

# Understanding LEED v4 BD+C, Green Construction and Vapor Barriers

Deciphering and qualifying a project for USGBC’s LEED v4 credits can be a daunting task. This document intends to explain how vapor barriers fit into the LEED equation, educate designers about how Stego Wrap Vapor Barrier measures up when selecting below-slab moisture protection for green building projects, and outline the efforts Stego Industries makes at all levels of its organization to demonstrate its commitment to sustainability.

## LEED Credits Where Vapor Barrier Selection Can Make Significant Impacts

Understanding below-slab vapor protection’s role in the various LEED credits can filter green promotional claims, known as “green washing,” from reality. Credits where a vapor barrier may either contribute or align with the credit’s intent include:

### Location & Transportation: High-Priority Site

NC	C&S	SCHOOLS	RETAIL	DATA CTR	W&DC	HOSPITALITY	HEALTH
LTc3	LTc3	LTc3	LTc3	LTc3	LTc3	LTc3	LTc3
1-2 pts.	2-3	1-2	1-2	1-2	1-2	1-2	1-2

Points can be earned by selecting and remediating sites and/or lots recognized as brownfields due to soil or groundwater contamination. Remediation steps, depending upon the requirements of the local authorities, often involve the use of a low-permeance soil-gas retarder to impede residual contamination. Testing shows that Stego Wrap Vapor Barrier maintains an extremely low water vapor permeance when exposed to several harmful chemicals often found in brownfield sites. Stego Wrap can be an integral component of an overall remediation strategy—see Stego’s “Brownfield Packet” for more information.

### Sustainable Sites: Environmental Site Assessment

NC	C&S	SCHOOLS	RETAIL	DATA CTR	W&DC	HOSPITALITY	HEALTH
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For school and healthcare projects, systematic site assessment is required. Should these steps determine that contamination is present, remediation methods must be employed to meet appropriate standards. Depending upon the requirements of the local authorities, remediation steps may involve the use of a lowerpermeance soil-gas retarder to impede the transmission of residual contamination not removed from the subgrade. Testing shows that Stego Wrap Vapor Barrier maintains an extremely low water vapor permeance in the face of exposure to many harmful soil gases often found in contaminated sites. Stego Wrap can be an integral component of an overall remediation strategy—see Stego’s “Brownfield Packet” for more information.



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## Energy & Atmosphere: Minimum Energy Performance

NC	C&S	SCHOOLS	RETAIL	DATA CTR	W&DC	HOSPITALITY	HEALTH
EAp2	EAp2	EAp2	EAp2	EAp2	EAp2	EAp2	EAp2

## Energy & Atmosphere: Optimize Energy Performance

NC	C&S	SCHOOLS	RETAIL	DATA CTR	W&DC	HOSPITALITY	HEALTH
EAc2	EAc2	EAc2	EAc2	EAc2	EAc2	EAc2	EAc2
1-18	1-18	1-16	1-18	1-18	1-18	1-18	1-20

Stego Wrap prevents significant amounts of water vapor from entering the building envelope from below the foundation or crawl space. This reduced moisture migration can significantly decrease the latent moisture load and subsequent power required by the HVAC system to maintain indoor humidity and temperature levels. Stego Wrap may not reduce power consumption levels enough to meet the minimum energy performance thresholds or earn credits through optimization, but it can certainly contribute to an overall energy-performance enhancement strategy. Many variables are involved with energy optimization; please contact the Stego Industries Technical Department for more details on this subject.

## Materials & Resources: Building Product Disclosure and Optimization – Material Ingredients

NC	C&S	SCHOOLS	RETAIL	DATA CTR	W&DC	HOSPITALITY	HEALTH
MRC4	MRC4	MRC4	MRC4	MRC4	MRC4	MRC4	MRC4
1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2

It is of paramount importance that the materials used in the built environment are safe to all who come in contact with them at every point in their lifecycle. To this end, a point can be earned under this credit by utilizing products whose manufacturers have taken the necessary steps to verify both the constituent ingredients and associated health impacts through reporting programs like the Health Product Declaration (HPD). An additional point is possible through the robust screening of those ingredients and/or their supply chain to verify safety and health optimization. Stego Industries has always identified strongly with these efforts and participated as a Pilot Manufacturer during the initial development of the Health Product Declaration and is a current Supporter Sponsor of HPD Collaborative. HPDs are available for all Stego Wrap and Accessory products.



## Indoor Environmental Quality: Low-Emitting Materials

NC	C&S	SCHOOLS	RETAIL	DATA CTR	W&DC	HOSPITALITY	HEALTH
MRc4	MRc4	MRc4	MRc4	MRc4	MRc4	MRc4	MRc4
1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2

Stego Wrap Vapor Barrier has an extremely low permeance to water vapor migration in line with the most current industry expert recommendations. These two credits require low VOC emitting/content adhesives and low VOC emitting carpets, carpet cushions, hard surface floorings and grouts to be used for interior applications. Unfortunately, low VOC flooring adhesives, such as water-based adhesives, and carpet systems are susceptible to moisture-related damage and microbial growth due to water vapor migration. Stego Wrap Vapor Barrier will help protect these flooring systems from moisture-related damage. Additionally, the School and Healthcare Rating Systems specify requirements for External Applied Products. All Stego products meet these requirements. Please contact the Stego Green Team for detailed information on VOC requirements.

## Important Notes Regarding Strategies where Vapor Barrier Selection Can Have Minimal Impacts

### Recycled Content

Recycled Content, defined as the sum of postconsumer recycled content plus one-half the pre-consumer recycled content (based on cost), is used as a single elective criterion (among several others) for which a product may be considered a partial contributor toward responsible extraction and sourcing. However, recycled content, when utilized in an under-slab vapor barrier, can be extremely detrimental to the effectiveness of the vapor-proofing system. Additionally, due to the low cost of the vapor barrier in relation to other building components, any potential contribution made through this criterion will be miniscule.

### Regional Material

The Regional Material designation does not exist as a standalone credit; rather, it is used as a multiplier for a number of credits under the Materials and Resources category to encourage local procurement. Products meeting this criterion must be extracted (i.e. raw materials), manufactured, and purchased within 100 miles of the project site. Given that most resin sourcing, plastic extrusion, and purchasing occur well beyond this radius, it is unlikely any under-slab vapor barrier can be considered a 'regional material.'





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## Put Product Performance First

Stego Wrap vapor barriers and retarders revolutionized building practices by replacing polyethylene and visqueen-style products – which more often than not contain high recycled content -- that have proven to deteriorate and fail over time, leading to catastrophic floor failures, mold and moisture invasion, and poor indoor air quality. The superior performance of our products relies on prime virgin resins in their extrusion. We believe this is the most sustainable philosophy: developing products that will last the life of a building and protect its sensitive components.

## Stego's Commitment to True Sustainability

Stego Industries leads the industry in practices, research and development to advance our industry toward a more sustainable future. We are a pilot program member of the Health Product Declaration project to identify harmful components in construction products, among the Healthy Building Network's "Transparency Leaders" in our industry, and operate from a 100 percent solar-powered facility with an Executive Green Team charting a sustainable future for the company.

