Engineered protection to create a **healthy** built environment.

The Stego
Life of The Building™ Warranty
As the construction industry leader in below-slab barrier materials, Stego offers the first-of-its-kind warranty for its line of vapor barriers and retarders. Warranty information available online at: stegoindustries.com/legal
EXPOSURE PATHWAY – VAPOR INTRUSION

For brownfields and contaminated sites, the focus has historically been to protect human health by preventing exposure to direct contact of contaminated soil or drinking contaminated water. We now know that inhaling chemical vapors poses a potential risk to the health of residents, workers, and other occupants who are inside of the building envelope. [Source: EPA]

Vapor-forming chemicals may include:
- Volatile organic compounds (VOCs), such as trichloroethylene and benzene.
- Select semivolatile organic compounds, such as naphthalene.

This exposure pathway, known as vapor intrusion, is the movement of chemical vapors from the soil and groundwater into the building envelope.
- In extreme examples, there is a risk of fire or explosion.
- Other times, at levels with a detectable odor, there may be acute short-term health issues such as nausea, headache, and respiratory irritation.
- More commonly though, long-term exposure to even low-levels of certain chemical vapors may increase the risk of chronic health effects, such as cancer. [Source: EPA]

Migration of Soil Vapors to Indoor Air
Both diffusion and advection can draw unwanted chemicals into the building envelope. Regardless of the path that soil vapors can take, experts agree that a monolithic layer of protection like the Drago Wrap Vapor Intrusion Barrier System is critical to controlling the transmission of these chemicals into the building.

Continued...
Drago Wrap is specifically engineered to serve as a barrier to volatile organic compounds (VOCs). Through patented and trade secret processes, Drago Wrap combines engineered barrier materials with the flexibility and strength of a high-performance polyolefin film into an easy-to-install barrier against hydrocarbons and chlorinated solvents.

**FEATURES BENEFITS OF THE DRAGO WRAP VAPOR INTRUSION BARRIER SYSTEM**

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent, university testing</td>
<td>Efficacy testing for hydrocarbons, chlorinated solvents, and other soil gases (radon, methane)</td>
</tr>
<tr>
<td>Made from game-changing resin technology and provides high performance and longevity</td>
<td>Allows Developers, Owners, and Engineers to redevelop brownfield sites and create a healthy built environment</td>
</tr>
<tr>
<td>Installation methodology derived from extensive lab and field work based on the principles found in ASTM E1643 and finally validated through pressure stress testing of simulated installations</td>
<td>Fully intact, dependable installation</td>
</tr>
<tr>
<td>20-mil, multi-layer material</td>
<td>Exceptional durability as a result of robust physical properties</td>
</tr>
<tr>
<td>14 ft wide rolls</td>
<td>Minimize seams</td>
</tr>
<tr>
<td>ASTM E1745 compliant</td>
<td>Designed to be installed below concrete slabs in commercial, residential, and industrial applications</td>
</tr>
</tbody>
</table>

**Extensive testing**

**TESTED – PROVEN EFFECTIVENESS**

Extensive, independent testing proved Drago Wrap’s effectiveness in attenuating hydrocarbons and chlorinated solvents. For more information on our independent testing, please contact Stego Industries’ Technical Department or visit our website at stegoindustries.com.

*Continued...*
COMPLETE PROTECTION
With Drago Accessory Products

DragoSeal™ Tape
SEAL AND PATCH
Combines Drago Wrap technology with a powerful adhesive for a barrier solution to seal seams, patches, and other details, defending against vapor intrusion.

DragoTack® Tape
SEAL THE PERIMETER
A solvent-resistant, double-sided adhesive strip used to bond and seal Drago Wrap to concrete, masonry, wood, metal, and other surfaces.

Drago® Sealant
DETAIL PIPE PENETRATIONS
A two-component, high-performance epoxy, designed to be used with Drago Wrap for sealing utility and pipe penetrations.

Drago® Mastic
DETAIL PIPE PENETRATIONS
A polymer-modified anionic asphalt emulsion, designed to be used with Drago Wrap, for sealing utility, pipe penetrations, and terminating edges.

Drago® Sealant Form
DETAIL PIPE PENETRATIONS
A low-density, cross-linked, closed-cell polyethylene foam designed to be used as a detailing piece with Drago Sealant.

INSTALLATION
Installation methodology derived from extensive lab and field work based on the principles found in ASTM E1643 and validated through pressure stress testing of simulated installations demonstrates Drago Wrap’s ability to produce a fully intact, dependable installation.

As with any protection system, the installation of Drago Wrap is critical to the system’s effectiveness. Drago Wrap and Drago Accessories make it easy to complete a successful installation. Refer to the complete Drago Wrap Installation Instructions and Warranty Information on the website: stegoindustries.com.

SUPPORT
When you choose Drago Wrap and Drago Accessories, you gain access to a large nationwide network of full-time technical sales representatives providing unmatched local support and service to augment the consistent, high-quality performance of our products.

