditions. It will not crack, tear, or puncture during the backfill process and once buried has an indefinite life span.
- **Superior Installation:** STEGO WRAP comes in large roll sizes which allows for minimum seams. In addition, because all the qualities of STEGO WRAP are contained in a light gauge film, the installation of our material is easy using a termination bar.

Stego Industries, LLC
 27442 Calle Arroyo • Suite A
 San Juan Capistrano, CA 92675
 Toll Free: 1-877-GO-4-STEGO
 Fax: 949-493-5165
 WWW.STEGOINDUSTRIES.COM



Not to scale

PROTECTS AGAINST BACKFILL/COMPACTION/WATER/WATER VAPOR/CHEMICALS/ROOTS/TERMITES/FREEZE THAW





Stego® Wrap Vapor Barrier

STEGO INDUSTRIES, LLC



Vapor Retarders
07260, 03300

Manufacturer

Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

Product Description

USES: Stego Wrap Vapor Barrier is used as a true below-slab vapor barrier, and as a protection course for below grade waterproofing applications.
COMPOSITION: Stego Wrap Vapor Barrier is a multi-layer plastic extrusion manufactured with only the highest grade of prime, virgin, polyolefin resins.
ENVIRONMENTAL FACTORS: Stego Wrap Vapor Barrier can be used in systems for the control of soil gases (radon, methane), soil poisons (oil by-products) and sulfates.

Installation

UNDER SLAB: Unroll Stego Wrap Vapor Barrier over an aggregate, sand or

tamped earth base. Overlap all seams a minimum of six inches and tape using Stego Tape. All penetrations must be sealed using a combination of Stego Wrap Vapor Barrier, Stego Tape and/or Stego Mastic.

VERTICAL WALL: Install Stego Wrap Vapor Barrier over the waterproofing membrane while still tacky. Mechanically fasten Stego Wrap Vapor Barrier to the wall at the top with termination bar and concrete nails. Drape Stego Wrap Vapor Barrier down across the footer and under the french drain.

Availability & Cost

Stego Wrap Vapor Barrier is available nationally via building supply distributors. For current cost information, contact your local Stego Wrap distributor or Stego Industries' sales department.

Warranty

Stego Industries, LLC believes to the best of its knowledge, that specifica-

tions and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. No warranty, express or implied, is given as to the merchantability, fitness for a particular purpose, or otherwise with respect to the products referred to.

Maintenance

None required.

Technical Services

Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or via the website.

Filing Systems

- Stego Industries' website
- Buildsite
- GreenFormat
- 4Specs

Technical Data

TABLE 1: PHYSICAL PROPERTIES OF STEGO WRAP VAPOR BARRIER

PROPERTY	TEST	RESULTS
Under Slab Vapor Retarders	ASTM E 1745 Class A, B & C – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs	Exceeds Class A, B & C
Water Vapor Permeance	ASTM F 1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor	0.0084 perms *0.0035 WVTR
Puncture Resistance	ASTM D 1709 – Test Methods for Impact Resistance of Plastic Film by Free-Falling Dart Method	2326 grams
Tensile Strength	ASTM D 882 – Test Method for Tensile Properties of Thin Plastic Sheeting	79.6 lbf/in.
Permeance After Conditioning (ASTM E 1745 Sections 7.1.2 - 7.1.5)	ASTM E 154 Section 8, F 1249 – Permeance after wetting, drying, and soaking ASTM E 154 Section 11, F 1249 – Permeance after heat conditioning ASTM E 154 Section 12, F 1249 – Permeance after low temperature conditioning ASTM E 154 Section 13, F 1249 – Permeance after soil organism exposure	0.0091 perms 0.0092 perms 0.0089 perms 0.0092 perms
Methane Transmission Rate	ASTM D 1434 – Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting	**149.6 GTR 2.12 x 10 ⁻⁶ perms
Radon Diffusion Coefficient		1.3 x 10 ⁻¹³ m ² /second
Chemical Resistance	ASTM E 154 – Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover	Unaffected
Life Expectancy	ASTM E 154 - Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover	Indefinite
Thickness	ACI 302.1R-04 – Minimum Thickness (10 mils)	15 mils
Roll Dimensions		14 ft. wide x 140 ft. long or 1,960 ft ²
Roll Weight		140 lbs.

