

LETTER OF TRANSMITTAL

DATE: June 26, 2012 VIA: Hand Delivered
SENT BY: Tony Wong SFO Contract 9078A

PROJECT DESCRIPTION: SFO Data Center – Civil Permit Package

COMPANY: Transworld Construction ATTENTION: Rob Acero
ADDRESS: 1178 Folsom St
CITY, STATE: San Francisco, CA ZIP: 94103
CONTENT: DESCRIPTION:

1 set consisting of:
Product Recommendation and Submittal Page
Stego Wrap Vapor Barrier – Product Data
Stego Wrap Vapor Barrier – Installation
Stego Wrap Vapor Barrier – MSDS
Stego Tape – Product Data
Stego Red Tape – MSDS
Stego Mastic – Product Data
Stego Mastic – MSDS

COMMENTS:

Only one set was hand delivered to Transworld Construction. The file has been sent via e-mail as listed below in Cc:. We have also posted this on our FTP site.

The documents have been color scanned

☐ Per your request ☐ For review and approval ☒ For your records
☒ For your use ☒ For distribution ☐ Please respond

Cc: Mark Costanzo, SFO, Project Manger
Ed Stein, SFO Construction Manager
Erik Liu, Transworld
Clarinda Cannon, FEJA



100% EMPLOYEE OWNED

1230 Yard Court, San Jose CA 95133 408/279-7050
SAN JOSE - SAN FRANCISCO - RICHMOND - SANTA ROSA

RECEIVED

JUN 26 REC'D

KENDALL YOUNG ASSOCIATES

PRODUCT RECOMMENDATIONS and SUBMITTALS

Project: San Francisco Airport (SFO) JOB # 13 Submittal Contents: Product Data
Date: 06/08/2012

Section	Sub Section	Product Specified	Product Submitted	Documents Submitted	Notes
☐ NO EXCEPTION TAKEN ☐ REJECTED ☐ SUBMIT SPECIFIED ☐ ITEM		☒ MAKE CORRECTIONS ☐ NOTED ☐ REVISE AND RESUBMIT	Stego Wrap 15-mil Vapor Barrier Stego Tape Stego Mastic	Product Data (2 pg, 1297 kB) MSDS (3 pg, 42 kB) Installation Instructions (4 pg, 1551 kB) Product Data (1 pg, 302 kB) MSDS (3 pg, 124 kB) Product Data (1 pg, 261 kB) MSDS (3 pg, 31 kB)	

Reviewing is only for conformance with the design concept of the Project and compliances with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site for information that pertains safety to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction and for coordination of the Work of all trades.

By: *[Signature]* Date: **6-25-12**
KENDALL YOUNG ASSOCIATES ARCHITECTURE & PLANNING

**ALL MULTI-PIPE PENETRATIONS
SHALL BE SEALED WITH MASTIC.
THE MASTIC MUST BE APPLIED @
ALL GAPS BETWEEN PIPES TO PROVIDE
A COMPLETE BARRIER**



STEGO® WRAP VAPOR BARRIER

ASTM E 1745 Class A-B-C Compliant

STEGO® WRAP VAPOR BARRIER

is made with our proven trade secret blend of prime virgin resins and additives. Stego Wrap Vapor Barrier is an ASTM E 1745 Class A Vapor Barrier (Below 0.01 perms). We focus on producing a product that will maintain its extremely low permeance for the life of a building. The protection of Stego Wrap Vapor Barrier provides the flexibility to change flooring types and overall building use without worrying about below-slab moisture vapor.

FEATURES & BENEFITS

Unsurpassed Permeance Characteristics

Life of the Building Protection

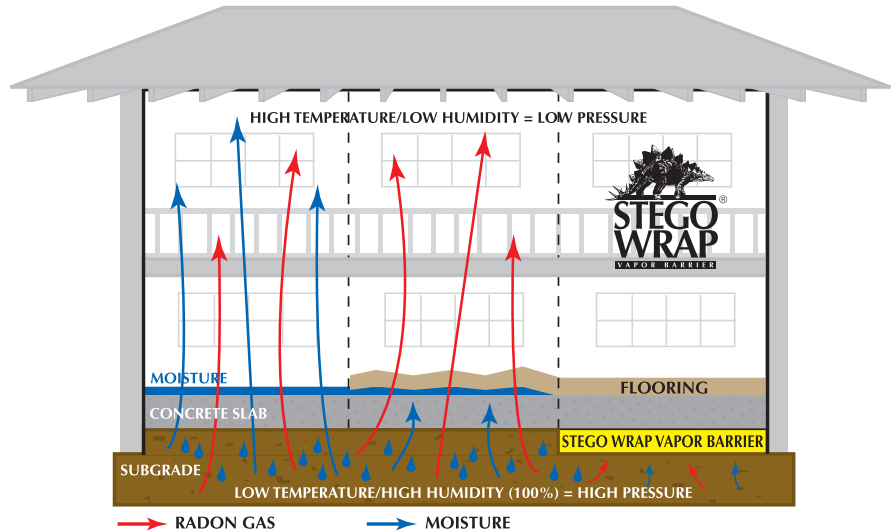
Exceptional Tear and Puncture Resistance

Easy, Reliable Installation

Competitively Priced

Available Nationwide

Local Support



Regardless of the location of the water table, humidity below concrete slabs approximates 100%. Typical below slab vapor pressure is more than twice that of building interiors at room temperature, creating vapor drive from the substrate, up through the slab, and into the building.