CONTACT
To learn more about this game-changing technology, contact us to get in touch with the nearest Stego representative. We look forward to working with you on your next project.
877-464-7834 | stegoindustries.com

GAME-CHANGING BARRIER SOLUTIONS
All designated trademarks are the intellectual property of Stego Industries, LLC. Installation, Warranty, and State Approval Information: stegoindustries.com/legal.
©2021 Stego Industries, LLC. All rights reserved. 11/2021
1. PRODUCT NAME
DRAGO WRAP VAPOR INTRUSION BARRIER

2. MANUFACTURER
Stego® Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
contact@stegoindustries.com
stegoindustries.com

3. PRODUCT DESCRIPTION
USES: Drago Wrap is specifically engineered to attenuate volatile organic compounds (VOCs) and serve as a below-slab moisture vapor barrier.

COMPOSITION: Drago Wrap is a multi-layered plastic extrusion that combines uniquely designed materials with only high grade, prime, virgin resins.

ENVIRONMENTAL FACTORS: Drago Wrap can be used in systems for the control of various VOCs including hydrocarbons, chlorinated solvents, radon, methane, soil poisons, and sulfates.

4. TECHNICAL DATA

**TABLE 4.1: PHYSICAL PROPERTIES OF DRAGO WRAP VAPOR INTRUSION BARRIER**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Slab Vapor Retarders</td>
<td>ASTM E1745 – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs</td>
<td>ASTM E1745 Compliant</td>
</tr>
<tr>
<td>Water Vapor Permeance</td>
<td>ASTM F1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheet Using a Modulated Infrared Sensor</td>
<td>0.0069 perms</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D882 – Test Method for Tensile Properties of Thin Plastic Sheeting</td>
<td>53.5 lbf/in</td>
</tr>
<tr>
<td>Permeance After Conditioning</td>
<td>ASTM E154 Section 8, F1249 – Permeance after wetting, drying, and soaking</td>
<td>0.0073 perms, 0.0070 perms, 0.0062 perms, 0.0081 perms</td>
</tr>
<tr>
<td></td>
<td>ASTM E154 Section 11, F1249 – Permeance after heat conditioning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASTM E154 Section 12, F1249 – Permeance after low temperature conditioning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASTM E154 Section 13, F1249 – Permeance after soil organism exposure</td>
<td></td>
</tr>
<tr>
<td>Hydrocarbon Attenuation Factors</td>
<td>Contact Stego Industries’ Technical Department</td>
<td></td>
</tr>
<tr>
<td>Chlorinated Solvent Attenuation Factors</td>
<td>Contact Stego Industries’ Technical Department</td>
<td></td>
</tr>
<tr>
<td>Methane Transmission Rate</td>
<td>ASTM D1434 – Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting</td>
<td>7.0 GTR** (mL(STP)/m²•day)</td>
</tr>
<tr>
<td>Radon Diffusion Coefficient</td>
<td>K124/02/95</td>
<td>9.8 x 10^-14 m²/second</td>
</tr>
<tr>
<td>Thickness</td>
<td></td>
<td>20 mil</td>
</tr>
<tr>
<td>Roll Dimensions</td>
<td></td>
<td>14’ x 105’ or 1,470 ft²</td>
</tr>
<tr>
<td>Roll Weight</td>
<td></td>
<td>150 lb</td>
</tr>
</tbody>
</table>

Note: perm unit = grains/(ft²•hr•in-Hg)    ** GTR = Gas Transmission Rate
5. INSTALLATION

UNDER SLAB: Unroll Drago Wrap over a tamped aggregate, sand, or earth base. Overlap all seams a minimum of 12 inches and tape using DragoSeal™ Tape. All penetrations must be sealed using a combination of Drago Wrap and Drago Accessories.

Review Drago Wrap’s complete installation instructions prior to installation.

6. AVAILABILITY & COST

Drago Wrap is available nationally through our network of building supply distributors. For current cost information, contact your local Drago distributor or Stego Industries’ Sales Representative.

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 herein. Stego Industries, LLC does offer a limited warranty on Drago Wrap. Please see stegoindustries.com/legal

8. MAINTENANCE

Store Drago Wrap in a dry and temperate area.

9. TECHNICAL SERVICES

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

Email: contact@stegoindustries.com
Contact Number: (877) 464-7834
Website: stegoindustries.com

10. FILING SYSTEMS: stegoindustries.com
1. PRODUCT NAME
DRAGOSEAL TAPE

2. MANUFACTURER
Stego® Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
contact@stegoindustries.com
stegoindustries.com

3. PRODUCT DESCRIPTION
USES: DragoSeal Tape is a low permeance, solvent resistant tape designed for protective sealing, seaming, splicing, and patching applications. It is engineered to adhere to a variety of surfaces and is ideal for sealing Drago® Wrap seams.

COMPOSITION: DragoSeal Tape is a multi-layered plastic extrusion that combines uniquely designed materials with only high grade, prime, virgin resins, and a solvent resistant blend of synthetic rubber and resins.

SIZE: DragoSeal Tape is 4” x 50’. DragoSeal Tape ships 6 rolls in a case.