Note: perm unit = grains/(ft² *hr* in.Hg) * WVTR = Water Vapor Transmission Rate ** GTR = Gas Transmission Rate





Stego® Tape
STEGO INDUSTRIES, LLC



Vapor Retarders
07260, 03300

Manufacturer

Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

Product Description

USES: Stego Tape is a low permeance tape designed for protective sealing, hanging, seaming, splicing, and patching applications where a highly conformable material is required. It has been engineered to bond specifically to Stego Wrap, making it ideal for sealing Stego Wrap seams and penetrations.

COMPOSITION: Stego Tape is composed of polyethylene film and an acrylic, pressure-sensitive adhesive.

SIZE: Stego Tape is 3.75" wide and 180' long. Stego Tape ships 12 rolls in a case.

Technical Data

APPLICABLE STANDARDS:

Pressure Sensitive Tape Council (PSTC)

- PSTC 101 – International Standard for Peel Adhesion of Pressure Sensitive Tape

American Society for Testing & Materials (ASTM)

- ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs

Installation

SEAMS:

Overlap Stego Wrap six inches and seal with Stego Tape. Make sure the area of adhesion is free from dust, dirt and moisture to allow maximum adhesion of the pressure sensitive tape.

PIPE PENETRATION SEALING

- 1) Install Stego Wrap around pipe by slitting/cutting material

- 2) If void space around pipe is minimal, seal around base of pipe with Stego Tape (Stego Mastic can be used for additional coverage)

DETAIL PATCH FOR PIPE PENETRATION SEALING

- 1) Cut a piece of Stego Wrap that creates a six inch overlap around all edges of the void space
- 2) Cut an "X" in the center of the detail patch
- 3) Slide detail patch over pipe, secure tightly
- 4) Tape down all sides of detail patch with Stego Tape
- 5) Seal around base of pipe with Stego Tape (Stego Mastic can be used for additional coverage)

Stego Tape should be installed above 40 °F

NOTE: See Stego's installation instructions for complete instructions and detailed drawings. Each user should make their own tests to determine the products suitability for their own intended use and shall assume all risks and liability in connection therewith.



Availability & Cost

Stego Tape is available nationally via building supply distributors. For current cost information, contact your local Stego distributor or Stego Industries' sales department.

Warranty

Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. No warranty, express or implied, is given as to the merchantability, fitness for a particular purpose, or otherwise with respect to the products referred to.

Maintenance

None required.

Technical Services

Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or by visiting the website.

Filing Systems

- Stego Industries' website
- Buildsite

TABLE 1: PHYSICAL PROPERTIES OF STEGO TAPE

PROPERTY	RESULTS
Total Thickness	6 mils
Permeance	0.03 perms
Tensile Strength	17 lbs./in. width
Elongation (at break) MD	1060%
Adhesion (20 min dwell ss, PSTC 101)	95-oz./in. width
Ultraviolet Resistance	Excellent





Stego® Mastic

STEGO INDUSTRIES, LLC



Vapor Retarders
07260, 03300

1. Product Name
Stego Mastic

2. Manufacturer

Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

3. Product Description

USES: Stego Mastic is designed to be used as a waterproofing and vapor retardant membrane for use in conjunction with Stego Wrap 10-mil and 15-mil Vapor Retarder/Barrier. Stego Mastic can be used as an alternate to boots for pipe penetrations in Stego Wrap Vapor Barrier. Stego Mastic can also be used as a primary waterproofing for below grade walls. COMPOSITION: Stego Mastic is a medium-viscosity, water-based, polymer-modified anionic bituminous/asphalt emulsion, which exhibits bonding, elongation and waterproofing characteristics. SIZE: Stego Mastic comes in five-gallon buckets.

4. Technical Data

APPLICABLE STANDARDS:

American Society for Testing and Materials (ASTM)

- ASTM D 412 Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers - Tension
- ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover
- ASTM G 23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials (Withdrawn 2000)
- ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
- ASTM D 751 Standard Test Methods for Coated Fabrics
- ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting

- ASTM C 836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
- ASTM E 1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.

5. Installation

PREPARATION:

- A test application simulating the project environment should always be done prior to final usage of Stego Mastic.
- All Surfaces should be dry and free of loose materials, oils and other contaminants. The surfaces should be cleaned in the same fashion as the test surface in order to ensure proper results.

