



INSTALL IT. TRUST IT.

# AF/ArmaFlex

The first choice for professional installations

- // Increases equipment life cycle
- // High flexibility and ease of installation
- // Reliable condensation control and prevention of corrosion under insulation (CUI)
- // 10-year System Warranty possible

[www.armacell.eu](http://www.armacell.eu)



 **armacell**<sup>®</sup>  
ArmaFlex<sup>®</sup>

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# AF/ArmaFlex



## 10-YEAR SYSTEM WARRANTY

The ArmaFlex System Warranty is a partner scheme in which trained and certified insulation companies receive a warranty of up to ten years instead of the two year warranty period. This concept, which is unique in the market, gives the certified companies a direct competitive advantage when submitting tenders. What's more, specifiers, trade partners and clients benefit from the seal of quality, too. For more information, please visit:

<https://arma.link/systemwarranty>



### // Trusted Since 50 Years

With a combination of internal and externally monitored technical values we offer consistently high-quality products. This is the result of 50 years experience and continual research and further development of the product properties which determine the quality. Since AF/ArmaFlex is distributed throughout Europe, it does not just comply with national standards and controls but we are also thinking ahead, preparing for the future European product and testing standards. The combination of high  $\mu$ -value, low  $\lambda$ -value and the engineered wall thickness of AF/ArmaFlex not only ensures reliable protection against condensation, but also meets the most stringent energy-saving regulations, contributing to an optimal energy efficiency of the installation.



### // Complete System

Armacell offers a complete carefully considered and coordinated system solution for any professional insulation challenge: AF/ArmaFlex standard, self adhesive and endless tubes and sheets, tape and accessories. Armafix AF pipe supports to avoid thermal bridging, ArmaFlex Protect fire barrier as well as AF/ArmaFlex with Arma-Chek flexible covering systems. The wide range of specially developed accessories such as the new generation of adhesives and the ArmaFlex Toolbox for applying ArmaFlex insulation materials make installation even easier.

At [www.armacell.com](http://www.armacell.com) you will find in the Refrigeration & Air-Conditioning section under AF/ArmaFlex readymade **specification texts** to download and use.

**ArmaWin** is the technical calculation program of Armacell. This allows you to determine i.a. the correct insulation thickness to prevent condensation and to minimize energy losses.



**Application trainings:** We train insulation contractor and offer valuable assistance for your daily work. A successful participation in a training, we certify with one in the Industry recognized certificate. All services around our products you will find at [www.armacell.com](http://www.armacell.com)



**// Triple Security**

AF/ArmaFlex is the professional flexible insulation for reliable continuous condensation control. The optimal combination of a very low thermal conductivity and extremely high resistance to water vapour transmission prevents long-term energy losses and water vapour ingress and reduces the risk of corrosion under insulation.



**// AF/ArmaFlex Active Microban® Antimicrobial Protection**

An EPA (Environmental Protection Agency, US) survey indicates that conditioned areas are frequently breeding havens for microbes and contamination. Indoor air can be up to 10 times more polluted than outdoor air.

Microbial pollution is a key element of indoor air pollution. Microbes, which can be found in and on HVAC systems, include stain and odor causing bacteria, mould and mildew. These microbes subsequently emit spores, cells, fragments and volatile organic compounds (VOC) into indoor air, thus possibly contributing to the well-known sick building syndrome. Mould and mildew additionally initiate the biological or chemical degradation of materials. AF/ArmaFlex is the first flexible insulation material equipped with MICROBAN technology. When microbes come in contact with the insulation surface, MICROBAN protection penetrates the cell wall of the microorganism, disabling its ability to function, grow and reproduce. Because the protection is built in during the manufacturing process, it will not wash off or wear away. This gives AF/ArmaFlex products an added level of protection against mould and mildew and is therefore the ideal long-term solution for insulating ventilation or air-conditioning equipment in public buildings such as schools, hospitals, elderly homes, offices and airports, as well as the mechanical systems in the pharmaceutical or food industries.

# AF/ArmaFlex fitting covers

The dust- and fibre-free AF/ArmaFlex is not only very pleasant to work with, it's also time- and cost-efficient. Installation is now even simpler and faster with the new prefabricated AF/ArmaFlex fitting covers. Whereas in the past installers often had to fabricate elbows and T-pieces from ArmaFlex tubes and sheets under time pressure and difficult conditions on the building site, they can now turn to prefabricated products. The fitting covers are not only much faster and easier to install, they also optimise material consumption by minimising waste.



