

# LEED COMPLIANCE PRODUCT CARD

## Technical insulation



TECHNICAL  
INSULATION



COOLING



AIR  
CONDITIONING



VENTILATION

## AF/Armaflex Class 0

AF/Armaflex Class 0 is a flexible, closed-cell insulation material with built-in Microban® antimicrobial protection<sup>1</sup>.

## LEED 2009

### for Green Building Design and Construction

LEED is a multi-criteria scheme to assess and certify buildings. Established in USA, it emphasises sustainable development by promoting green, healthy and eco-friendly buildings. Features of the buildings which may be assessed are: materials, quality of indoor environments and energy efficiency etc. Nowadays it has become a standard in real estates markets.





LEED compliance product card for AF/Armaflex Class 0 was prepared to assist designers, architects, engineers, consultants and developers to provide clear information and to facilitate choosing proper product. Appropriate LEED categories related to AF/Armaflex Class 0 features were chosen and checked. AF/Armaflex Class 0 compliance and contribution to LEED categories are presented below.



Product compliant



Product contributes to a better rating

LEED Issue	Credit	LEED Requirements	Points	Product compliance
EA Prerequisite 2	Minimum Energy Performance	Building's energy performance calculated using computer simulation model should demonstrate a 10% improvement for new buildings, or a 5% for major renovations in comparison to the baseline as a compulsory achievement by using energy efficient measures.	-	AF/Armaflex Class 0 is a part of building's systems. Adjusting proper design parameters will enable to improve energy efficiency and its supply to the system appliances. For energy efficiency the main parameter of the AF/Armaflex Class 0 is thermal conductivity which is product thickness dependant: from $\lambda_{0°C} < 0,033 \text{ W/mK}$ to $\lambda_{0°C} < 0,036 \text{ W/mK}$ <sup>1</sup> . 
EA Credit 1	Optimize Energy Performance	Building's energy performance calculated using computer simulation model should demonstrate an improvement in comparison to the baseline. Number of points awarded depends on percentage improvement and building type.	21**	
IEQ Credit 3.2	Construction Indoor Air Quality Management Plan – before occupancy	A building flush-out or IAQ testing should be conducted prior to occupancy to demonstrate contaminant limits are not exceeded. The maximum concentration of formaldehyde in air is: 27 parts per billion while volatile organic compounds (VOC): 500 micrograms per cubic meter.	1**	Product AF/Armaflex Class 0 may contribute reducing air contamination. Sampling, testing and evaluation of the product determine low levels of formaldehyde and VOC <sup>2</sup> . 
IEQ Credit 7.1	Thermal Comfort	An appropriate level of thermal comfort within the building should be provided by designing HVAC systems in accordance with ASHRAE 55-2004 Thermal Environmental Conditions for Human Occupancy.	1**	AF/Armaflex Class 0 has got an indirect impact on achieving acceptable range of operative temperature and humidity by providing protection for pipes or air ducts. Therefore it prevents condensation of the humidified air. Water vapour diffusion resistance of AF/Armaflex Class 0 which is product thickness dependant is: from $\mu > 7000$ to $\mu > 10000$ <sup>1</sup> . 
IEQ Credit 7.2	Thermal Comfort – Verification	A measurements of relevant environmental variables in potential problem areas indicated by building's occupants should be conducted. Measurements should be carried out in accordance with ASHRAE standard 55-2004.	1**	
IEQ Credit 10	Mold prevention (Schools only)	HVAC systems and controls should be designed to limit space relative humidity to 60% or less at all load conditions. Addition requirements should be met: compliance with IEQ Credits c3.1, c7.1, c7.2 and implementation an IAQ management program in line with the U.S. Environmental Protection Agency (EPA).	1**	AF/Armaflex Class 0 may contribute protecting against mold and mildew within the building. It is equipped with MICROBAN® technology which is EPA-registered antimicrobial protection. 

For detailed information please refer to the documents provided by manufacturer:

<sup>1</sup> AF/Armaflex Class 0 product card

<sup>2</sup> Eurofins Product Testing A/S Attestation and Test report No. 392-2013-GSH-CEFEP\_01

\*\* AF/Armaflex Class 0 has an indirect impact on the following categories. Using AF/Armaflex Class 0 with another appropriate products may contribute to achieve credits. Maximum number of credits influenced by the product for each category was stated above.

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## LEED v4

### for Building Design and Construction

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Product compliant



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EA Prerequisite Minimum Energy Performance	Option 1. Whole-building energy simulation	An energy calculation should be carried out based on a simulation model in accordance to the ANSI/ASHRAE/IESNA Standard 90.1-2010, Appendix G with errata. An improvement of 5% (new construction projects), 3% (major renovations projects), 2% (core and shell projects) over a baseline should be demonstrated.	-	AF/Armaflex Class 0 is a part of building's systems. Adjusting proper design parameters will enable to improve energy efficiency and its supply to the system appliances. For energy efficiency the main parameter of the AF/Armaflex Class 0 is thermal conductivity which is product thickness dependant: from $\lambda_{0°C} < 0,033 \text{ W/mK}$ to $\lambda_{0°C} < 0,036 \text{ W/mK}$ .
EA Optimize Energy Performance	Option 1. Whole-building energy simulation	Building's energy performance calculated using computer simulation model should demonstrate an improvement in comparison to the baseline. Number of points awarded depends on percentage improvement.	18**	
EQ Thermal Comfort	Thermal Comfort Design Option 2. ISO and CEN Standards	A thermal comfort analysis should be carried out in accordance to the standards: ISO 7730:2005 and EN 15251:2007.	1**	
MR Building Product Disclosure and Optimization – Environmental Product Declarations	Option 1. Environmental Product Declarations (EPD)	At least 20 materials sourced from 5 different manufacturers should have product specific Type III EPD. EPD should conform standards: ISO 14025, ISO 14040, ISO 14044 and EN 15804, at least cradle to gate scope and include an external verification.	1*	
EQ Low-Emitting Materials	Option 1. Product category calculations	Up to 7 product categories of finishing materials should be compliant with relevant volatile organic compounds (VOC) emission levels and testing standards: - CDPH Standard Method (2010) or - German AgBB Testing and Evaluation Scheme (2010) or - ISO 16000-3/6/9/11:2010 in conjunction with AgBB or French legislation on VOC emission class labeling or the DIBt testing method (2010).	3*	
EQ Thermal Comfort	Thermal Comfort Design Option 1. ASHRAE Standard 55-2010	An appropriate level of thermal comfort within the building should be provided by designing HVAC systems in accordance with ASHRAE 55-2010 Thermal Environmental Conditions for Human Occupancy with errata or a local equivalent.	1**	

For detailed information please refer to the documents provided by manufacturer:

<sup>1</sup> AF/Armaflex Class 0 product card

<sup>2</sup> Environmental Product Declaration: EPD-ARM-20150110-IBB1-DE

<sup>3</sup> Eurofins Product Testing A/S Attestation and Test report No. 392-2013-GSH-CEFEP\_01

\* AF/Armaflex Class 0 has a direct impact on the following categories. While using AF/Armaflex Class 0 with another appropriate products - credits stated above may be awarded. Maximum number of credits influenced by the product for each category was stated above.

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