THE STEGO® ADVANTAGES

SUPERIOR DEFENSE Against Floor Failures:

Experts say "the need for a vapor barrier (as opposed to a vapor retarder) is becoming increasingly clear." Concrete Construction Magazine, August 2003, p.18.

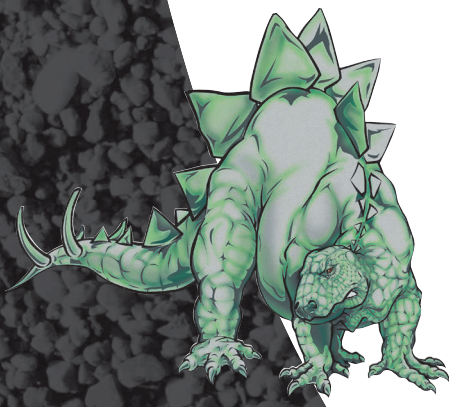
Infiltration of moisture through concrete slabs is a major building defect liability. Stego Wrap Vapor Barrier has an extremely low permeance preventing water vapor, soil gases (i.e. Radon), alkaline salts and soil sulfates from compromising the integrity of the building envelope and leading to serious problems with the concrete slab, floor coverings and indoor air quality. Stego Wrap Vapor Barrier is the best protection against these costly failures.

MOLD PREVENTION:

Mold needs three things to survive: moisture, sustained temperature (between 50° and 122° F), and a food source (dust, drywall, etc.). In any given building environment, contractors can only control one of these variables: moisture. Mold spores are present in 100% of building interiors. If moisture is allowed into your building environment, mold can and will grow. Toxic molds like *Stachybotrys* can be fatal for nearly 5% of people (Institute of Medicine 1993), and cause a variety of serious health problems in others. Several recent well-publicized cases involving toxic mold have resulted in multimillion-dollar insurance settlements. Many of the nation's leading Insurance companies have severely limited or removed coverage for mold claims fearing that these claims will bankrupt their companies. Now more than ever, it is critically important that extra attention be paid to preventing the intrusion of moisture vapor from your below-slab environment. Stego Wrap Vapor Barrier offers the level of protection that many architects are now seeking and is considered to be inexpensive insurance against these costly failures.

LONGEVITY AND STRENGTH:

Stego Wrap Vapor Barrier is NOT made with recycled materials and will not degrade. Prime, virgin resins are the key. Molecules within Stego Wrap "interlock" to provide strength, durability and unprecedented resistance to moisture vapor and radon gas. Stego Wrap's puncture resistance is excellent. Stego Wrap will not tear, crack, flake, snag or puncture, even when 18,000 lb. laser-screed machines are driving directly across the barrier (see the reverse side for Stego Wrap Vapor Barrier's specifications).



