



Graffiti Shield Abatement Solutions Products contributions to a facility seeking LEED Certification.

This is a 3rd party opinion which was prepared following dialog with representatives of Graffiti Shield and a further review of their publicly available materials information and test data.

Initially when we review the aspirations of the LEED Ratings systems we find several aspects that parallel or perhaps one could say are supported by the goals of Graffiti Shield Abatement Solutions Products.

“The LEED rating systems aim to promote a transformation of the construction industry through strategies designed to achieve seven goals:

- To reverse contribution to global **climate change**
- To enhance individual **human health** and well-being
- To protect and restore **water resources**
- To protect, enhance, and restore **biodiversity** and ecosystem services
- To promote sustainable and regenerative **material resources** cycles
- To build a **greener economy**
- To enhance social equity, environmental justice, **community** health, and quality of life”¹

Graffiti Shield Abatement Solutions Products contribute to ...

- reversing the contribution to global **climate change** in buildings using their Abatement Solutions Products by reducing the embodied energy in building materials and products that would be otherwise required to be replaced as a result of vandalism.
- Promoting sustainable and regenerative **material resources** cycles via their dedicated use of recycled and renewable resources.
- building a **greener economy** via their Corporate Sustainability practices.

As you view this terse evaluation and opinion, I must first state that I firmly believe in the benefits of sacrificial vandalism and graffiti barrier products and their positive contributions to facility resilience and embodied energy conservation when properly used.

When we consider the applicability and contributions that Graffiti Shield Abatement Solutions Products could potentially add to a facility being designed, constructed or updated to pursue LEED Certification those considerations are many. Primarily this paper will reference a LEED Credit Category and then make any reference to applicability of Graffiti Shield Abatement Solutions Products contribution to the attainment of credits within that Credit Category.

We must remember that products cannot be LEED Certified and can only contribute to successful certification efforts when the facilities construction and application conditions are favorable to their application.

¹ LEED Reference Guide for EB O+M v4; LEED Reference Guide for BD+C v4.
<http://www.graffiti-shield.com/products/glass-shield>.

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Location and Transportation (LT)²

Rewards thoughtful decisions about building location, with credits that encourage compact development, alternative transportation, and connection with amenities, such as restaurants and parks.

LEED Location and Transportation Credit Category

Graffiti Shield Abatement Solutions Products could provide a positive contribution to the vandalism resistance of the vehicles used yet this benefit has no way to quantify within the current structure of the various LEED Rating Systems



Sustainable Sites (SS)³

Select appropriate sites to develop and addresses environmental concerns related to building landscape, hardscape and exterior building issues.

LEED Sustainable Sites Credit Category

Graffiti Shield Abatement Solutions Products are an effective facility management choice and solution to the abatement of vandalism issues as a sacrificial surface in new construction as well as a restorative solution for many surfaces that may have been abused within both the LEED v4 for New Construction and Major Renovation and the LEED v4 for Operations & Maintenance: Existing Buildings rating systems projects. The major benefit that will be seen with the use of Graffiti Shield window films is the exterior maintenance and management aspects and resiliency to damage, vandalism and graffiti. These benefits can be referenced as contributors for Innovation in Design or Operations Credits.



Water Efficiency (WE)⁴

Maximize water efficiency and reduce the burden on water supply and waste water systems.

LEED Water Efficiency Credit Category

When considering Water Efficiency initially there would seem to be no correlation between water consumption and Graffiti Shield Abatement Solutions Products yet the determining factor would be if water is used for a facility's maintenance purposes can be reduced measurably via the implementation of Graffiti Shield Abatement Solutions Products.

We know that some Graffiti Shield window films reduce the external Ultraviolet Energy load transmitted through the glazing system thus reducing the overall energy required to cool or heat a building. Many factors will additionally affect the quantity of water consumed within a

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building's HVAC system's cooling towers yet the application of Graffiti Shield Abatement Solutions Products would need to provide a measureable differential and a reduction in required resources as compared to the equivalent building without Abatement Solutions technology utilized to aid in credit attainment. If the Abatement Solutions Products aid in subsequent water reduction green cleaning program for the protected surfaces this may contribute to this credit category as well.

The theoretically or proposed water reductions are very difficult to quantify yet certainly when benchmarking an existing building before and after field measurements can be utilized to determine the contributions that process water use reduction can make to the attainment of the overall water reduction goals.



Energy and Atmosphere (EA)⁵

Conserve energy, control refrigerant use reduce ozone and explore renewable energy sources

LEED Energy and Atmosphere Credit Category

Graffiti Shield Abatement Solutions Products were not designed as an energy efficiency product however their implementation does assist with the embodied energy of a building by increasing service life of the protected surfaces and providing a resiliency benefit.

Many factors will additionally affect the quantity of energy consumed within a building's HVAC system's components yet the application of Graffiti Shield Abatement Solutions Products may provide a higher Surface Reflectance Index differential which could lead to a reduction in required resources as compared to the equivalent building without some energy reduction technology utilized. The theoretically or proposed energy use reductions are very difficult to quantify yet certainly when benchmarking an existing building before and after field measurements can be utilized to determine if the Abatement Solutions Products provide measureable contributions as an energy reduction component which can contribute to the attainment of the overall energy use reduction goals.

The resiliency aspect that Graffiti Shield Abatement Solutions Products provides as well as the other combined positive attributes may align better with Innovation Credits since Graffiti Shield Abatement Solutions Products can positively contribute in a manner not addressed within the LEED Rating Systems. The replacements costs for vandalized mirrors, natural stone, stainless metal panels, and anodized surface products versus the capital expenditure benefit via the application of Graffiti Shield Abatement Solutions Products to an existing building surfaces is substantially favoring the Abatement Solutions Products with a cost of approximately 10% to 25% as compared to replacements.