4. TECHNICAL DATA

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td></td>
<td>4” x 50’</td>
</tr>
<tr>
<td>Total Thickness</td>
<td></td>
<td>26 mil</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>Grey</td>
</tr>
<tr>
<td>Material</td>
<td></td>
<td>Engineered film and synthetic rubber blend</td>
</tr>
<tr>
<td>Permeance</td>
<td>ASTM F1249</td>
<td>&lt;0.02 perms (26 mil)</td>
</tr>
<tr>
<td>Adhesion to Steel</td>
<td>ASTM D1000</td>
<td>12.5 lbf/in width</td>
</tr>
<tr>
<td>Chemical Resistance (TCE, PCE, Toluene, Xylene)</td>
<td>ASTM D471 / D543</td>
<td>No significant change to mass or volume</td>
</tr>
<tr>
<td>Installation Temperature</td>
<td></td>
<td>40°F / 110°F</td>
</tr>
<tr>
<td>In Service Temperature Range</td>
<td></td>
<td>-20°F / 140°F</td>
</tr>
<tr>
<td>VOC Content</td>
<td></td>
<td>No VOCs, 100% solids</td>
</tr>
</tbody>
</table>

Note: perm unit = grains/(ft²·hr·in-Hg)
5. INSTALLATION

Cut DragoSeal Tape with a utility knife or scissors before removing the release liner for easier cutting. DragoSeal Tape should be installed between 40°F and 110°F. In temperatures below 40°F, take extra care to remove moisture or frost from the area of adhesion. Ensure that the entirety of all seams are taped with applied pressure to allow for maximum and continuous adhesion.

SEAMS: Overlap Drago Wrap a minimum of 12 inches and seal with DragoSeal Tape. Make sure the area of adhesion is free from dust, moisture and frost to allow for maximum adhesion.

PIPE PENETRATION SEALING:
- Install Drago Wrap around pipe by slitting/cutting material.
- If void space is minimal, seal around the base of the pipe using either DragoSeal Tape, Drago® Sealant and Drago® Sealant Form, or Drago® Mastic.

DETAIL PATCH FOR PIPE PENETRATION SEALING:
- Cut a piece of Drago Wrap that creates a 6 inch overlap around all edges of the void space at the base of the pipe.
- Cut an “X” slightly smaller than the size of the pipe diameter in the center of the detail patch.
- Slide detail patch over pipe, secure tightly.
- Tape down all sides of detail patch using DragoSeal Tape.
- Seal around the base of the pipe using either DragoSeal Tape, Drago Sealant and Drago Sealant Form, or Drago Mastic.

Review Drago Wrap’s complete installation instructions prior to installation.

6. AVAILABILITY & COST

DragoSeal Tape is available through our network of building supply distributors. For current cost information, contact your local Drago distributor or Stego Industries’ Sales Representative.

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 herein. Stego Industries, LLC does offer a limited warranty on Drago Wrap. Please see stegoindustries.com/legal

8. MAINTENANCE

Store DragoSeal Tape in a dry and temperate area.

9. TECHNICAL SERVICES

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

   Email: contact@stegoindustries.com
   Contact Number: (877) 464-7834
   Website: stegoindustries.com

10. FILING SYSTEMS: stegoindustries.com
1. PRODUCT NAME
DRAGOTACK TAPE

2. MANUFACTURER
Stego® Industries, LLC
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San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
contact@stegoindustries.com
stegoindustries.com

3. PRODUCT DESCRIPTION
USES: DragoTack Tape is a solvent-resistant, double-sided adhesive strip used to bond and seal Drago® Wrap to concrete, masonry, wood, metal, and other surfaces. DragoTack Tape is a flexible and moldable material to allow for a variety of applications and installations.

COMPOSITION: DragoTack Tape is made from a solvent-resistant blend of synthetic rubber and resins.

SIZE: DragoTack Tape is 2” x 50’. DragoTack Tape ships 12 rolls in a case.

4. TECHNICAL DATA

| TABLE 4.1: PHYSICAL PROPERTIES OF DRAGOTACK TAPE |
|-------------------------------|---------------|---------------|
| PROPERTY                      | TEST          | RESULTS       |
| Dimensions                    |               | 2” x 50’      |
| Total Thickness               |               | 30 mil        |
| Color                         |               | Grey          |
| Material                      |               | Synthetic rubber blend |
| Permeance                     | ASTM F1249    | 0.03 perms (30 mil) |
| Adhesion to Steel             | ASTM D1000    | 12.5 lbs/in width |
| Chemical Resistance (TCE, PCE, Toluene, Xylene) | ASTM D471 / D543 | No significant change to mass or volume. |
| Installation Temperature      |               | 40°F / 110°   |
| In Service Temperature Range  |               | -20°F / +140°F |
| VOC Content                   |               | No VOCs, 100% solids |

Note: perm unit = grains/(R*hr*in-Hg)
5. INSTALLATION

TO WALLS AND FOOTINGS: Make sure the area of adhesion is free of dust, dirt, debris, moisture, and frost to allow maximum adhesion. Remove release liner on one side and stick to desired surface. When ready to apply Drago Wrap, remove the exposed release liner and press Drago Wrap firmly against DragoTack Tape to secure.

Cut DragoTack Tape using a utility knife or scissors. Cut DragoTack Tape before removing the release liner for easier cutting. Install DragoTack Tape between 40°F and 110°F.

Review Drago Wrap’s complete installation instructions prior to installation.

