



Fire Protection Products



BROADCAST NO. 05-1014
3M Fire Protection Products

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TITLE: LEED CREDITS USING 3M FIRE PROTECTION PRODUCTS

The following descriptions of the LEED Green Building Rating System were taken from the LEED Website, which can be accessed at www.leedbuilding.org or <http://www.usgbc.org>

“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. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution. LEED standards are currently available or under development for:

- *New commercial construction and major renovation projects (LEED-NC)*
- *Existing building operations (LEED-EB)*
- *Commercial interiors projects (LEED-CI)*
- *Core and shell projects (LEED-CS)*
- *Homes (LEED-H)*
- *Neighborhood Development (LEED-ND)*

USGBC member committees are actively collaborating on new and existing LEED standards.”¹

“LEED was created to:

- *define "green building" by establishing a common standard of measurement*
- *promote integrated, whole-building design practices*
- *recognize environmental leadership in the building industry*
- *stimulate green competition*
- *raise consumer awareness of green building benefits*
- *transform the building market*

LEED provides a complete framework for assessing building performance and meeting sustainability goals. Based on well-founded scientific standards, LEED emphasizes state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED recognizes achievements and promotes expertise in green building through a comprehensive system offering project certification, professional accreditation, training and practical resources.”²

LEED-NC (New Construction) Credits:

It is important to note that the LEED Green Building Rating System is directed towards establishing standards, and is not a certification program that allows a company to get their products "listed". It is the responsibility of the product manufacturer to verify whether their products will or will not meet those standards. If the products meet the appropriate standards/requirements, they can assist the architect or project manager in obtaining LEED credits. Based on the analysis provided below, 3M Fire Protection Products can assist with obtaining up to six LEED-NC Credits.

There are four different levels of LEED-NC certification, and these are based on the number of credits that are obtained for the project. These levels are as follows:

- Certified Level = 26 to 32 Points
- Silver Level = 33 to 38 Points
- Gold Level = 39 to 51 Points
- Platinum Level = 52 + Points (69 Possible)

The points that can be obtained are segmented into the six LEED-NC credit categories that are listed below.

- Sustainable Sites (14 Possible Points)
- Water Efficiency (5 Possible Points)
- Energy & Atmosphere (17 Possible Points)
- Materials & Resources (13 Possible Points)
- Indoor Environmental Quality (15 Possible Points)
- Innovation & Design Process (5 Possible Points)

The LEED Green Building Rating System for New Construction & Major Renovations has recently been updated from Version 2.1 to Version 2.2. Projects registered after December 31, 2005 must meet the Version 2.2 requirements.

The LEED Green Building Rating System for New Construction & Major Renovations (LEED-NC) Version 2.1 and Version 2.2 publications provide a breakdown of each credit and the requirements that need to be followed to obtain that credit. These publications can be accessed at the following website: <https://www.usgbc.org/leed/nc>

In order to assist our customers in the certification and verification process for obtaining LEED points, 3M Fire Protection Products has assembled a listing of LEED-NC credits where we can provide assistance. These credits are listed below along with a summary of the credit requirements. Please refer to the on-line publications listed above and/or to the LEED-NC Reference Guide, which can be purchased from the United States Green Building Council (USGBC), for detailed information on each credit requirement. Please note that 3M can only assist in obtaining points since our products will typically be a component of a larger strategy for obtaining an individual credit. This statement would be true for other firestop product manufacturers as well.

How To Obtain A 3M Engineering Judgment Letter on LEED Credits:

In order to obtain an Engineering Judgment Letter from 3M specifying which LEED credits can or cannot be obtained on a specific project, 3M Technical Service must know the version of the LEED Rating System being used (for example NC Version 2.1, NC Version 2.2, EB Version 2, etc.), the name of the specific credits being requested by the architect or project manager, the 3M products being used, and the location of the project. This information can be submitted to 3M through the normal channels used for requesting an Engineering Judgment. Please contact your 3M Fire Protection Product Sales Representative or Distributor for assistance.