## // The Advantages are Clear:

- Significant time savings (no prefabrication by hand, fewer tack-drying periods)
- Higher performance with the same installation time
- Reduction in the amount of adhesive used on the building site
- Greater reliability (less risk of application errors on the seams)
- Cost savings (billable services)

The fitting covers are perfectly coordinated with both the AF/ArmaFlex and Arma-Chek Silver range. Further time and cost-savings can be achieved with the factory covered Arma-Chek Silver products.

## // Significant Time Savings

As a case study carried out by Armacell shows, previously unused time-saving potential can be tapped by installing AF/ArmaFlex fitting covers. The study is based on a typical tender for low-temperature insulation work. It includes the insulation of a total of 1,241 m of pipework and 1,223 fittings, including 946 elbows and T-pieces. If AF/ArmaFlex fitting covers are used in this project, the assembly time can be reduced by up to 70 % compared to the traditional installation process. In this case that corresponds to a 40-hour working week.



## // Trend Towards Increased Use of Pre-fabricated Components

Today, employees are more in demand than ever in the construction industry and the insulation sector is particularly hard hit by the shortage of skilled workers. This trend will become even more pronounced in the future as the number of apprentices in the skilled trades continues to decrease. Therefore, industrially prefabricated components are becoming more and more attractive. Using ArmaFlex fitting covers allows skilled personnel to concentrate on more complex tasks – without compromising the quality and reliability of the application.



# AF/ArmaFlex in the Hilton Schiphol Hotel

If the hotel industry awarded stars for the insulation concept, the new Hilton Amsterdam Airport Schiphol Hotel would certainly have deserved a fifth star. The impressive building complex relies on the tried-and tested combination of AF/ArmaFlex and Armafix AF and the insulation work was carried out under the ArmaFlex System Warranty.



### // Challenge

When planning the hotel great importance was attached to the sustainability of the building. Energy consumption is 10 % lower than the Energy Performance Coefficient (EPC) legally required in the Netherlands. Consultant engineers Deerns achieved this feat by combining a wide range of energy-saving measures.

### // Solution

All in all, Unica Installatietechniek installed 31 km of pipework in the building complex, around half of which is dedicated to cooling the building. These pipes have feed temperatures of 10 °C and return temperatures of 18 °C. To protect the chilled water pipes against condensation and energy losses, consultant engineers Deerns specified AF/ArmaFlex insulation material. On the pipes and on other components in the plant rooms employees of the insulation contractor Riweltie BV installed tubes and sheets in insulation thicknesses of 16 and 19 mm. The outdoor air intake ducts were insulated with some 4,000 m<sup>2</sup> of AF/ArmaFlex sheet material in an insulation thickness of 25 mm.



### Hans de Klein

**Technical Commercial Director at Riweltie BV insulation contractors**

*„We realized this project with the ArmaFlex System Warranty. When we use AF/ArmaFlex in combination with the Armafix AF pipe support we now receive a project-related warranty of 10 years. A great idea from Armacell.“*

## TECHNICAL DATA - AF/ARMAFLEX

Brief description	Highly flexible, closed-cell insulation material with high water vapour diffusion resistance, low thermal conductivity and built-in Microban antimicrobial protection.
Material type	Flexible elastomeric foam based on synthetic rubber (NBR). Factory-made flexible elastomeric foam (FEF), according to EN 14304.
Additional material information	Self-adhesive coating: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil. Traces of silicone may be present on the paper/foil protecting self-adhesive closures.
Product colour range	Black
Applications	Insulation/protection for pipes, air ducts, vessels (incl. elbows, fittings, flanges etc.) of air-conditioning/refrigeration and process equipment to prevent condensation and save energy. Structure-borne noise reduction in service-water and waste-water installations.
Installation	Certified and compatible adhesive for a long-term performing system is ArmaFlex 520. Please refer to the relevant Armacell application manual for advice. For further information please contact our Customer Service Centre.
Declaration of performance	Declaration of Performance in accordance with Article 7(3) of Regulation (EU) No 305/2011 is available at <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a> .

