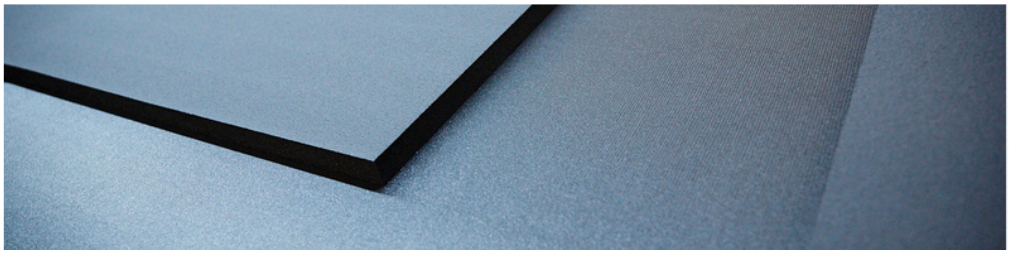
INSTALL IT. TRUST IT.

ArmaFlex
ACE Plus

The flexible insulation based on ArmaFlex technology

// Reliable condensation control
// Effective reduction of thermal losses
// Optimal range for easy application on most common pipes & duct sizes
// Increased system security when installed with ArmaFix and ArmaFlex Adhesives
// Euroclass B/B(L)-s3,d0 for the entire range



armacell®
ArmaFlex®

ArmaFlex ACE Plus

Technical Considerations

The following technical considerations should be taken into account when specifying thermal insulation products for HVAC-R, process and industrial pipe and ductwork systems:

// Energy saving

The rate of heat flow from a pipe is largely governed by the differential to the ambient temperature, and heat losses can be considerable. The insulation of mechanical services is one of the single most effective measures for improving energy efficiency and prolonging the lifespan of equipment. Optimal pipe insulation of space heating, domestic hot water or cooling systems is still a remaining potential for further reduction of energy use and of the associated greenhouse gas emissions.

// Thermal Conductivity and Condensation Control

Thermal conductivity (λ factor), stated in W/(m•K), is the property of a material's ability to conduct heat, measured across a 1m³ block. For example, a material with a high thermal conductivity such as copper has a value of 386 compared to a low thermal conductivity material such as ArmaFlex ACE Plus at 0.035 at 0 °C. Where pipework and services operate at below-ambient temperature water vapour condenses on the surface. If insulation becomes wet it loses thermal performance, leading to colder surface temperatures, condensation and corrosion issues. Closed cell ArmaFlex products provide an integral water vapour diffusion barrier with a mu value of >10,000.

// CE Marking

CE marking became a mandatory requirement for thermal insulation construction products governed by a European harmonized standard (hEN) in July 2013. The harmonized standards determine the required characteristics and obligatory properties, including fire behaviour (Euroclasses), dimensions and tolerances, thermal conductivity, dimensional stability and durability characteristics. Once a product has been tested to meet the required properties a designation code is printed on the product label to display the specific technical properties required by the hEN. The producer has to constantly keep the performance of its products at the declared level and prove with valid testing certificates e.g. B-s3,d0.

Euroclass	Contribution to fire
A1	Non Combustible
A2	Limited Combustible No Flashover
B	No Flashover
C	Flashover after 10 minutes
D	Flashover before 10 minutes
E	Flashover before 2 minutes
F	No Performance Determined

// The European reaction to fire classification

Fire safety of construction products and building elements in the EU is determined by Euro Classes according to the EN 13501-1 standard. The uniform classification system is based on the performance of products under different fire conditions: the attack of a small flame, exposure to a fully developed fire and some intermediate level. The main properties determining the Euro class for a specific product discloses if and how fast a product contributes to the fire.

// Local regulations for fire protection

The decisions regarding fire resistance classifications of the building elements used in various parts of a building are made at the local level (by country government bodies). The rules for required Euroclass reaction to the fire of products installed in different places within the building are also published locally.

TECHNICAL DATA - ARMAFLEX ACE PLUS

Brief description	Highly-flexible, closed-cell insulation material with high water vapour diffusion resistance and low thermal conductivity.
Material type	Factory-made flexible elastomeric foam (FEF), according to EN 14304.
Product colour range	Black
Applications	Insulation/protection of pipes, air ducts, vessels (including elbows, fittings, flanges, etc.) of air-conditioning, refrigeration and process equipment to prevent condensation and save energy as well as insulation of pipes in sanitary and heating applications.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: www.armacell.com/DoP

Property	Value / Assessment		Standard / Test method
Temperature range			
Service temperature	Min. °C[1]	Max. °C	EN 14706, EN 14707, EN 14304
	-50	110	
	Remarks	+85 °C if sheet or tape is glued to the object with its whole surface	
Thermal conductivity			
Declared thermal conductivity	θm	0 °C	EN ISO 13787, EN 12667, EN ISO 8497
	λd ⩽ [W/(m·K)]	0.035	
	Range	Tubes, sheets and tapes	
	Formula	[35 + 0,1· ϑm + 0,0008 · ϑm²]/1000	
Fire Performance and Approvals			
Reaction to fire	Tubes: B(L)-s3, d0 Sheets: B-s3,d0 Tape: B-s3,d0		EN 13501-1, EN 13823, EN ISO 11925-2
Fire performance			
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames		
Physical attributes			
Dimensions and tolerances	In accordance with EN 14304, table 1		EN 822, EN 823, EN 13467
Weather and UV resistance			
UV resistance[2]	Protection against UV-radiation is necessary. See TB 142		
Health and environment			
Volatile organic compounds (VOC) content	Fulfills all VOC requirements (French, Italian, Belgian, German AgBB, Blauer Engel and Eurofins Indoor Air Comfort GOLD).		ISO 16000 Parts 3, 6 & 9
Antimicrobial behaviour	antimicrobian insulation, resistance against mould and bacteria in accordance with ISO 846		
Green building assessment	Meets the sustainable construction requirements for LEED v4.1, BREEAM international and DGNB.		
Additional features	SCCP, MCCP-free		
Other technical features			
Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		
Storage	Can be stored in dry,clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).		

[1] For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

[2] If ArmaFlex is applied under UV-radiation, the material must be protected within 3 days with paint or a covering.

OUR CUSTOMERS EXPECT THE BEST. WE WORK HARD TO GO BEYOND THAT AND EXCEED THEIR EXPECTATIONS.

Our extensive product portfolio has been designed and developed to meet the specific requirements of our customers and their end-users. Discover how Armacell is making a difference around the world with our products in the following pages.

To offer our customers the best service, we hold stocks of our most popular products. **Lead times and form of delivery may vary per product and per country, and may be affected during peak season and holidays.** We aim to create open lines of communication with our customers, so please contact Customer Services who can answer questions about our service commitment to you.

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ABOUT ARMACELL

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.

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For more information, please visit:
www.armacell.com