- Store above 40°F

PENETRATIONS:

For small pipe and rebar penetrations in Stego Wrap Vapor Barrier cut Stego Wrap just big enough for the penetration. Liberally apply Stego Mastic around the penetration to keep the integrity of the membrane intact. Stego Mastic can be applied by brush, roller, or sprayer.

NOTES: 1) For larger penetrations or wide cut-outs of Stego Wrap, use Stego Wrap and Stego Red Polyethylene Tape to repair and seal. 2) Solvent-based products should not be applied over this product.

CLEANING:

Clean all tools with kerosene and/or oil-based cleaners.

6. Availability & Cost

Stego Mastic is available nationally via building supply distributors. For current cost information, contact your local Stego distributor or Stego Industries' sales department.

7. Warranty

Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. No warranty, express or implied, is given as to the merchantability, fitness for a particular purpose, or otherwise with respect to the products referred to.

8. Maintenance

None required.

9. Technical Services

Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or by visiting the website.

10. Filing Systems

- Stego Industries' website
- Buildsite

TABLE 1: PHYSICAL PROPERTIES OF STEGO MASTIC

Property and Test	Stego Mastic
Tensile/Elongation, ASTM D 412	32 psi / 3860%
Resistance to Decay, ASTM E 154	9% perm loss
Accelerated Aging, ASTM G 23	No Effect
Permeance, ASTM E 96	0.17 Perms
Hydrostatic Water Pressure, ASTM D 751	28 psi
Methane Transmission Rate, ASTM D 1434	0
Adhesion to Concrete & Masonry, ASTM C 836	7 lbf./in.
Hardness, ASTM C 836	85
Crack Bridging, ASTM C 836	No Cracking
Low Temp Flexibility, ASTM C 836	No Cracking at -20°C
Resistance to Acids:	
Acetic	30%
Sulfuric and Hydrochloric	15%
Temperature Effect:	
Stable	248°F
Flexible	13°F



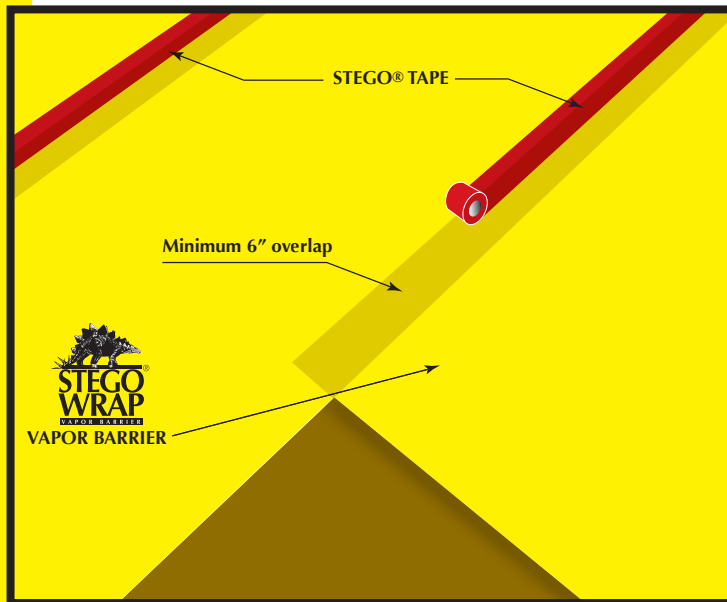
PART 1

STEGO WRAP VAPOR BARRIER/RETARDER INSTALLATION INSTRUCTIONS



IMPORTANT: Please read these installation instructions completely, prior to beginning any Stego Wrap installation to ensure suitable use of the product. The following installation instructions are based on ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.

FIGURE 1: UNDER-SLAB INSTALLATION



UNDER-SLAB INSTRUCTIONS:

