CONSTRUCTION WASTE MANAGEMENT & THE LEED RATING SYSTEM

The LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. It is a self-assessing measurement tool, based on a point system, which focuses on a number of design and construction strategies aimed at reducing a building’s environmental footprint. The rating system is divided into five environmental categories with opportunities for innovation credits as well. The accumulation of credits or points, awarded for compliance with requirements defined by the rating system, determines the level of certification of that building – certified, silver, gold, or platinum. For more information about the U.S. Green Building Council and to access the complete LEED rating system and updates, please visit www.usgbc.org.

Carpet specifications may impact the following credits: Construction Waste Management, Recycled Content, Local/Regional Materials, Rapidly Renewable Materials, and Low-emitting Materials: Carpet. This data sheet addresses Construction Waste Management credits. For the purpose of this data sheet, NC refers to LEED for New Construction version 2.1, CI refers to LEED for Commercial Interiors (pilot draft), EB refers to LEED for Existing Buildings (pilot draft), and CS refers to LEED for Core and Shell (pilot draft).

This document has been assembled to aid in the specification of a carpet reclamation program and the subsequent calculation and documentation of credit requirements for the LEED rating system.

Construction Waste Management Credit Intent:
The intent of the Construction Waste Management Credit is to divert construction, demolition and land clearing debris from landfill disposal, to redirect recyclable recovered resources back to the manufacturing process, and to redirect reusable materials to appropriate sites.

The INVISTA™ reclamation program will reclaim all types of carpet fibers and carpet constructions regardless of the manufacturer—and nothing goes to the landfill. This program is independently certified by Scientific Certification Systems.

Resource and Materials Credit 2.1: 50% Diverted from Landfill 1 Point

Requirement: Develop and implement a waste management plan, quantifying material diversion goals. Recycle and/or salvage at least 50% of construction, demolition and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout.

Resource and Materials Credit 2.2: 75% Diverted from Landfill 1 Point

Requirement: Develop and implement a waste management plan, quantifying material diversion by weight or volume, but consistently throughout. Recycle and/or salvage an additional 25% (75% total) of construction, demolition and land clearing waste. Calculations can be done by weight or volume, but must be consistent throughout.

Resource and Materials Credit 2: 75% Diverted from Landfill 1 Point

Requirement: Develop and implement a waste management specification for any future building retrofits, renovations or modifications on the site that requires qualification of material diversion by weight. Recycle and/or salvage at least 75% (by weight) of any construction, demolition and land clearing waste (if applicable).
Referenced Standards
There is no standard referenced for this credit.

Calculations
To facilitate calculation and documentation, a spreadsheet is provided in the LEED Letter Template to calculate the percentage and weight of recycled and/or salvaged materials diverted from the landfill. The following calculations support that spreadsheet.

Track the weights of construction wastes that are landfilled and the weight of construction wastes that are recycled. To calculate the recycling percentage use the following equation:

\[
\text{Recycling (\%)} = \frac{\text{Recycled Waste (tons)}}{\text{Recycled Waste (tons)} + \text{Landfilled Waste (tons)}}
\]

Example:

<table>
<thead>
<tr>
<th>Recycled Waste (tons)</th>
<th>Landfilled Waste (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>265.0</td>
</tr>
<tr>
<td>Lumber</td>
<td>102.5</td>
</tr>
<tr>
<td>Wood</td>
<td>41.2</td>
</tr>
<tr>
<td>Masonry</td>
<td>23.7</td>
</tr>
<tr>
<td>Gypsum wallboard</td>
<td>28.4</td>
</tr>
<tr>
<td>Cardboard</td>
<td>15.8</td>
</tr>
<tr>
<td>Steel</td>
<td>7.1</td>
</tr>
<tr>
<td>Furniture</td>
<td>5.9</td>
</tr>
<tr>
<td>Carpet</td>
<td>11.7</td>
</tr>
<tr>
<td>Acoustical ceiling</td>
<td>9.4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>340.9</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Landfilled Waste (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misc. Landfilled Waste</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

Calculations:

\[
\text{Recycling (\%)} = \frac{340.9}{340.9 + 87.5} = 80.6\%
\]

80.6% recycling rate qualifies for all points

Contribution of reclaimed carpet = 1.9%

Because face weights and backing types vary by product, use the following chart for estimates only. The estimated weight is an average based on carpet type and secondary backing.