6. AVAILABILITY & COST

DragoTack Tape is available nationally through our network of building supply distributors. For current cost information, contact your local Drago distributor or Stego Industries’ Sales Representative.

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 herein. Stego Industries, LLC does offer a limited warranty on Drago Wrap. Please see stegoindustries.com/legal

8. MAINTENANCE

Store DragoTack Tape in a dry and temperate area.

9. TECHNICAL SERVICES

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

Email: contact@stegoindustries.com
Contact Number: (877) 464-7834
Website: stegoindustries.com

10. FILING SYSTEMS: stegoindustries.com
1. **PRODUCT NAME**

DRAGO MASTIC

2. **MANUFACTURER**

Stego® Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
contact@stegoindustries.com
stegoindustries.com

3. **PRODUCT DESCRIPTION**

USES: Drago Mastic is designed to be used as a vapor intrusion membrane in conjunction with Drago® Wrap. Drago Mastic can be used for sealing utility or pipe penetrations, and terminating edges against existing adjacent concrete or other foundation constructions.

COMPOSITION: Drago Mastic is a medium viscosity, water-based, polymer-modified anionic bituminous/asphalt emulsion.

SIZE: Drago Mastic comes in a 5-gallon pail.

4. **TECHNICAL DATA**

**TABLE 1: PHYSICAL PROPERTIES OF DRAGO MASTIC**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permeance Rating</td>
<td>ASTM E96</td>
<td>0.08 perms</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D412</td>
<td>87 psi</td>
</tr>
<tr>
<td>Elongation</td>
<td>ASTM D412</td>
<td>1800%</td>
</tr>
<tr>
<td>Adhesion to Concrete</td>
<td>ASTM C836</td>
<td>Exceeds</td>
</tr>
<tr>
<td>Shore Hardness</td>
<td>ASTM C836</td>
<td>75</td>
</tr>
<tr>
<td>Crack Bridging</td>
<td>ASTM C836</td>
<td>Exceeds</td>
</tr>
<tr>
<td>Low Temp Flexibility</td>
<td>ASTM C836</td>
<td>No Cracking</td>
</tr>
<tr>
<td>Chemical Resistance (TCE, PCE, Toluene, Xylene)</td>
<td>ASTM D471/D543</td>
<td>No significant negative change to mass or volume.</td>
</tr>
</tbody>
</table>

Note: perm unit = grains/(ft²*hr*in-Hg)
5. INSTALLATION

PREPARATION:
• A test application simulating the project environment should always be done prior to final usage of Drago 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, and apply above 40°F and below 130°F.

PENETRATIONS:
To repair penetrations in Drago Wrap, cut Drago Wrap just big enough to fit over and around the penetration so as to minimize void space. Liberally apply Drago Mastic around the penetration to keep the integrity of the membrane intact. Drago Mastic can be applied from pails by brush, roller, or trowel.

NOTES: 1) If needed to minimize void space around penetrations, utilize a detail patch of Drago Wrap to fit over the penetration and seal the patch/boot with DragoSeal™ Tape prior to applying Drago Mastic. 2) Solvent-based products should not be applied over this product. 3) Clean all tools with kerosene and/or oil-based cleaners.

For additional information, please refer to Drago’s complete installation instructions.

6. AVAILABILITY & COST

Drago Mastic is available through our network of building supply distributors. For current cost information, contact your local Drago distributor or Stego Industries’ Sales Representative.

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 herein. Stego Industries, LLC does offer a limited warranty on Drago Wrap. Please see stegoindustries.com/legal.

8. MAINTENANCE

None required.

9. TECHNICAL SERVICES

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

Email: contact@stegoindustries.com
Contact Number: (877) 464-7834
Website: stegoindustries.com

10. FILING SYSTEMS: stegoindustries.com
1. PRODUCT NAME
DRAGO SEALANT

2. MANUFACTURER
Stego® Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
contact@stegoindustries.com
stegoindustries.com

3. PRODUCT DESCRIPTION
USES: Drago Sealant is designed to be used as a vapor intrusion membrane in conjunction with Drago® Wrap. Drago Sealant can be used as an alternate to detail patches for penetrations in Drago Wrap.
COMPOSITION: Drago Sealant is a two-component, 100% solids, semi-rigid epoxy sealant.
SIZE: Drago Sealant comes in a 4-gallon kit size: Two 1-gallon cans of Part A (Resin) and two 1-gallon cans of Part B (Hardener).
COVERAGE: 96ft² @ 60-mils per kit [4 gallons of product].