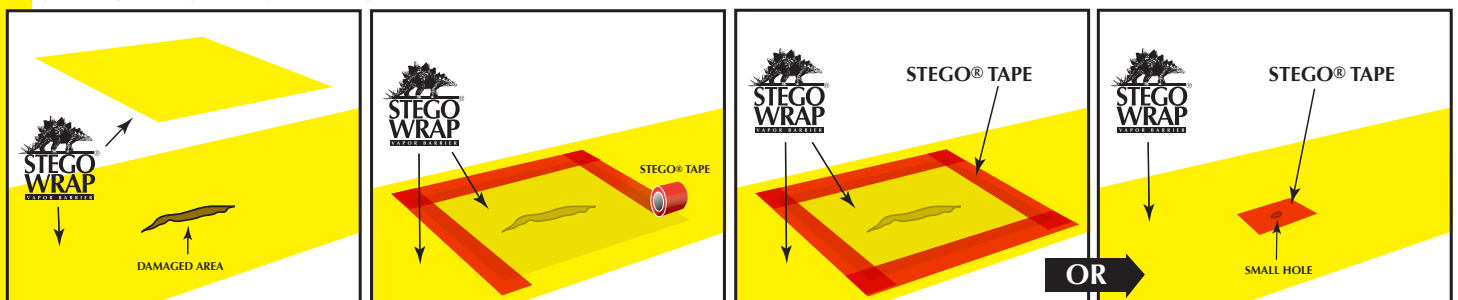
1. Stego Wrap can be installed over an aggregate, sand, or tamped earth base. It is not necessary to have a cushion layer or sand base, as Stego Wrap is tough enough to withstand rugged construction environments.
2. Unroll Stego Wrap over the area where the slab is to be placed. Stego Wrap should completely cover the concrete placement area. All joints/seams both lateral and butt should be overlapped six inches and taped using Stego Tape.

NOTE: The area of adhesion should be free from dust, dirt and moisture to allow maximum adhesion of the pressure sensitive tape.

3. The most effective installation method includes positioning Stego Wrap on top of the footing and against the vertical wall. Stego Wrap will then be sandwiched between the footing, vertical wall and placed concrete floor (see part 2, figure 6a, Basement/Below Grade Wall Installation). This method will help protect the concrete slab from external moisture sources after the slab has been placed.

4. In the event that Stego Wrap is damaged during or after installation, repairs must be made. Stego Tape can be used to repair small holes in the material. For larger holes, cut a piece of Stego Wrap to a size and shape that covers any damage by a minimum overlap of six inches in all directions. Clean all adhesion areas of dust, dirt and moisture. Tape down all edges using Stego Tape (see figure 2, Sealing Damaged Areas).

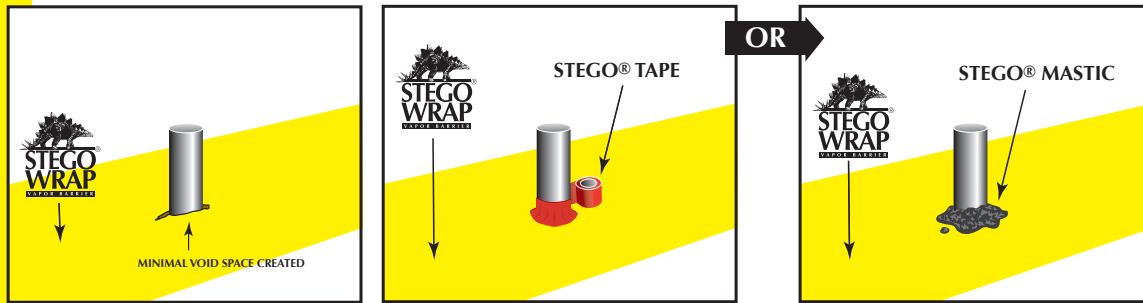
FIGURE 2: SEALING DAMAGED AREAS



NOTE: These installation instructions are based on practices outlined in ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs. These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions, Stego products, or a specific job site situation, please call us at 877-464-7834 for technical assistance.

5. **IMPORTANT: ALL PENETRATIONS MUST BE SEALED.** All pipe, ducting, rebar, wire penetrations and block outs should be sealed using Stego Wrap, Stego Tape and/or Stego Mastic (see figure 3a, Pipe Penetration Sealing).

FIGURE 3a: PIPE PENETRATION SEALING



STEGO WRAP PIPE PENETRATION REPAIR DETAIL:

- 1: Install Stego Wrap around pipe penetration by slitting/cutting material as needed. Try to minimize the void space created.
- 2: If Stego Wrap is close to pipe and void space is minimized then seal around pipe penetration with Stego Tape and/or Stego Mastic. **[See Figure 3a]**
- 3: If detail patch is needed to minimize void space around penetration, then cut a detail patch to a size and shape that creates a six inch overlap on all edges around the void space at the base of the pipe.
- 4: Cut an "X" the size of the pipe diameter in the center of the detail patch and slide tightly over pipe.
- 5: Tape down all sides of detail patch with Stego Tape.
- 6: Seal around the base of the pipe using Stego Tape and/or Stego Mastic. **[See Figure 3b]**