Property	Value / Assessment		Standard / Test method
<b>Temperature range</b>			
Service temperature	Min. °C <sup>1</sup>	Max. °C <sup>2</sup>	EN 14706, EN 14707, EN 14304
	-50	110	
<b>Thermal conductivity</b>			
Declared thermal conductivity	Øm	0°C	EN ISO 13787, EN 12667, EN ISO 8497
	$\lambda d \leq [W/(m \cdot K)]$	0.033	
	Range	Sheets and tapes (AF-03MM - AF-32MM)	
	Formula	$\lambda d = [33 + 0,1 \cdot \vartheta m + 0,0008 \cdot \vartheta m^2]/1000$	
Declared thermal conductivity	Øm	0°C	EN ISO 13787, EN 12667, EN ISO 8497
	$\lambda d \leq [W/(m \cdot K)]$	0.036	
	Range	Sheets (AF-50MM)	
	Formula	$\lambda d = [36 + 0,1 \times \vartheta m + 0,0008 \cdot \vartheta m^2]/1000$	
<b>Fire Performance and Approvals</b>			
Reaction to fire	Sheets: B-s3, d0 Tapes: B-s3, d0		EN 13501-1, EN ISO 11925-2, EN 13823
Surface flammability	low-flammable - 2010 FTP-Code (MED 96/98/EC, Module D)		IMO 2010 FTP Code, Part 5 <sup>3</sup>
FM approved	4924 - Pipe and Duct Insulation		UBC26-3
<b>Passive fire protection</b>			
Fire resistance of elements of construction	EI 30 - EI 90		EN 13501-2, EN 1366-3
<b>UL standards</b>			
UL 94 5VA <sup>4</sup>	Pass (sheets $\geq 4.2$ mm)		UL 94, IEC 60695-11-10, UL 746B
UL 94 5VB <sup>4</sup>	Pass (sheets 3 mm < 4.2 mm)		UL 94, IEC 60695-11-10, UL 1191, UL 746B
<b>Fire performance</b>			
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames		
<b>Resistance to water vapour</b>			
Water vapour diffusion resistance factor	Sheets (AF-03MM to AF-32MM): $\mu \geq 10,000$ Sheets (AF-50MM): $\mu \geq 7,000$		EN 12086, EN 13469

Property	Value / Assessment	Standard / Test method
<b>Physical attributes</b>		
Dimensions and tolerances	in accordance with EN 14304, table 1	EN 822, EN 823, EN 13467
<b>Acoustic performance</b>		
Reduction of structure-borne sound transmission	≤ 28 dB (A)	EN ISO 3822-1
<b>Weather and UV resistance</b>		
UV resistance <sup>5</sup>	Protection against UV radiation is necessary (see Technical Bulletin no. 142).	
<b>Health and environment</b>		
Antimicrobial behaviour	Built-in Microban active antimicrobial protection: No fungal growth observed	EN ISO 846, VDI 6022
Environmental Product Declaration (EPD)	Type III Environmental Product Declaration (EPD): Declaration number "EPD-ARM-20200219-IBB1-EN", Institut Bauen und Umwelt e.V. (IBU)	ISO 14025, EN 15804+A2
<b>Other technical features</b>		
Shelf life	Self-adhesive tapes, self-adhesive sheets, self-adhesive tubes, strips: 1 year	
Storage	Can be stored in dry, clean rooms at normal relative humidity (50% - 70%) and ambient temperature (0 °C -35 °C).	

<sup>1</sup>For use in temperatures beyond the maximum and minimum service temperature range indicated in the technical data table, please contact our Customer Service Centre.

<sup>2</sup>+85 °C, for products with a self-adhesive layer.

<sup>3</sup>According to IMO 2010 FTP Code annex 2, clause 2.2 a fire technical test for smoke density and toxicity is not necessary.

<sup>4</sup>Only for products without self-adhesive-layer.

<sup>5</sup>If ArmaFlex is used outdoors or in applications under UV radiation, it should be protected with ArmaFinish Paint, or a covering such as ArmaClad Arma-Chek within 3 days of installation.

All data and technical information are based on results achieved under the specific conditions defined according to the testing standards referenced. Despite taking every precaution to ensure that said data and technical information are up to date, Armacell does not make any representation or warranty, express or implied, as to the accuracy, content or completeness of said data and technical information. Armacell also does not assume any liability towards any person resulting from the use of said data or technical information. Armacell reserves the right to revoke, modify or amend this document at any moment. It is the customer's responsibility to verify if the product is suitable for the intended application. The responsibility for professional and correct installation and compliance with relevant building regulations lies with the customer. This document does not constitute nor is part of a legal offer to sell or to contract.

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## ABOUT ARMACELL

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As the inventors of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency, making a difference around the world every day. With more than 3200 employees and 27 production plants in 19 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for high-tech and lightweight applications and next generation aerogel blanket technology.



For more information, please visit:  
[www.armacell.com](http://www.armacell.com)