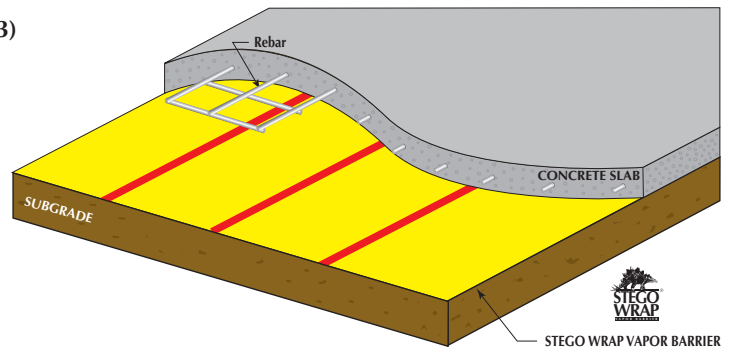
STEGO® WRAP VAPOR BARRIER SPECIFICATIONS

PROPERTIES	TEST METHOD	ASTM E 1745 Class A Requirements	TEST RESULT	EXPLANATION
Permeance	ASTM F 1249	0.1 perms	0.0084 perms * 0.0035 WVTR	Very impermeable to water vapor
Puncture Resistance	ASTM D 1709	2200 grams	Method B 2326 grams	Resistant to puncturing from construction abuse
Tensile Strength	ASTM D 882	45.0 lbf./in.	79.6 lbf./in.	Will not tear easily
Permeance After Conditioning (ASTM E 1745 Sections 7.1.2 - 7.1.5)	ASTM E 154 section 8	0.1 perms	0.0091 perms	Permeance after wetting, drying, and soaking
	ASTM E 154 section 11	0.1 perms	0.0092 perms	Permeance after heat conditioning
	ASTM E 154 section 12	0.1 perms	0.0089 perms	Permeance after low temperature conditioning
	ASTM E 154 section 13	0.1 perms	0.0092 perms	Permeance after soil organism exposure
Methane Transmission Rate	ASTM D 1434		**149.6 GTR 2.12×10^{-6} perms	Greatly impedes the transmission of methane gas
Radon Diffusion Coefficient			1.3×10^{-13} m ² /second	Greatly impedes the transmission of radon gas
Thickness			15 mils	Stronger, tougher and less permeable than much thicker membranes
Roll Dimensions			14 ft. X 140 ft.	1,960 ft ² /roll - allows for a minimum of seams
Roll Weight			140 lbs.	Easy to unroll and install

Note: perm unit = grains/(ft² *hr* in.Hg) * WVTR = water vapor transmission rate **GTR = Gas Transmission Rate

INSTALLATION INSTRUCTIONS: (Based on ASTM E 1643)

Unroll Stego Wrap over the area where the slab is to be placed. Stego Wrap should completely cover the concrete placement area. Overlap seams 6 inches and tape using Stego Tape. All penetrations and blockouts should be sealed using a combination of Stego Wrap, Stego Tape and/or Stego Mastic. If the Stego Wrap is damaged, cut a piece from the Stego Wrap roll, place over the damaged area, and tape around all edges. Concrete may be placed directly on Stego Wrap.



STEGO® TAPE:

STEGO WRAP RED POLYETHYLENE TAPE (3.75" x 180'/roll) is specially designed to seal seams and penetrations on Stego Wrap installations. The acrylic, pressure-sensitive adhesive provides permanent bonding and quick-stick properties. The area to be bonded should be free of dust, dirt and moisture. If properly installed Stego Tape will provide years of continuous protection.

WARRANTY:

STEGO INDUSTRIES, LLC believes, to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions and installations are not within our control, STEGO INDUSTRIES, LLC does not guarantee results from 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 PARTICULAR PURPOSE, OR OTHERWISE WITH RESPECT TO THE PRODUCTS REFERRED TO.

DISTRIBUTED BY:



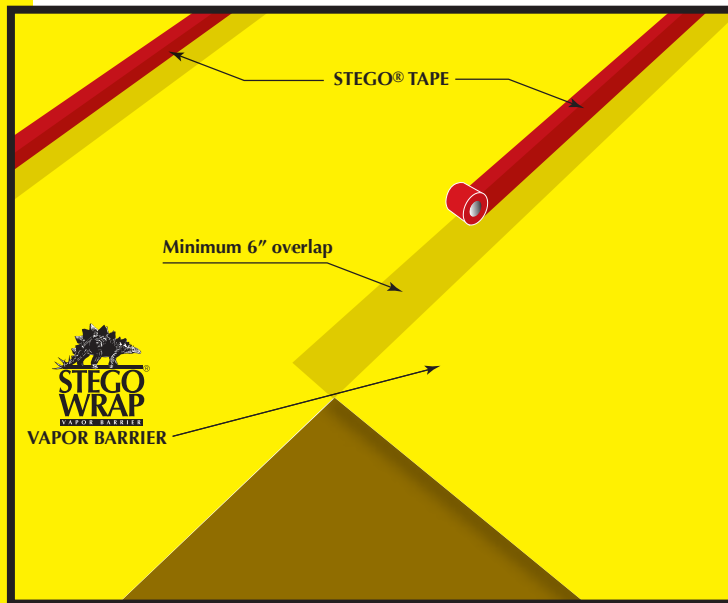
PART 1

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



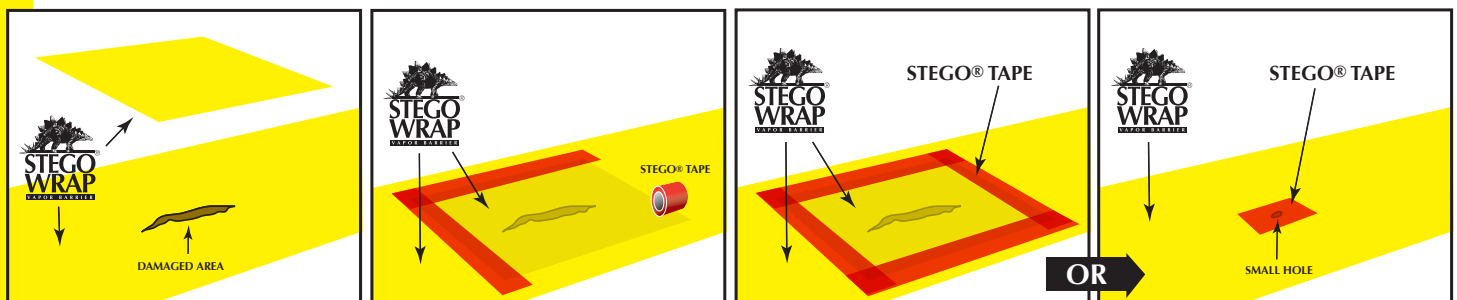
UNDER-SLAB INSTRUCTIONS:

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).