FIGURE 3b: DETAIL PATCH FOR PIPE PENETRATION SEALING

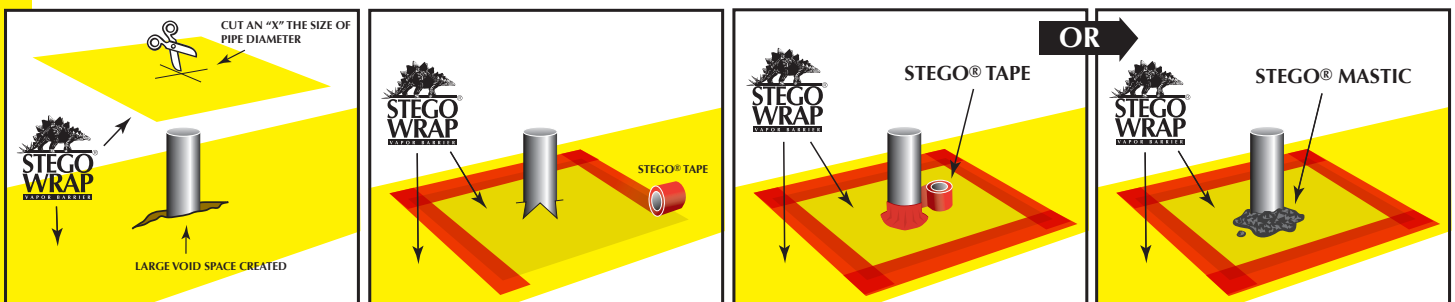


FIGURE 4: MULTIPLE PIPE PENETRATION SEALING



MULTIPLE PIPE PENETRATION SEALING:

Multiple pipe penetrations in close proximity and very small pipes may be sealed using Stego Wrap and Stego Mastic for ease of installation (see figure 4, Multiple Pipe Penetration Sealing).

6. Many vapor retarder manufacturers recommend a cushion layer (fine washed gravel or sand) on top of the retarder before the concrete placement to guard against the possibility of damage due to construction traffic. **This is permissible, but not a necessity with Stego Wrap.** Stego Wrap is strong enough to withstand normal construction traffic without a protective layer. In fact, ACI guidelines and many flooring companies recommend placement of the concrete slab directly on the vapor barrier/retarder. This eliminates the potential for water to be trapped in the blotter layer and ultimately resurfacing through the slab adversely affecting the flooring system.

NOTE: These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding.

REMEMBER: If damaged, Stego Wrap must be repaired using the techniques outlined above.