<table>
<thead>
<tr>
<th>Carpet type</th>
<th>Secondary backing</th>
<th>lbs/sq yd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadloom</td>
<td>Woven polypropylene/latex</td>
<td>5.0</td>
</tr>
<tr>
<td>Broadloom</td>
<td>Uniflex Foam</td>
<td>5.63</td>
</tr>
<tr>
<td>Broadloom</td>
<td>Hot Melt</td>
<td>5.2</td>
</tr>
<tr>
<td>Broadloom</td>
<td>Jute</td>
<td>4.22</td>
</tr>
<tr>
<td>Modular Tile</td>
<td>PVC</td>
<td>9.14</td>
</tr>
</tbody>
</table>

Most credits in the Material & Resource category are calculated using a percentage of total building materials. The specification of carpet alone is not likely to earn a point for construction waste management; rather, it may contribute to credit earning potential. Carpet may have a significantly greater impact on LEED-CI construction waste management contributions due to the scope of Commercial Interiors projects.
INVISTA™ reclamation program

In 1991, INVISTA™ initiated a program to find new ways to put used carpet back to work. To date, the INVISTA™ reclamation program has collected and recycled more than 100 million pounds of used carpet and has saved over 300,000 cubic yards of landfill space. In June of 2002, the INVISTA™ reclamation program received third-party certification as a viable solution for recycling used carpet.

With collection centers located in major cities throughout North America, trained installers carefully remove the old carpet and place it in a reclamation container. When enough carpet is collected to fill a 53-foot truck trailer, it is sent to our reclamation facility in Calhoun, GA for recycling. It’s guaranteed: No reclaimed carpet will be sent to a landfill, regardless of the manufacturer, type of fiber or how it was constructed.

You will receive a written guarantee and chain of custody verification that the reclaimed carpet will not be disposed of in a landfill.

Request a Quote

When using an INVISTA™ affiliated service provider, carpet reclamation is included in the installation quote. A line item will appear as part of your removal and disposal fees.

In cases where new installation is unnecessary, an INVISTA™ affiliated service provider can simply provide a quote for removal and reclamation of carpet. Your service provider will need to know the following information:

- Project location
- Square yard estimate of carpet to be reclaimed
- Schedule for removal process

To locate an INVISTA™ affiliated service provider or to learn more about carpet reclamation visit antron.invista.com or call 1-877-5-ANTRON.

Specification

Long and short form carpet reclamation specifications are available for download at antron.invista.com. The reclamation specifications—short form is shown below.

SECTION 01350
CARPET RECLAMATION
SPECIAL PROJECT PROCEDURES - CARPET RECLAMATION

SPEC NOTE:
This section specifies requirements for removal and recycling used carpet and scrap from new installation. Preparation of existing substrate should be specified in Section 09680

1.1 SUMMARY
A. Objective: The environmental objective of this Project is to produce a [building][project] which enhances the health and well being of its occupants, while minimizing exposure to materials or products which may be injurious to the installers and occupants. Another objective is to minimize environmental burdens throughout the life cycle of the office space [work environment] that have affect on a local, regional and/or global scale.
B. Reclamation Agency: The Environmentalists™, or approved vendor, providing used carpet recycling under the INVISTA™ Reclamation Program, formerly the DuPont™ Carpet Reclamation® program.
Beyond single environmental attributes . . .

The strongest environmental statement any one of us can make is to specify products that are durable and can be used longer. It is important to remember that "sustainability" by definition is any practice that would ensure the continued viability of a product well into the future. A carpet of Antron®, the most specified brand of carpet fiber, is engineered to look and perform better for a longer period of use than any other carpet. This performance yields the best life cycle and lowest total environmental impact.

All Antron® BCF carpet fiber is certified as an Environmentally Preferable Product (EPP). Environmentally Preferable Products are defined by the 1998 Executive Order 13101 as a product that has a lesser or reduced effect on human health and the environment when compared to other products that serve the same purpose. The EPP standard is based on EPA guidelines and ISO standards. Critical factors in this certification are product performance, total environmental impact, use of green energy, safety and health in manufacturing and use, and end-of-life responsibility.

For more information call 1.877.5.ANTRON or visit us at antron.invista.com

Environmentally Preferable Products, established by Executive Order 13101, are certified by Scientific Certification Systems as having a lesser or reduced effect on health and the environment when compared with competing products that serve the same purpose. Antron® is a registered trademark for carpet fiber. © INVISTA Inc. 2004. All rights reserved.

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