⁵ LEED Reference Guide for EB O+M v4; LEED Reference Guide for BD+C v4.

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Material Resources (MR)⁶

Reduce construction waste, use materials with high-recycled content and consider local materials to minimize transportation costs and positively influence local economies.

LEED Material Resources Credit Category

Graffiti Shield Abatement Solutions Products provide a positive contribution to reducing the desire or necessity to replace perfectly good building materials and surfaces that are at risk of vandalism and in some cases building materials and surfaces that have been vandalized can be restored by the application of Graffiti Shield Abatement Solutions Products, saving substantial capital resources and ... importantly... keeping these building surfaces and materials from impacting landfill contributions! Within this category Graffiti Shield Abatement Solutions Products may contribute to the attainment of MR Building life-cycle impact reduction.

The Graffiti Shield Abatement Solutions Products inherently protects exterior and interior materials and surfaces from vandalism damage caused by Scratching, Scuffing with sandpaper, Carbide drill bit, Keys, Knife and Etching Compounds, thus increasing the usable life of interior products and finishes. When considering materials and resources credits in new buildings certainly a very efficient material is desired, yet Graffiti Shield Abatement Solutions Products have a large quantity of recycled and recyclable content within their Abatement Solutions Products that emulate Glass, Mirror, Stainless Steel, Stone, Metal Cladding and even Some Wood Species which are could contribute to gaining that credit in a newly constructed building.

Within Existing Building Purchasing and Maintenance and Renovation policies, exists the opportunity to add products such as Graffiti Shield Abatement Solutions Products with their substantial resiliency and restorative benefits and further contributions to waste management policies when considering the ability for the product to be recycled at the end of its exceedingly long service life as compared material replacement options.

Graffiti Shield Abatement Solutions Products are manufactured in Anaheim, California 92806. New Construction projects within a 100 mile and 250 mile radius of this location can use this information to document their MR Credit Building product disclosure and optimization – sourcing of raw materials Option 2 as they contain a minimum of 35% recycled content; MR Credit Building product disclosure and optimization – material ingredients Option 3. Product Manufacturer Supply Chain Optimization (1 point)



Interior Environmental Quality (IEQ)⁷

Improve IEQ parameters that contribute to the comfort and well-being of the building's occupants by improving the enhancing indoor air quality, reducing indoor pollution and providing a connection to the outside.

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LEED Interior Environmental Quality Credit Category (continued)

When we consider indoor environmental quality and the factors that affect systems performance, comfort, acoustics and air quality Graffiti Shield Abatement Solutions Products can enhance those indoor interior environmental quality strategies.

Graffiti Shield Abatement Solutions Products will assist thermal decoupling properties for enhanced thermal comfort reducing ultraviolet energy transmission thru the building façade at locations where Graffiti Shield Abatement Solutions Products are utilized.

LEED v4 Acoustic Performance has now become a credit earning consideration, application of Graffiti Shield Abatement Solutions Products will inevitably contribute positively in this regard due to its sound dampening qualities that become obvious during the field measurements during acoustic STC performance testing when pursuing the respective credits.



Innovation (ID-EP-IO)⁸

Provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in green building categories not specifically addressed by LEED.

LEED Innovation (ID-EP-IO) Credit Category

Facilities that utilize Graffiti Shield Abatement Solutions Products should pursue an Innovation Credit for the positive contributions the use of this product will always have.

- In an existing building drastically increasing the building's envelope resiliency by its application.
- Vandalism Abatement Solutions built in via application
- Increasing the occupants comfort via acoustic performance
- Operational cost benefit scenario strategy via restoration and low cost alternative to replacements

In order to qualify for an Innovation Credit we have to achieve a significant measurable environmental performance using a strategy not addressed with in the respective LEED Green Building rating system. Further to be successful one has to “identify the following:

- the intent of the proposed innovation credit;
- proposed requirements for compliance;
- proposed submittals to demonstrate compliance; and
- the design approach or strategies used to meet the requirements.”

Innovation in Design, Innovation in Operations, LEED Accredited Professional



To support and encourage the design integration required by LEED to streamline the application and certification process.

Graffiti Shield Abatement Solutions Products cannot affect this Credit's attainment.

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Regional Priority⁹

To provide an incentive for the achievement of credits that address geographically specific environmental priorities.

LEED Regional Priority Credit Category

Regional Priority Credits are specific place based solutions that strategically address some environmental issues particular to a specific locale. These credits provide additional acknowledgement to project teams that work hard to address these issues of specific priority for each of 'six' identified regional priority credits available for every location and respective rating system.

The issues could be naturally occurring or manmade or affect environmental concerns which we have a concern for. Most areas urban areas within the Americas struggle with the issue of vandalism and graffiti and look for a solution that provides independence and resiliency. Graffiti Shield window Abatement Solutions Products will provide a positive resiliency contribution and may assist with Regional Priority Credit threshold attainment.

One could make outrageous claims that a specific product automatically gets an applicant LEED Points towards LEED Certification yet any claim of the sort is simply not true and not applicable to every project seeking LEED Certification. LEED Certification is a complex process where many factors are evaluated and contribute to the success of a project seeking certification. The purpose of this assessment is to provide the reader with a terse assessment of the LEED Credit Categories that can be positively affected via the installation of Graffiti Shield Abatement Solutions Products.

Graffiti Shield Incorporated was founded to address the need to provide a sustainable material, resource and operational expense saving technologies which would protect a variety of building and material surfaces from the effects of vandalism and graffiti.

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