PART 2

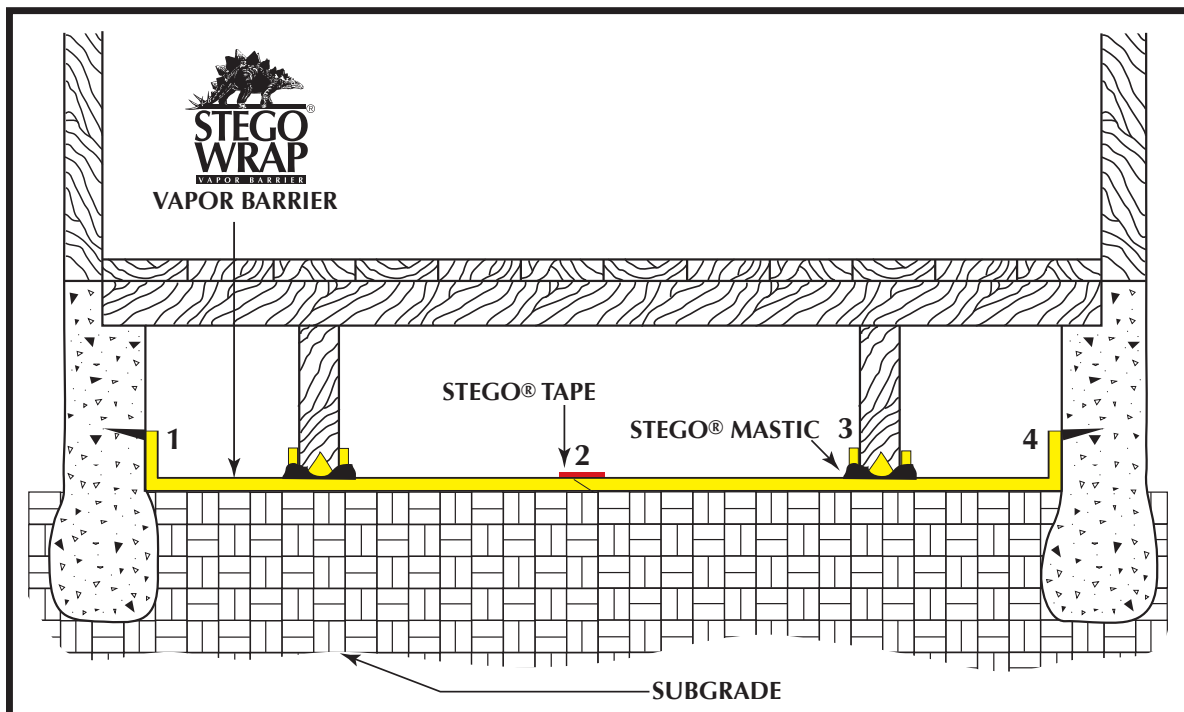
STEGO WRAP VAPOR BARRIER/RETARDER INSTALLATION INSTRUCTIONS



CRAWL SPACE INSTALLATION INSTRUCTIONS:

1. Place Stego Wrap directly over the crawl space floor. If rigid insulation is to be used, install Stego Wrap prior to insulation (under insulation and between the foundation wall and insulation).
2. Overlap seams a minimum of six inches and seal with Stego Tape.
3. Seal Stego Wrap around all penetrations and columns using Stego Tape and/or Stego Mastic.
4. Turn Stego Wrap up the foundation wall to a minimum height of six inches above the outside/exterior grade or in compliance with local building codes and terminate with pressure treated nail strip/termination bar or construction adhesive. If using a nail strip/termination bar, extend Stego Wrap above termination bar and fold back over nail strip/termination bar and tape with Stego Tape to seal nail holes.

FIGURE 5: CRAWL SPACE INSTALLATION



INSTALLATION TIPS:

1. For a cleaner look and to prevent against tenting of Stego Wrap at the foundation wall/foundation floor intersection, consider mechanically fastening Stego Wrap to base of foundation wall in addition to the above mentioned wall termination.
2. To provide additional protection against moisture migration through nail holes, consider applying a layer of Stego Mastic to the foundation wall prior to installing nail strip/termination bar. Allow one hour for Stego Mastic to cure prior to installing nail strip/termination bar.

NOTE: There are well-publicized pros and cons regarding different approaches to vapor barrier placement. Consult local building codes, regulations and ACI guidelines along with the design or architectural firm's recommendations before proceeding.

