

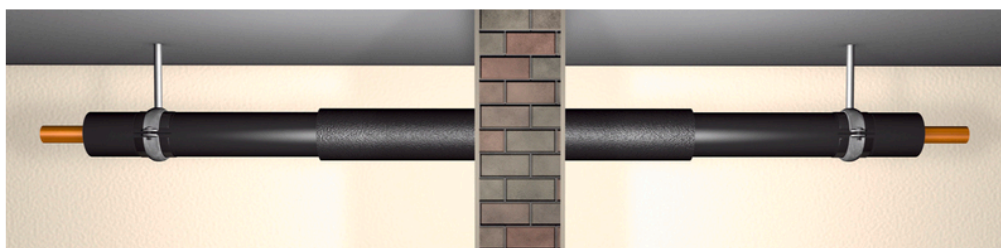


INSTALL IT. ENSURE SAFETY.

ArmaFlex Protect

Firestop tubes and sheets for fire seals
in walls, floors, steel bulkheads and
steel decks

- // Firestop and thermal insulation in one step
- // Fire resistance up to EI 120
- // Fire resistance up to A-60
- // Fire resistance up to B-15
- // For application with hot and cold pipes (from -50°C up to $+85^{\circ}\text{C}$)
- // Can be combined with ArmaFlex products as continued insulation
- // Quick and easy installation



 **armacell**[®]
ArmaFlex[®]

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The appropriate test certificates are to be consulted for information on permitted pipe materials and other necessary basic conditions. During planning and execution, not only the diagrams shown but also the basic conditions of the test certificate must be observed.



// Ideal for preventing condensation on refrigeration and cooling water systems

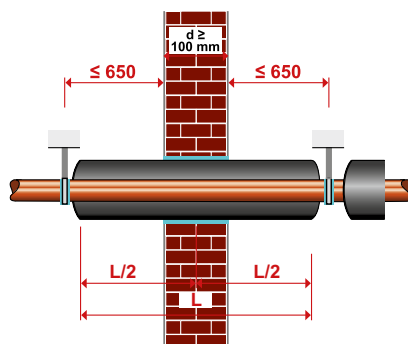
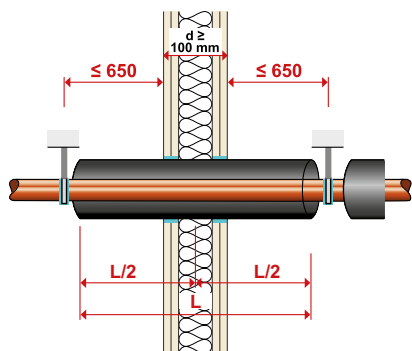
Pipe outer diameter	Line temperature / Ambient temperature			
	+6 °C / 23 °C	0 °C / 23 °C	-5 °C / 23 °C	-10 °C / 23 °C
≥ 10 mm ≤ 323,9 mm	Relative humidity ≤ 80 %	Relative humidity ≤ 75 %	Relative humidity ≤ 70 %	Relative humidity ≤ 65 %

// Pipe Materials and Zero Distance

Due to its intumescent effect in the event of a fire, ArmaFlex Protect can be used to securely seal off penetrations not only for copper, steel and stainless steel pipework but also for combustible supply pipes such as multilayer composite pipes. ArmaFlex Protect is a system component working with all ArmaFlex elastomeric insulation materials and ArmaFlex 520 Adhesives.

The greatest advantage:

Metal pipes up to an outside pipe diameter of up to 88.9 mm and plastic pipes up to an outside pipe diameter of up to 75 mm can be installed at „zero distance“ from each other.



Non-combustible material with classification A1 or A2-s1,d0 according to EN 13501-1 as e.g. mortar, cement or gypsum joint filler. Non-combustible material with classification A1 or A2-s1,d0 according to EN 13501-1 as e.g. mortar, cement or gypsum joint filler.

// Lightweight Wall

In fire-rated lightweight walls, ArmaFlex Protect is installed centrally. The annular gap is closed within the insulation level using conventional filler is used against the gypsum board. Additional strips or protective insulation are not required.

// Solid Wall

In fire-rated solid walls, ArmaFlex Protect is installed centrally. The gap is closed using ordinary mineral mortar. Additional strips are not required!

TECHNICAL DATA - ARMAFLEX PROTECT

Brief description	Flexible fire seal and insulation for metal and composite pipes through fire-resistant walls and floors (up to EI 120, A-60 and B-15).
Material type	Elastomeric foam based on synthetic rubber.
Product colour range	Black
Applications	Insulation and fire protection barrier for drinking water (hot/cold), heating and refrigeration metal pipes up to 324 mm diameter and composite pipes up to 75 mm. Detailed information on the fields of application (building elements, services, limits in size) and description of construction of the penetration seal are available in the ETA-11/0454. For information on marine applications, please consult your local Armacell contact or get in touch with our Customer Service.
Installation	For industrial applications it is recommended to consult the relevant Armacell application manual(s). Use ArmaFlex 520 adhesive for a reliable and seamless installation.
Declaration of performance	Declaration of Performance in accordance with Article 7(3) of Regulation (EU) No 305/2011 is available at www.armacell.com/DoP .

Property	Value / Assessment	Standard / Test method
Temperature range		
Service temperature	Min. °C	Max. °C
	-50	85
Thermal conductivity		
Declared thermal conductivity	Øm	0 °C
	$\lambda_d \leq [W/(m \cdot K)]$	0.056
	Formula	$\lambda_d = 0.056 + 0,0001 \cdot \vartheta_m$
Fire Performance and Approvals		
Reaction to fire	E(L) for tubes E for sheets	EN 13501-1, EN ISO 11925-2
Use category	Type Y2 - intended for use at temperatures below 0 °C, but with no exposure to rain nor UV	EOTA TR 024
Fire resistance of bulkhead and decks	B-15 bulkheads up to 89 mm A-60 bulkheads and decks up to 89 mm	IMO 2010 FTP code, Part 3 (IMO A.754(18))
Passive fire protection		
Fire resistance of elements of construction	up to EI 120	EN 13501-2, EN 1366-3
Fire performance		
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames	
Resistance to water vapour		
Water vapour diffusion resistance factor	$\mu \geq 7,000$	EN 12086, EN 13469
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
Health aspects	Please refer to latest product Safety Datasheet (SDS)	
Emission of dangerous substances	No dangerous substances.	
Additional features	SCCP, MCCP-free	
Other technical features		
Shelf life	No shelf life.	
Storage	Cartons shall be stored horizontally. Can be stored in dry, clean rooms at normal relative humidity (50 % - 70 %) and ambient temperature (0 °C - 35 °C). Minimum temperature for transport -50 °C under condition of frost-free storage before 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

As the inventor of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal 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 3,300 employees and 25 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 acoustic and lightweight applications, recycled PET products, next-generation aerogel technology and passive fire protection systems.



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