4. TECHNICAL DATA

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mix Ratio (A:B by volume)</td>
<td></td>
<td>1:1</td>
</tr>
<tr>
<td>Mixed Viscosity</td>
<td></td>
<td>4,000 - 7,000 cp</td>
</tr>
<tr>
<td>Gel Time (100 g)</td>
<td></td>
<td>50-60 mins</td>
</tr>
<tr>
<td>Pot Life (full unit)</td>
<td></td>
<td>30-45 mins</td>
</tr>
<tr>
<td>Tack Free Time</td>
<td></td>
<td>5-6 hours</td>
</tr>
<tr>
<td>Shore A Hardness</td>
<td>ASTM D2240</td>
<td>80-90</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D638</td>
<td>800 psi</td>
</tr>
<tr>
<td>Tensile Elongation %</td>
<td>ASTM D638</td>
<td>95-105%</td>
</tr>
<tr>
<td>Water Vapor Permeance</td>
<td>ASTM F1249</td>
<td>0.015 perms @ 60-mils</td>
</tr>
<tr>
<td>Chemical Resistance (TCE, PCE, Toluene, Xylene)</td>
<td>ASTM D471/D543</td>
<td>No significant change to mass or volume.</td>
</tr>
</tbody>
</table>

Note: perm unit = grains/(ft²*hr*in-Hg)

5. INSTALLATION
PREPARATION:
• A test application simulating the project environment should always be done prior to final usage of Drago Sealant.
• 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 application.
• Drago Sealant can be applied to virtually any shape or contour by brush, paint roller, trowel or squeegee at various spread rates. Optimum ambient temperature is between 50-90°F during application. Note: Cure times are affected by ambient and surface temperatures. Temperatures of 40°F and lower can slow cure times. Temperatures of 90°F and higher will speed up cured times and reduce working time.
PREPARATION:  Continued...

• Drago Sealant comes in a 4-gallon kit size. It consists of two 1-gallon cans of Part A (Resin) and two 1-gallon cans of Part B (Hardener). Mix the following with a drill and mixing paddle (Note: If using a drill mixer, use a low speed [not to exceed 300 rpm] to prevent air entrapment):
  - Premix Part A and Part B separately. Combine 1 part by volume of Part A to 1 part by volume of Part B and mix thoroughly. Do not thin. Scrape the side and bottom of the mixing container to assure uniform and complete mixing. Mix for 2-3 minutes. Do not aerate mix.

PENETRATIONS:

• To repair penetrations in Drago Wrap, cut a hole in Drago Wrap such that the membrane fits over and around the base of the pipes as closely as possible, ensuring that it is flush with the base of the penetrations.
• Install Drago® Sealant Form continuously around the entire perimeter of the group of penetrations and at least 1 inch beyond the terminating edge of Drago Wrap.
• Pour Drago Sealant inside of Drago Sealant Form to create a seal around the penetrations.
• If the void space between Drago Wrap and the penetrations is not minimized and/or the base course allows for too much drainage of the sealant, a second coat of Drago Sealant may need to be poured after the first application has cured.

Review Drago Wrap’s complete installation instructions prior to installation.

6. AVAILABILITY & COST

Drago Sealant is available through our network of building supply distributors. For current cost information, contact your local Drago distributor or Stego Industries’ Sales Representative.

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 herein. Stego Industries, LLC does offer a limited warranty on Drago Wrap. Please see stegoindustries.com/legal

8. MAINTENANCE

Store locked up in a dry and temperate area.

9. TECHNICAL SERVICES

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

Email: contact@stegoindustries.com
Contact Number: (877) 464-7834
Website: stegoindustries.com

10. FILING SYSTEMS: stegoindustries.com
1. PRODUCT NAME
   DRAGO SEALANT FORM

2. MANUFACTURER
   Stego® Industries, LLC
   216 Avenida Fabricante, Suite 101
   San Clemente, CA 92672
   Sales, Technical Assistance
   Ph: (877) 464-7834
contact@stegoindustries.com
stegoindustries.com

3. PRODUCT DESCRIPTION
   USES: Drago Sealant Form is used in conjunction with Drago® Sealant to help create an efficient and effective seal around pipe penetrations in Drago® Wrap.
   COMPOSITION: Drago Sealant Form is a low-density, cross-linked, closed-cell polyethylene foam with an acrylic, pressure-sensitive adhesive.
   SIZE: Drago Sealant Form is ½” x ½” x 24”. Drago Sealant Form comes in 200 pieces per case (10 boxes of 20 pieces).

4. TECHNICAL DATA
   TABLE 4.1: PHYSICAL PROPERTIES OF DRAGO SEALANT FORM

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>½” x ½” x 24”</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Weight</td>
<td>0.11 oz (3.1 grams)</td>
</tr>
</tbody>
</table>

5. INSTALLATION
   PENETRATIONS: Make sure the area of adhesion is free of dust, debris, moisture, and frost to allow maximum adhesion. When ready to apply to Drago Wrap, remove the release liner and press Drago Sealant Form firmly against Drago Wrap to secure. Install Drago Sealant Form continuously around the entire perimeter of the penetration(s) and at least 1 inch beyond the terminating edge of Drago Wrap. Install Drago Sealant Form between 40°F and 110°F. Pour Drago Sealant inside of Drago Sealant Form to create a seal around the penetration(s).

   Review Drago Wrap’s complete installation instructions prior to installation.

6. AVAILABILITY & COST
   Drago Sealant Form is available nationally through our network of building supply distributors. For current cost information, contact your local Drago distributor or Stego Industries’ Sales Representative.
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 herein. Stego Industries, LLC does offer a limited warranty on Drago Wrap. Please see stegoindustries.com/legal

8. **MAINTENANCE**

Store Drago Sealant Form in a dry and temperate area.