LEED-NC Version 2.1, Materials & Resources Credit 5.1 - Regional Materials: 20% Manufactured Regionally and Version 2.2, Materials & Resources Credit 5.1: 10% Extracted, Processed & Manufactured Locally:

To obtain this credit under Version 2.1, 20% of the building materials and products used must be manufactured within 500 miles of the project site. Due to changes made, LEED-NC Version 2.2 requires that products be both extracted and manufactured within 500 miles. Therefore, 3M Fire Protection Products can only assist with this credit for LEED-NC Version 2.1. To determine if 3M can assist in obtaining this credit, the location of the project must be provided to 3M. Refer to the section on obtaining a 3M Engineering Judgment Letter for additional information.

LEED-NC Version 2.1 & 2.2 Indoor Environmental Quality Prerequisite 2 - Environmental Tobacco Smoke (ETS) Control:

Prerequisite 2 requires that steps be taken to prevent exposure of the building occupants, indoor surfaces and ventilation air distribution systems to Environmental Tobacco Smoke (ETS). Based on LEED-NC Version 2.1 and 2.2, one method of accomplishing this is to restrict smoking to certain rooms. These rooms must be directly vented to the outdoors and maintain a negative pressure of 7 Pa (0.03 inches of water gauge). LEED-NC Version 2.2 allows an average negative pressure of 5 Pa (0.02 inches of water gauge). Version 2.2 also allows a residential building option whereby uncontrolled pathways for ETS transfer between individual residential units can be minimized by sealing penetrations in walls, ceilings and floors in the residential units, and by sealing vertical chases adjacent to the units.

3M has a large selection of L-Rated, tested and listed firestop systems that can be used to obtain a low air transmission rate and to seal through penetrations, joints, etc. in rooms. By sealing these openings, a negative pressure can be maintained and therefore the firestop system can assist in meeting the LEED-NC credit requirements. The L Rating criteria determines the amount of air leakage, in cubic feet per minute per square foot of opening (CFM/sq ft), through the firestop system at ambient and/or 400°F air temperatures at an air pressure differential of 0.30 inches of water gauge. Please note that the L Ratings are obtained at a pressure approximately 10 times greater than those required by LEED-NC requirements. To obtain a list of the specific firestop systems that can be used for a particular application, details on the room construction must be provided to 3M.

LEED-NC Version 2.1 & 2.2, Indoor Environmental Quality Credit 3.1 - Construction IAQ (Indoor Air Quality) Management Plan During Construction:

To obtain this credit, an Indoor Air Quality Plan must be developed for construction and pre-occupancy that will protect on-site or installed absorptive materials from moisture damage. 3M has the largest selection of UL Class I Water Tight Firestop Systems available on the market today. Class I Water Tight Firestop Systems are capable of withstanding a water pressure head of 3-feet for 72 hours. Because of the performance capabilities of the 3M Water Tight Firestop Systems, they can help protect building materials and components from water and moisture exposure due to rain/weather, burst pipes, activated sprinkler systems, etc. These firestop systems will also help the building materials and interior building components stay dry after the building is occupied as well. By helping maintain a drier indoor environment, they can assist in preventing water and moisture related issues such as musty smells, etc. and therefore assist in providing a better level of indoor air quality. The products that would be used to meet these requirements are the Fire Barrier 1000 NS, 1003 SL, and 3000 WT Sealants.

LEED-NC Version 2.1 & 2.2 Indoor Environmental Quality Credit 4.1 - Low-Emitting Adhesives and Sealants:

To obtain this credit, the products used must meet the Volatile Organic Compounds (VOC) requirements as specified in the credit description. 3M Caulk, Sealant, Putty and Spray Firestop Products meet the credit requirements for both Version 2.1 and 2.2. Refer to the section on obtaining a 3M Engineering Judgment Letter for additional information.

LEED-NC Version 2.1 & 2.2 Indoor Environmental Quality Credit 5 - Indoor Chemical & Pollutant Source Control:

To obtain this credit, steps must be taken to prevent exposure of the building occupants to potentially hazardous chemicals. Based on LEED-NC Version 2.1 chemical use areas (including housekeeping/laundry areas, and copy/printing rooms) must be sealed with deck-to-deck partitions and directly vented to the outdoors to maintain a negative pressure of at least 7 Pa (0.03 inches of water gauge). LEED-NC Version 2.2 expands the credit requirement to include garages and protection from hazardous particulate. Version 2.2 also changes the average negative pressure requirement to 5 Pa (0.02 inches of water gauge).