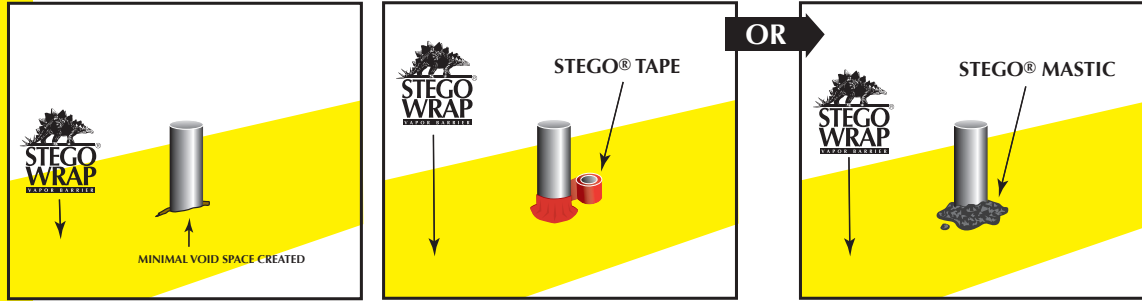
FIGURE 2: SEALING DAMAGED AREAS



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. Stego Pre-Cut Pipe Boots are also available to speed up the installation.
- 4: Cut an "X" the size of the pipe diameter in the center of the pipe boot and slide tightly over pipe.
- 5: Tape down all sides of the pipe boot 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

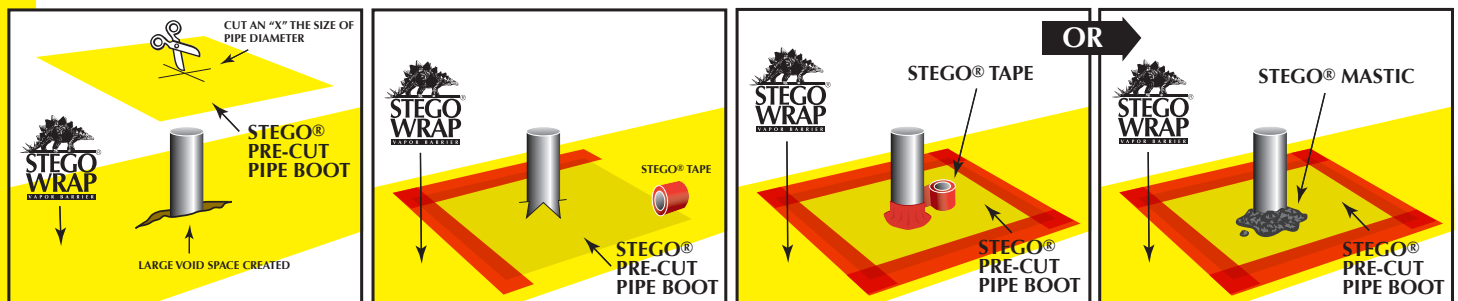
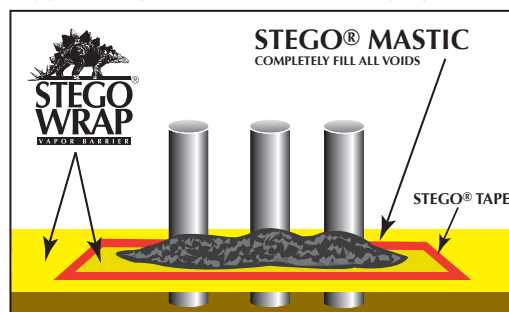