9. **TECHNICAL SERVICES**

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

   Email: contact@stegoindustries.com
   Contact Number: (877) 464-7834
   Website: stegoindustries.com

10. **FILING SYSTEMS**: stegoindustries.com
The installation recommendations set forth in these instructions are generally based on ASTM E1643 and specific applications of Drago products. Each section provides explanations and options for the varying conditions.

SECTION 1 Drago Wrap and Drago Accessories ........................................... 3
SECTION 2 Creating a Monolithic Membrane .............................................. 4
SECTION 3 Where to Terminate the Drago Wrap ........................................ 5
SECTION 4 Sealing Drago Wrap at Terminating Edges ................................. 6,7
SECTION 5 Sealing Damaged Areas ............................................................. 8
SECTION 6 Sealing Single Pipe Penetrations ............................................... 9
SECTION 7 Sealing Multiple Pipe Penetrations .......................................... 10
SECTION 8 Avoid Punctures with Beast Concrete Accessories ................. 11

Stego Installation Support - A Free Service

When you choose Stego® Barrier Solutions and products, you gain access to a large nationwide network of full-time technical sales representatives providing unmatched local support and service. If you ever have a question or concern regarding the following installation scenarios please contact us and take advantage of our free Stego Installation Support.

For compliance with LARR regulations, some additional installation methods are required. For more information, visit: stegoindustries.com/drago-larr-specific-installation-instructions
Drago Wrap

Drago® Wrap Vapor Intrusion Barrier is a multi-layered plastic extrusion that combines uniquely designed materials with only high grade, prime, virgin resins. This patent pending barrier technology provides high performance and longevity, allowing for the redevelopment of contaminated sites, creating a healthy built environment.

Drago Accessories

At Stego, we know every project has its own unique challenges. To make a Drago Wrap installation easy and flexible, we offer an extensive line of accessory items that gives you options to create a monolithic membrane between all interior intrusion pathways and vapor sources below the slab as well as at the slab perimeter. Consult the project architect, owner’s representative, and design engineer of record before proceeding with any of these options.

Drago™ Seal Tape
Combines Drago Wrap technology with a powerful adhesive for a barrier solution to seal seams, patches, and other details, defending against vapor intrusion.

Drago® Sealant
A two-component, high-performance epoxy, designed to be used with Drago Wrap for sealing utility and pipe penetrations.

Drago® Sealant Form
A low-density, cross-linked, closed-cell polyethylene foam designed to be used as a detailing piece with Drago Sealant.

DragoTack® Tape
A solvent-resistant, double-sided adhesive strip used to bond and seal Drago Wrap to concrete, masonry, wood, metal, and other surfaces.

Drago® Mastic
A polymer-modified anionic asphalt emulsion, designed to be used with Drago Wrap, for sealing utility, pipe penetrations, and terminating edges.
Creating a Monolithic Membrane

The key to an effective Drago Wrap installation is to create a monolithic layer of protection between the building foundation and vapor sources below. While Drago Wrap installation instructions are generally based on ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection 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.

**ASTM E1643 discusses the selection of the vapor retarder and preparation of the subbase to minimize potential damage during installation and concrete placement.**

- ASTM E1643, Section 5.3.4.1 - Select a vapor retarder material capable of withstanding potential construction site damage.
- ASTM E1643, Section 5.3.5.1 - Select vapor retarder material capable of withstanding tear or puncture damage due to the type, gradation, and texture of the base material to be installed below the material. Prepare base material to minimize risk of puncture, for example, by rolling or compacting.
- ASTM E1643, Section 6.1 - Level and compact base material.

**ASTM E1643 then states to create a monolithic membrane to protect the slab from adjacent moisture sources.**

- ASTM E1643, Section 6.4 - . . . create a monolithic membrane between the surface of the slab and vapor sources below the slab as well as at the slab perimeter.
- ASTM E1643, Section 6.5 - Lap joints as instructed by the manufacturer and seal laps in accordance with the manufacturer’s recommendations.

Drago Wrap can be installed over an aggregate, sand, or tamped earth base. It is not typically necessary to have a cushion layer or sand base, as Drago Wrap is tough enough to withstand rugged construction environments. Consult the design team for project-specific recommendations.

1. Unroll Drago Wrap over the area where the slab is to be placed. 
   Note: Grey color side of membrane is face-down, copper color side is face-up.

2. Unless otherwise indicated by the design professional(s) of record, unfold Drago Wrap to completely cover the placement area.

3. All joints/seams should be overlapped a minimum of 12 inches.

4. Ensure Drago Wrap is clean and dry when applying DragoSeal Tape. 
   Tip: Use a cloth or other means to remove dust, debris, and excess moisture from Drago Wrap prior to applying DragoSeal Tape.

5. Seal the seams with DragoSeal Tape. 
   Note: Remove the release liner of DragoSeal Tape prior to application. Apply pressure to DragoSeal Tape after application.

**OPTIONAL SEALING METHOD:**
Hot air wedge welding equipment is ideal for heat welding seams of Drago Wrap.
Where to Terminate the Drago Wrap

Always consult the project design team for where to terminate the vapor barrier to strike a balance between the location of the vapor barrier on or around foundation constructions and any structural concerns before proceeding.