3M has a large selection of L-Rated, tested and listed firestop systems that can be used to obtain a low air transmission rate and to seal through penetrations, joints, etc. in rooms. By sealing these openings, a negative pressure can be maintained and therefore the firestop system can assist in meeting the LEED-NC credit requirements. The L Rating criteria determines the amount of air leakage, in cubic feet per minute per square foot of opening (CFM/sq ft), through the firestop system at ambient and/or 400°F air temperatures at an air pressure differential of 0.30 inches of water gauge. Please note that the L Ratings are obtained at a pressure approximately 10 times greater than those required by LEED-NC requirements. To obtain a list of the specific firestop systems that would work for a particular application, details on the room construction must be provided to 3M.

LEED-NC Version 2.1 & 2.2 Innovation & Design Process Credit 1 - Innovation in Design - Awarding of Credits Must be Determined by the USGBC:

Up to four Innovation & Design Process Credits can be obtained under LEED-NC Version 2.1 and 2.2. To obtain an innovation credit, the project must substantially exceed a LEED performance credit such as energy performance or water efficiency. The intent of this credit is to have the architect or project manager apply strategies or measures that are not covered by LEED-NC.

The determination of what constitutes a LEED Innovative Design Credit can only be made by LEED/USGBC at the time of project submittal. Please refer to the LEED-NC Green Building Rating System for New Construction (LEED-NC) Version 2.1 & 2.2 and/or the LEED-NC Reference Guide for additional information.

One possible innovation credit includes the use of 3M Water Tight Firestop Products to assist in the control of moisture/water exposure both before and after building occupation. Since the current credit only applies for water and moisture control during construction, the use of 3M Water Tight Firestop Products would extend that protection to buildings after the building is occupied. Occupied buildings are susceptible to water damage from activated fire sprinkler systems, water spills, burst pipes, etc. 3M Water Tight Firestop Products can be used to help seal penetrations and openings in floors and walls and help prevent water and moisture migration, such as from floor-to-floor. By helping maintain a drier indoor environment, they can assist in the protection of building components, and assist in preventing water and moisture related issues such as musty smells, etc. that can affect the indoor air quality after the building is occupied.

Limiting the migration of water is especially important if Rapidly Renewable Materials (such as bamboo flooring, wool carpets, straw board, cotton batt insulation, linoleum flooring, poplar OSB, sunflower seed board, wheatgrass cabinetry and others) are used as building components since these natural components are likely much more sensitive to moisture exposure issues than typical synthetic building materials, both before and after construction. Please refer to the LEED-NC Green Building Rating System for New Construction (LEED-NC) Version 2.1 & 2.2 and/or the LEED-NC Reference Guide for additional information on Material Resources Credit 6, Rapidly Renewable Materials.

Other Related Benefits of 3M Fire Protection Products:

Please note that in the credit examples listed above, the use of 3M Fire Protection Products can directly assist in obtaining a LEED credit. 3M Fire Protection Products may also provide assistance with firestop needs related to the **LEED-NC Version 2.1 & 2.2, Materials & Resources Credits 1.1, 1.2 and 1.3 – Building Reuse**. The use of 3M Fire Protection Products for these applications can help bring the older fire-rated portions of the building up to fire code, provided they are installed in accordance with an applicable listed design, a 3M Engineering Judgment, or to the requirements set forth by the Authority Having Jurisdiction. To obtain these credits, the project must maintain a certain percentage of the existing structure and/or components. Please refer to the LEED-NC Green Building Rating System for New Construction (LEED-NC) Version 2.1 & 2.2 and/or the LEED-NC Reference Guide for additional information on these credits.

1, 2: Quotes taken from the LEED Website (www.leedbuilding.org)

Acknowledgement: The information on the LEED Green Building Rating System used in this document was taken from the following sources: The United States Green Building Council (USGBC) Website <http://www.usgbc.org>, the LEED Green Building Rating System for New Construction (LEED-NC) Version 2.1 & 2.2, and/or the LEED-NC Version 2.1 Reference Guide.

THIS BROADCAST IS BEING SENT TO:

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