FIGURE 4: MULTIPLE PIPE PENETRATION SEALING



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

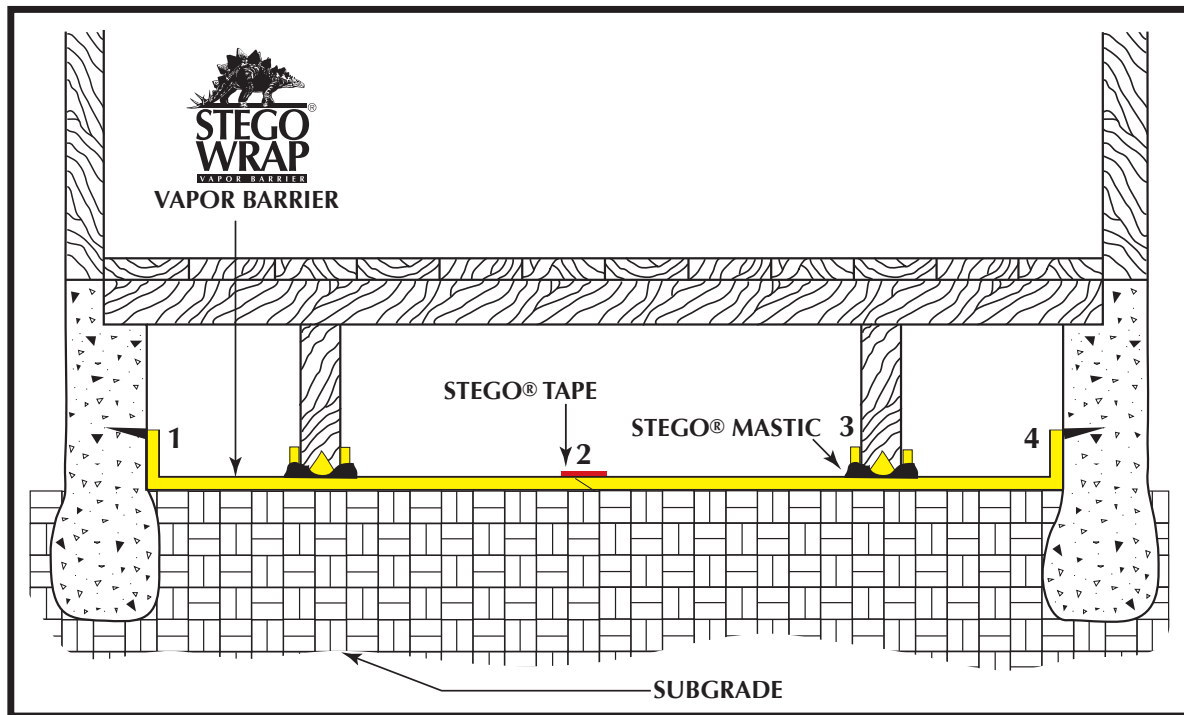
STEGO WRAP VAPOR BARRIER/RETARDER INSTALLATION INSTRUCTIONS



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

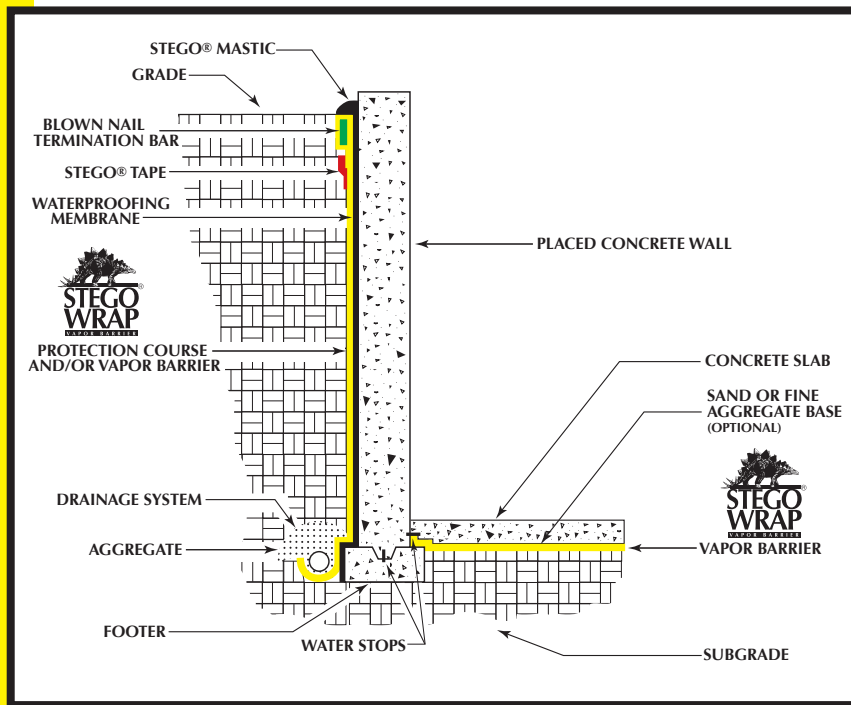
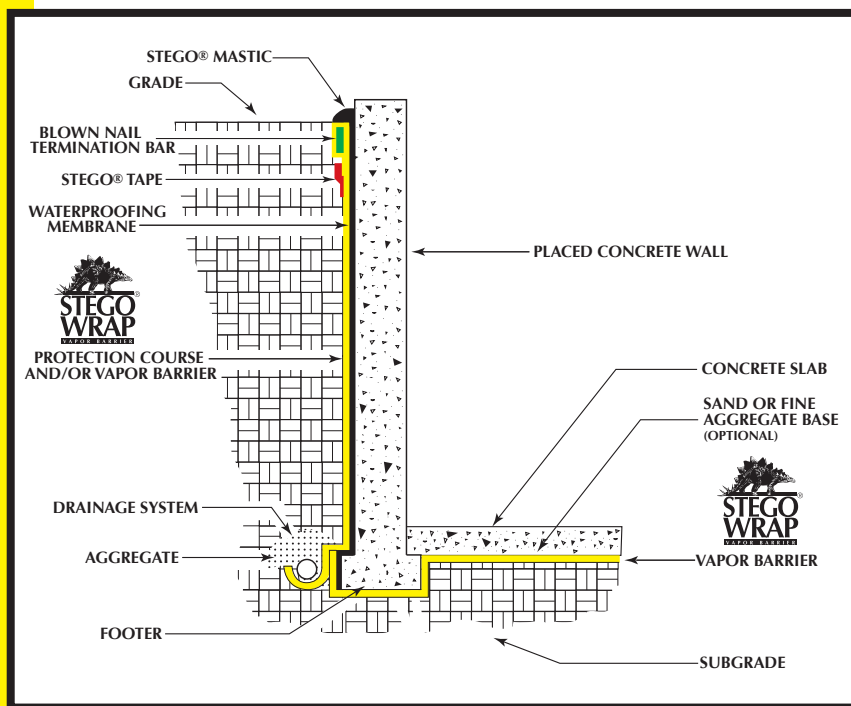