**ASTM E1643 provides direction on where to terminate the vapor barrier as follows:**

ASTM E1643, Section 6.4 - Extend vapor retarder over footings and seal to foundation wall, grade beam, or slab at an elevation consistent with the top of the slab or terminate at impediments such as waterstops or dowels...

ASTM E1643, Section 6.6 - Extend vapor retarder over the tops of pile caps and grade beams to a distance acceptable to the structural engineer.

In accordance with ASTM E1643, terminate the Drago Wrap as follows:

**At an elevation (height) consistent with the top of the slab:**

Note: Turn Drago Wrap up foundation walls or forms. Ensure Drago Wrap is flush against the corner to avoid tenting.

**At Impediments; OR**

Note: Impediments may include rebar, dowels, water stops, etc. and may be located at interior grade beams in addition to perimeter walls and footings.

**At a location of termination designated by the project design team.**

Note: The distance to which the vapor barrier is extended adjacent to, onto, or completely over a footing or grade beam should be determined by the project design team.

If the location of vapor barrier termination has not been clearly addressed in the construction documents, then clarification should be requested from the project design team. Should no direction be given, Stego recommends the project team follow, at minimum, the guidelines of ASTM E1643.

Regardless of where the vapor barrier is determined to be terminated, ASTM E1643 requires the terminating edges to be sealed.
Sealing the Terminating Edges of Drago Wrap
Up Foundation Walls & Vertical Surfaces
Using DragoTack Tape

DragoTack Tape can be used to seal Drago Wrap to foundation walls, grade beams or other adjacent concrete constructions. 
**IMPORTANT:** Make sure the area of adhesion is free of dust, dirt, debris, moisture, and frost to allow maximum adhesion.

1. Remove the release liner on one side of DragoTack Tape and adhere to foundation wall at the height of the slab or at impediments.
2. When ready to apply Drago Wrap, remove the exposed release liner from DragoTack Tape.
3. Press Drago Wrap firmly against DragoTack Tape to secure.

**MECHANICAL SEAL OPTION:**
If a mechanical seal is needed, fasten a termination bar over the top of the Drago Wrap inline with the DragoTack Tape.

Sealing Drago Wrap Up Foundation Walls and Vertical Surfaces Using Drago Mastic

**IMPORTANT:** Make sure the area of adhesion is free of dust, dirt, debris, moisture, and frost to allow maximum adhesion.

1. Apply Drago Mastic to the foundation wall at the anticipated edge of the subsequently applied Drago Wrap at the height of the slab or impediments.
2. Press Drago Wrap firmly against the applied Drago Mastic on the foundation wall.

**MECHANICAL SEAL OPTION:**
If a mechanical seal is needed, fasten a termination bar over the top of the Drago Wrap inline with the DragoTack Tape.
Sealing the Terminating Edges of DragoWrap on a Horizontal Plane

Always consult the project design team for where to terminate the vapor barrier to strike a balance between the location of the vapor barrier on or around foundation constructions and any structural concerns before proceeding.

After the location of where to terminate the vapor barrier has been determined, seal DragoWrap along all terminating edges as indicated by the project team.

Using DragoTack Tape

Onto a Perimeter Footing at Impediments: Seal DragoWrap to concrete with DragoTack Tape.

Onto Interior Grade Beams at Impediments: Seal DragoWrap to concrete with DragoTack Tape.

At a Location Designated by the Design Team: Seal DragoWrap to concrete with DragoTack Tape.

MECHANICAL SEAL OPTION:
If a mechanical seal is needed, fasten a termination bar over the top of the DragoWrap inline with the DragoTack Tape.

Using Drago Mastic

Onto a Perimeter Footing at Impediments: Seal DragoWrap to concrete with Drago Mastic.

Onto Interior Grade Beams at Impediments: Seal DragoWrap to concrete with Drago Mastic.

At a Location Designated by the Design Team: Seal DragoWrap to concrete with Drago Mastic.

MECHANICAL SEAL OPTION:
If a mechanical seal is needed, fasten a termination bar over the top of the DragoWrap inline with the DragoTack Tape.

See “Where to Terminate the Vapor Barrier” on page 5 prior to choosing your terminating edge sealing accessory.
Sealing Damaged Areas: Small Hole or Slice

In the event that Drago Wrap is damaged during or after installation, repairs must be made. For smaller holes or slices in Drago Wrap, DragoSeal Tape can be used as noted below.

1. Small hole or slice in Drago Wrap.
2. Clean area of adhesion.
3. Center DragoSeal Tape over small hole or slice in Drago Wrap. Apply pressure to DragoSeal Tape after application.

Sealing Damaged Areas: Larger Hole

In the event that Drago Wrap is damaged during or after installation, repairs must be made. For larger holes, cut a piece of Drago Wrap to a size and shape that covers any damage by a minimum overlap of 6” in all directions. Clean all adhesion areas of dust, dirt, moisture, and frost. Tape down all edges using DragoSeal Tape.

