

HSE profile and Green Building contribution

Hilti Firestop Plug CFS-PL

LEED and **BREEAM** are third-party certification programs which provide a benchmark for the design, construction and operation of high-performance green buildings. Both promote a whole-building approach to sustainability and evaluate it by scoring points based on a set of criteria. Individual products cannot be certified under LEED or BREEAM but they can contribute to criterion compliance (prerequisites or credits).

The following information shows the areas where Hilti Firestop Plugs can potentially contribute, as well as the maximum number of points that can be achieved by accomplishing each criteria and state the required values and explanations for the building certification process.

The new **Hilti Firestop Plug** is a polyurethane based preformed product and is particularly suitable for remedial work and ideal for floors as no formwork is required. It is easy and quick to install, can be re-penetrated and has high movement capabilities. It is free from dust and volatile fibers and it contains no halogens or solvents. It also presents high smoke and gas tightness performance.



		LEED		BREEAM	
		Criteria (Up to # points) & Evaluation			
Sustainable sites management					
Construction site waste	No waste or dust generation during installation and repenetration	SS Prerequisite 1	☆☆☆	Wst 1 (3)	☆☆☆
Life cycle assesment, Product Carbon Footprint	PCF (GWP 100 years): 0.3-3.0 kg CO2-eq (depending on size) - low global warming potential	SS Credit 5.2 (1)	☆☆☆	Man 3d (4 for Man 3) Man 3a (4 for Man 3) Mat 1 (4)	☆☆☆
Water consumption	No water demand during installation and repenetration	WE Credit 2 (2)	☆☆☆	Man 3c (4 for Man 3)	☆☆☆
Water pollution	No waste water generation during installation and repenetration		☆☆☆	Man 3e (4 for Man 3)	☆☆☆
Application	No electric tool needed for installation and repenetration	-		-	

Energy Optimization, Atmosphere and Pollution

Air tightness*	Air permeability: <5m3/h m2 at 50 Pa (acc to EN 1026) - based on test report dated Jan. 07, 2013	EA Prerequisite 2	☆☆☆	Ene 1 (15) Ene 6 (1)	☆☆☆
Thermal insulation*	λ = approx. 0.089 W/mK - based on test report dated Aug. 08, 2012	EA Credit 1 (1-19) IEQ Credit 7.1 (1)	☆☆☆	Ene 1 (15) Mat 6 (2)	☆☆☆
Ozone Depletion Potential	ODP, catalytic: < 0,00001 kg R11-eq per unit	EA Prerequisite 3	☆☆☆	IC (1)	☆☆☆

Materials and Resources

Reusability	Cables or pipes could be changed or removed without changing the Hilti Firestop Blocks. There is not need for reinstallation during building lifetime and so no material waste generation.	MR Credit 1.1 (1-3) MR Credit 1.2 (1)	☆☆☆	Wst 1 (3)	☆☆☆
Product recycling	The product cannot be recycled or salvaged but the packaging can be totally recycled or salvaged	MR Credit 2 (1-2)	☆☆☆	Wst 1 (3)	☆☆☆
Recycled content	No, since firestop products require the traceability of their raw materials to guarantee uniform and constant product performance and quality.	MR Credit 4 (1-2)	☆☆☆	Mat 5 (3)	☆☆☆
	The packaging is partially manufactured with recycled material		☆☆☆		☆☆☆
Product origin	Raw materials origin: Germany	MR Credit 5 (1-2)	☆☆☆		☆☆☆
	Manufacturing location: Germany		☆☆☆		☆☆☆
Rapidly Renewable Materials	Raw materials are not rapidly renewable	MR Credit 6 (1)	☆☆☆	-	