FIGURE 6b: OPTIONAL INSTALLATION FOR FOOTING ENCAPSULATION AND WATERPROOFING TIE-IN



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.



MATERIAL SAFETY DATA SHEET

STEGO INDUSTRIES, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672



DATE PREPARED: 05/15/2010

EMERGENCY PHONE: 1-877-464-7834

IDENTIFICATION

PRODUCT: STEGO WRAP VAPOR BARRIER

CHEMICAL FAMILY: Polyolefin

INGREDIENTS

COMPOSITION	NOMINAL %	PEL/TLV	HAZARDS
Polyethylene	>99%	None	None noted
Flux-Calcined Diatomaceous Earth	<1%		Long term exposure to excessive crystalline silica dust concentrations may cause pulmonary disease. IARC has classified crystalline silica as respirable dust probably carcinogenic for humans.
May contain up to 63% crystalline silica			
1) Cristobalite	<60%	TWA 0.1 mg/m ³	
2) Quartz	<3%	TWA 0.1 mg/m ³	respirable dust

The additives in this product are encapsulated in a thermoplastic film with limited release under normal conditions of transportation and storage. Increased release may occur when the resin is melted, ground to a smaller pellet size or subjected to decomposition, as by excessive heat. The specific potential for release under user's conditions of handling of this material should be evaluated by a qualified health specialist.

PHYSICAL DATA

MELTING POINT: CRYSTALLINE, 212 - 257° (100 - 125°C)
(ASTM D 2117)

DENSITY: 0.90 - 0.94 g/cc
(ASTM D 792)

SOLUBILITY IN WATER: Insoluble

APPEARANCE AND ODOR: Clear to white opaque solid pellets; odorless

HEALTH INFORMATION/OCCUPATIONAL EXPOSURE LIMITS

INHALATION: Nuisance dust can be caused by handling and some operations. Fumes may be generated in operations using heated polyethylene.

Flux-calcined diatomaceous earth contains crystalline silica, which is considered a hazard by inhalation. IARC has classified crystalline silica as probably carcinogenic for humans. This classification is based on the findings of laboratory animal studies that were considered sufficient, and data from epidemiological studies that were considered limited for carcinogenicity. Crystalline silica is also a known cause of silicosis, a noncancerous lung disease.

INGESTION: Acute oral doses of 8 g/kg fed to rats showed no noticeable toxic effects. Dietary levels of 1.25, 2.5, and 5 percent polyethylene for 90 days produced no adverse effects in rats.

EYE CONTACT: Particles and fines may cause mechanical irritation.

SKIN CONTACT: The pellets can be abrasive. Molten or heated material can cause serious burns to unprotected skin.

OSHA PERMISSIBLE EXPOSURE LIMIT: For nuisance dust - 15 mg/m³ for total dust and 5 mg/m³ for respirable dust.

ACGIH THRESHOLD LIMIT VALUE/TIME-WEIGHTED AVERAGE: For nuisance dust - 10 mg/m³ for total dust.

VOC CONTENT: NONE

FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHOD USED: Does not apply

AUTO-IGNITION TEMPERATURE: Approximately 645°F (ASTM D 1929)

HAZARD FIRE RATING BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 704): 1
(0=Minimal 1= Slight 2= Moderate 3= Serious 4= Severe)

FIRE FIGHTING PROCEDURES: Use water spray, dry chemical, foam or carbon dioxide. If possible, water should be applied as a spray from a fogging nozzle since polyethylene is a surface burning material. **Note:** Individuals should perform only those fire fighting procedures for which they have been trained.