1. Occasionally there are larger holes in the vapor barrier that require a patch.
2. Measure and cut a piece of Drago Wrap to cover damaged area 6” in all directions. Clean area of adhesion.
3. Seal the patch with DragoSeal Tape.
Sealing Single Pipe Penetration: Minimal Void Space

All penetrations must be sealed. All pipe, ducting, rebar, wire penetrations and block outs should be sealed using Drago Wrap and either DragoSeal Tape, Drago Mastic, or Drago Sealant and Drago Sealant Form. If penetrations are encased in other materials, such as expansive materials like foam, unless otherwise specified, Drago Wrap should be sealed directly to the underlying penetration.

1. Install Drago Wrap around pipe penetrations by slitting/cutting material as needed. Try to minimize the void space created.

2. Pull material over and flatten. Clean area of adhesion where the Drago accessory will be applied.

3. If Drago Wrap is close to pipe and void space is minimized then seal around pipe penetration with either DragoSeal Tape (as shown), Drago Mastic or Drago Sealant and Drago Sealant Form.

Sealing Single Pipe Penetration: Larger Void Space Requires Detail Patch

To minimize void space around a larger penetration, a detail patch may be required.

1. Cut a detail patch to a size and shape that creates a 6” overlap on all edges around the void space at the base of the pipe.

2. Cut an “X” the size of the pipe diameter in the center of the detail patch and slide tightly over pipe.

3. Seal all sides of the detail patch with DragoSeal Tape.

4a. Seal around the base of the pipe using DragoSeal Tape.

4b. Seal around the base of the pipe with Drago Mastic.
   Note: apply using disposable glove, paint brush, or similar.
Sealing Multiple Pipe Penetrations: Using Drago Mastic or Using Drago Sealant and Drago Sealant Form

Multiple pipe penetrations in close proximity and very small pipes may be most efficiently sealed using Drago Wrap and Drago Mastic, or Drago Wrap, Drago Sealant, and Drago Sealant Form.

1. Cut a slit the size to accommodate the width of the multiple pipes. Try to minimize the void space created.

2. Place a detail patch over and around the base of the pipe penetrations as closely as possible, ensuring that it is flush with the base of the penetrations. Seal all sides of the detail patch with DragoSeal Tape.

3a. Apply Drago Mastic around the entire perimeter of the group of penetrations and between the penetrations to fill any void spaces present.
   Note: apply using disposable glove, paint brush, or similar.

3b. Install Drago Sealant Form continuously to Drago Wrap and around the entire perimeter of the group of penetrations and at least 1 inch beyond the terminating edge of Drago Wrap.

3b2. Pour Drago Sealant inside of Drago Sealant Form to create a seal around the penetrations.
   Note: If the void space between Drago Wrap and the penetrations is not minimized and/or the base course allows for too much drainage of sealant, a second coat of Drago Sealant may need to be poured after the first application has cured.
   Drago Sealant pot/working life is roughly 30-45 minutes.
Avoid Punctures with Beast® Concrete Accessories

To help eliminate the use of non-permanent penetrations in Drago Wrap installation, Stego Industries recommends the use of Beast vapor barrier-safe concrete accessories.

**IMPORTANT:** Avoid puncturing Drago Wrap with stakes while forming, bracing, and screeding.

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**BEAST® FORM STAKE** can be used with **BEAST® FOOT** as part of the Stego vapor barrier-safe forming system which meets ASTM E1643 requirements.

This concrete form stake takes the place of traditional nail stakes for interior forming applications, utilizing SpeedTrack™ Fastening Grooves for unlimited fastener placement.

Note: Refer to Beast Form Stake Installation Guide for detailed usage instructions.

**BEAST® SCREED** is a fixed-elevation, point-to-point guide screed system designed to replace common wet-screed methods.

Set it and forget it. Beast Screed eliminates the need to frequently re-establish grade to ensure floor elevation has not changed during the screeding operation as is typical with traditional wet-screed methods.

Note: Refer to Beast Screed System Installation Instructions for detailed usage instructions.

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**BEAST® HOOK** is a faster, easier way to set 2x4 overhead screeds. Use Beast Foot and Beast Form Stake and make it a vapor barrier-safe screed system.

No tools are required, just grip the knob to loosen or tighten. Fast, easy, efficient.

**Preventing punctures in the vapor barrier.**

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Beast Form Stake is strong enough to withstand a beating during concrete placement while holding its shape. It is easy to remove and reusable for the next job.

Note: Beast Form Stake can be removed once concrete has set sufficiently to hold its shape. Fill and repair any voids in the concrete as necessary once the Beast Form Stake has been removed and strike Beast Form Stake against a hard surface to loosen the concrete buildup.

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**NOTE:** Stego Industries, LLC’s (“Stego”) installation instructions are based on ASTM E1643 – Standard Practice for Selection, Design, Installation, and Inspection 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 or Stego products, please call us at 877-464-7834 for technical assistance. While Stego employees and representatives may provide technical assistance regarding the utility of a specific installation practice or Stego product, they are not authorized to make final design decisions.
STEGO INSTALLATION SUPPORT

PEACE OF MIND IS OF GREAT VALUE...
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When you choose Stego® Barrier Solutions and products, you gain access to a large nationwide network of full-time technical sales representatives providing unmatched local support and service.

Contact
Please contact us to get in touch with the nearest Drago representative. We look forward to working with you on your next project. 877-464-7834 | stegoindustries.com