Indoor Environmental Quality, Health and Wellbeing

IAQ (Indoor Air Quality) Management	No dangerous good or labelling needed and no content of carcinogens	IEQ Credit 3.1 (1) IEQ Credit 3.2 (1)	☆☆☆	-	
	Halogen Free Flame Retardants		☆☆☆		
Low-Emitting Materials Volatile Organic Compounds	VOC acc to LEED 2009 / EPA #24: 4,9 g/l - see certificate dated Sept. 20, 2011	IEQ Credit 4.1 (1) IEQ Credit 4.2 (1)	☆☆☆	Hea 9 (1)	☆☆☆
Acoustic Performance & Soundproofing	Rw** = 54 dB and STC** = 55 depending on size (refer to test report ESP 008602-1-ISO dated April 30, 2012 and ESP 008602-1 dated Dec. 20, 2011). Protection to the sound passage and noise reduction.	-		Hea 13 (1)	☆☆☆

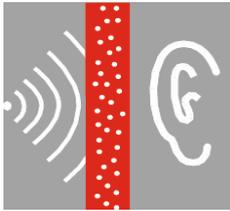
- ☆☆☆ Product highly contributes to Green Building certification under this clause
- ☆☆☆ Product contributes to Green Building certification under this clause
- ☆☆☆ Not applicable for this product or dependent on each situation and so not possible to evaluate in general terms
- ☆☆☆ Product makes no contribution to Green Building certification under this clause

* Lower heating and cooling costs ** Sound reduction Index

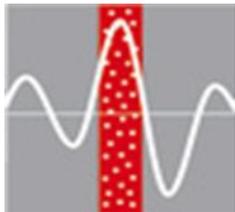
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BU Chemicals, CETsp&CMT

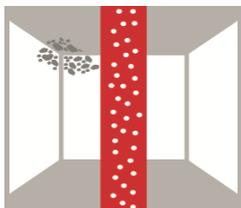
The sustainability of sites is improved with Hilti Firestop Plugs by supporting LEED, BREEAM and the following extra properties and highly important characteristics of a building, as well as, preventing effectively from the spread of a fire:



Sound insulation is of great importance to the health and well-being of the occupants of a building. Hilti firestop products are tested for this purpose and individually tailored to the requirements of the installation and building structure. Hilti Firestop Plugs, tested in accordance with ISO 140-3, 20140-10 and 717-1 standard, allow compliance with the applicable sound insulation specifications for fireproofed penetrations through walls and floors, and joints between building components.



There is a huge risk of post-earthquake impacts and a following fire represents a major one for the safety of human lives and protection of assets and facilities. In a building there are a lot of non-structural components, like pipes and firestop systems, that are expected to continue working after an earthquake. Hilti has conducted extensive tests to determine the behavior of Hilti Firestop products in a seismic event. The results for Hilti Firestop Plugs show their capacity to assurance fire integrity of compartments and joints and the continuity of important operations and supply systems and also to avoid smoke development and negative effects of broken service connections.



Mold in a building can attack and weaken many types of build materials and fungus, caused by moisture and humidity, can be seriously detrimental to the health of building users. Measures to successfully prevent the formation of mold and mildew in a building must be taken at the planning stage. Hilti Firestop Plugs are manufactured with materials that provide no nutrition for fungi and tested in accordance with ISO 846 and ASTM G21, to ensure that functionality is not compromised.

All the packagings and cans used by Hilti can be recycled. Hilti Firestop Plugs are preformed, so no waste is generated on the jobsite during the construction phase, and they are considered household waste at the end of the life of the building. Please consider your national law regarding the disposal of the Firestop Plug and contact your local Hilti partner for further information.



Volatile Organic Compounds are compounds emitted as gases from certain solids or liquids. Depending on their concentration and the exposure time, they can be harmful for the health causing effects like eye, nose, and throat irritation, headaches, loss of coordination, nausea, damage to liver, kidney, and central nervous system. And some are even suspected to cause cancer. French VOC labelling regulation foresees that from 1st January 2012, any covered product placed on the market has to be labelled with emission classes based on their emissions after 28 days, tested in line with ISO 16000 standards and calculated for the European Reference Room (TC 351).



If you need additional information or documentation on a certain HSE issue, please do not hesitate to contact your local Hilti partner - we are happy to provide you with additional information required to make your green building project a success.



Hilti Firestop Plugs have been registered in the Swedish database BASTA. BASTA registration means that we confirm that this product meets agreed properties criteria regarding properties that are harmful to the environment and health. See www.bastaonline.se.