UNUSUAL FIRE & EXPLOSION HAZARDS: Fire fighters should wear self-contained breathing apparatus in the positive pressure mode with a full face piece when there is a possibility of exposure to smoke, fumes or hazardous decomposition products. The application of high velocity water will spread the burning surface layer.

EMERGENCY FIRST AID PROCEDURES

FOR OVER EXPOSURE BY:

SWALLOWING: No need anticipated, however if occurs call a physician or Poison Control Center promptly.

SKIN CONTACT: If contacted by molten polymer, immediately flush area with large amounts of cold water. Get medical attention promptly.

EYE CONTACT: Immediately flush eyes with plenty of cool water for at least 15 minutes. Do not permit victim to rub eyes. Get medical attention.

INHALATION: No need anticipated, however if occurs, remove victim to fresh air. If victim has stopped breathing, give artificial respiration, preferably mouth-to-mouth and GET MEDICAL ATTENTION IMMEDIATELY.

REACTIVITY

STABILITY: Generally stable

HAZARDOUS POLYMERIZATION: Not likely

CONDITIONS AND MATERIALS TO AVOID: May burn or react violently with fluorine/oxygen mixtures with 50 - 100% fluorine. May be decomposed by strong oxidizing agents such as nitric and sulfuric acids, halogens and chlorinating agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition products may include C, CO, CO₂, H₂O, acrolein, formaldehyde, fumes possibly containing silica dust and other organic vapors.

SPECIAL PRECAUTIONS

The handling of pellets in both loading and unloading operations as well as fabrication may cause nuisance dust to form, and necessary precautions for personal protection should be used.

NOTE: The data set forth herein has been carefully compiled. However, there is no warranty of any kind, either expressed or implied. The author assumes no obligation.



Stego® Tape

STEGO INDUSTRIES, LLC



Vapor Retarders
07 26 00, 03 30 00

1. Product Name

Stego Tape

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 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.

4. 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

5. 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.

6. 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.

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 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



MATERIAL SAFETY DATA SHEET

STEGO INDUSTRIES, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672

DATE PREPARED: 05/15/2010

EMERGENCY PHONE: 1-877-464-7834



IDENTIFICATION

1. CHEMICAL PRODUCTS AND COMPANY IDENTIFICATION

Material Identity

Product Name: Stego Red Tape

Company

Stego Industres, LLC

216 Avendia Fabricante Suite 101
San Clemente, CA 92672
949-257-4100

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient (s)</u>	<u>CAS Number</u>	<u>% (by weight)</u>
Polyolefin Film	N/A	64
Acrylic Adhesive	Proprietary	36

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye: Contact with the eye is not likely, but can cause eye irritation if adhesive contacts eye.

Skin: May cause mild skin irritation after repeated or prolonged skin contact and removal.

Ingestion: Swallowing of this material during normal handling is not likely.
If swallowed seek medical attention for swallowed solid acrylic adhesive material.

Inhalation: The smell of this adhesive is not likely to cause harmful effects.

Symptoms of Exposure: Signs and symptoms of exposure to this adhesive through ingestion and or skin contact may include: stomach or intestinal upset (nausea, vomiting, diarrhea), and skin irritation.

Chronic Effects: No Data

4. FIRST AID MEASURES

Eyes: If eye contact is made with adhesive. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin: Wash exposed area with soap and water. If rash continues seek medical attention.

Ingestion: Seek medical attention.

Inhalation: No need for first aid is anticipated

5. FIRE FIGHTING MEASURES

Flash Point: Like film

Explosive Limit: N/A

Hazardous Products of Combustion: May form carbon dioxide, carbon monoxide and various hydrocarbons.

Fire and Explosion Hazards: None

Extinguishing Media: Regular foam, water from fog nozzles, carbon dioxide, dry chemical.

Fire Fighting Instructions: For large fire full, turn-out gear. Do not inhale smoke wear self-contained breathing apparatus.

NFPA Rating: Not determined

6. ACCIDENTAL RELEASE MEASURES

N/A

7. HANDLING AND STORAGE

Do not get in eyes, or on clothing. Follow your company's policies.
Store at 70°F +/- 5°F at 50% humidity.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye Protection: Avoid eye contact.

Skin Protection: Gloves not normally required. Avoid prolonged or repeated skin contact

Respiratory Protections: Not expected to be necessary under normal use

Engineering Controls: N/A

Exposure Guidelines: N/A

9. PHYSICAL AND CHEMICAL PROPERTIES

State: Pressure Sensitive Acrylic Adhesive on red polyolefin film

Color: Red

10. STABILITY AND REACTIVITY

Hazardous Polymerization: Will not occur

Hazardous Decomposition: May form: carbon dioxide, carbon monoxide and various hydrocarbons.