FIGURE 6a: BASEMENT/BELOW GRADE WALL INSTALLATION

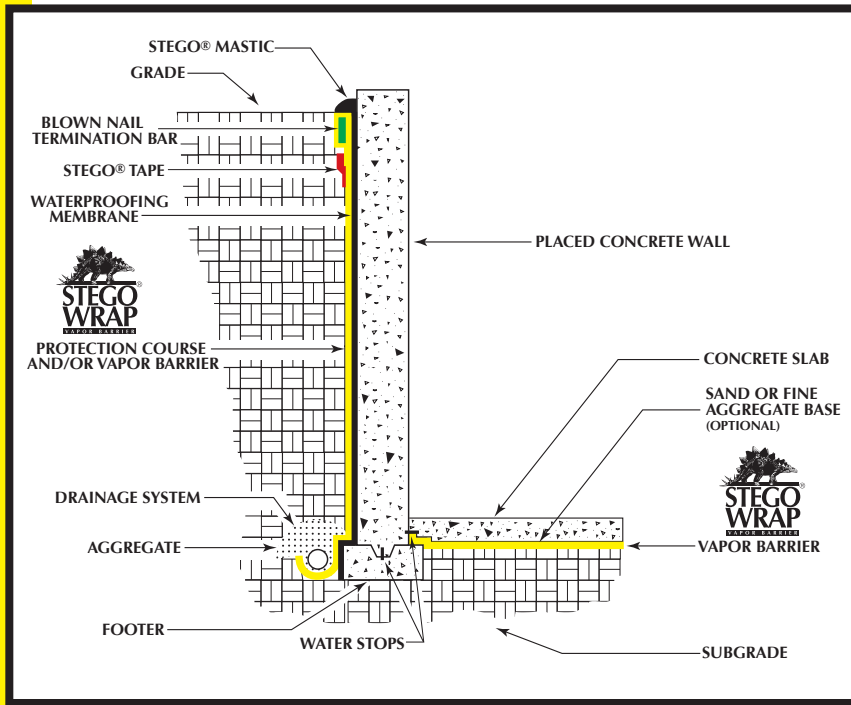
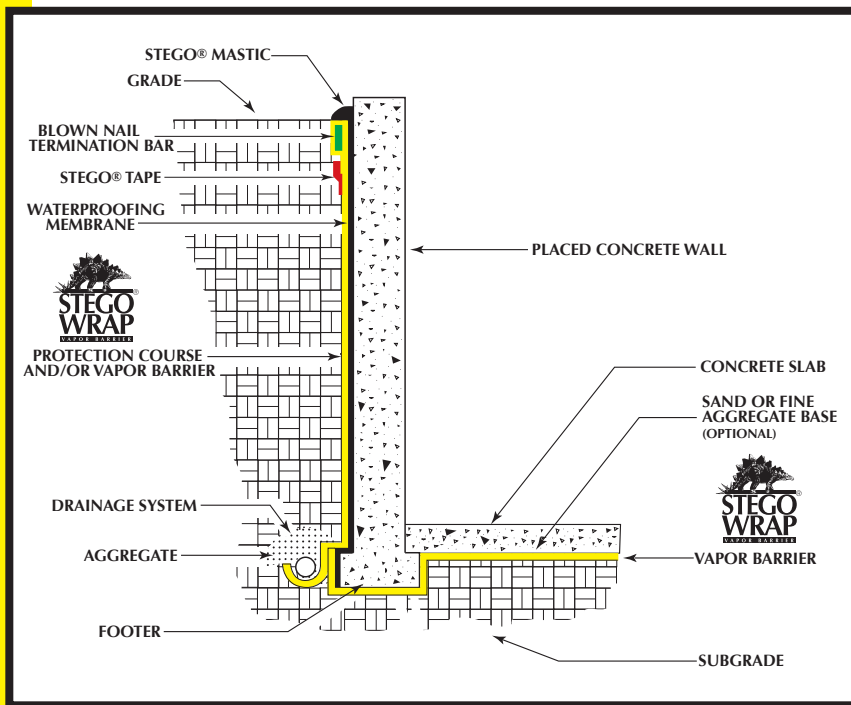


FIGURE 6b: OPTIONAL INSTALLATION FOR FOOTING ENCAPSULATION AND WATERPROOFING TIE-IN



NOTE: These installation instructions are based on practices outlined in ASTM E 1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs. These instructions are meant to be used as a guide, and do not take into account specific job site situations. Consult local building codes and regulations along with the building owner or owner's representative before proceeding. If you have any questions regarding the above mentioned installation instructions, Stego products, or a specific job site situation, please call us at 877-464-7834 for technical assistance.

BASEMENT/BELOW GRADE WALL INSTALLATION:

1. Install an approved waterproofing membrane according to the manufacturer's installation instructions. This may include sheet goods, or liquid applied membranes be they roll, brush or spray.
2. While the membrane is still tacky, install Stego Wrap as a protective course/vapor barrier over the applied waterproofing membrane. Using a termination bar with concrete nails at the termination of the waterproofing membrane is advisable in some applications (see figure 6a, Basement/ Below Grade Wall Installation).
3. Supervised care must be taken during back filling against the material so that it is not damaged or punctured. If damage occurs, patch using the techniques outlined in part 1.

WARNING: Any untreated punctures, tears or damage during back filling will greatly reduce the effectiveness of Stego Wrap as a protection course/vapor barrier.

OPTIONAL INSTALLATION FOR FOOTING ENCAPSULATION AND WATER PROOFING TIE-IN:

1. Install Stego Wrap into footing depression prior to concrete placement.
2. Leave outside edge of footing exposed to allow for primary waterproofing application and tie-in (see figure 6b, Optional Installation For Footing Encapsulation and Waterproofing Tie-In).

NOTE: Consult Structural Engineer prior to footing encapsulation.