Chemical Stability: Stable

Conditions to Avoid: Avoid contact with strong alkalies, strong mineral acids, strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

None Established

12. ECOLOGICAL INFORMATION

None Established

13. DISPOSAL CONSIDERATION

Waste Management Information

Dispose in accordance with applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Information: Product is considered non-hazardous

Container/Mode: Slit roll, Master or pallet

NOS Component: None

RQ (Reportable Quantity): N/A

15. REGULATORY INFORMATION

US Federal Regulations: N/A

16. OTHER INFORMATION

VOC Content:

Substrate – None

Adhesive - <10 g/L

Or

Approximately 0.27 gram/roll (0.37% by weight)

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Information in Section 15, Regulatory Information, is intended to be as complete as possible. It is ultimately the user's responsibility, however, to determine state, and local laws in the use of this product. Stego assumes no responsibility for personal injury or property damage to vendees, users, or third parties caused by the material. Such vendees or users assume all risks associated with the use of the material.



Stego® Mastic

STEGO INDUSTRIES, LLC



Vapor Retarders
07 26 00, 03 30 00

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



MATERIAL SAFETY DATA SHEET

STEGO INDUSTRIES, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672

DATE PREPARED: 05/15/2010

EMERGENCY PHONE: 1-877-464-7834



IDENTIFICATION

PRODUCT: STEGO MASTIC

CHEMICAL FAMILIES: A. BITUMEN/ASPHALT
B. SYNTHETIC RUBBER
C. FATTY ACIDS
D. POLYMERS

CHEMICAL NAME & SYNONYMS: ASPHALT EMULSION

HAZARD: NO EVIDENCE OF SERIOUS HEALTH HAZARDS EXIST.

CARCINOGENIC INGREDIENTS: Bitumen **IARC:** None

WARNING STATEMENTS

AVOID PROLONGED OR FREQUENT SKIN CONTACT, AS THE PRESENCE OF EMULSIFYING AND DE-EMULSIFYING AGENTS DURING APPLICATION MAY IRRITATE THE SKIN.

PHYSICAL DATA

APPEARANCE:	BROWN TO BLACK
SPECIFIC GRAVITY:	(H ₂ O = 1): 1.028 (S) 1.034 (R) 1.13 (T)
SOLUBILITY IN WATER:	INSOLUBLE
VOC CONTENT:	13.96 g/L
VAPOR PRESSURE:	NOT APPLICABLE, NONVOLATILE MATERIAL
VAPOR DENSITY:	NOT APPLICABLE, NONVOLATILE MATERIAL
BOILING POINT:	NOT APPLICABLE, NONVOLATILE MATERIAL
EVAPORATION RATE:	NOT APPLICABLE, NONVOLATILE MATERIAL

FIRE AND EXPLOSION HAZARDS

BITUMEN EMULSIONS ARE WATER-BASED PRODUCTS AND AS SUCH WILL NOT BURN. IN CASES OF FIRE IN THE VICINITY OF DRUMS, COOL WITH WATER.

REACTIVITY DATA

CONTACT WITH STRONG OXIDIZING AGENTS MAY CREATE GELLING AND WATER CONDENSATION.

HEALTH HAZARD INFORMATION

EXPOSURE LIMITS: AVOID PROLONGED OR FREQUENT SKIN CONTACT

ROUTES OF ENTRY: A. INHALATION: YES
B. SKIN: YES
C. INGESTION: YES

SIGNS AND SYMPTOMS OF EXPOSURE: EYE AND SKIN IRRITATION.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: EYE AND SKIN IRRITATION.

PHYSIOLOGICAL EFFECTS SUMMARY

ACUTE: SKIN IRRITATION AND RASH
CHRONIC: DERMATITIS

FIRST AID PROCEDURES

INGESTION: DO NOT INDUCE VOMITING- **GET MEDICAL ATTENTION**
EYES: FLUSH WITH WATER
SKIN: WASH WITH SOAP AND WATER

PROTECTION AND CONTROL MEASURES

RESPIRATORY PROTECTION: NONE REQUIRED
VENTILATION: LOCAL EXHAUST RECOMMENDED
PROTECTIVE GLOVES: ANY RUBBER GLOVE
EYE PROTECTION: GOGGLES OR SAFETY GLASSES
OTHER PROTECTION: NONE REQUIRED
WORK/HYGIENIC PRACTICES: NONE REQUIRED

SPILL AND DISPOSAL PROCEDURES

SPILL: USE SPONGES OR MOPS TO PUT LIQUID IN CONTAINER. ALLOW WATER TO EVAPORATE FROM CONTAINER. SOLIDS ARE NON-TOXIC.
WASTED DISPOSAL: DISPOSE SOLIDS IN USUAL TRASH.
HANDLING AND STORING: AVOID FREEZING AND TEMPERATURES OVER 100 °F

Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product in violation of any patent or in violation of law or regulation. It is the user's responsibility to determine for himself the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material supplied by us.