

INSTALL IT. TRUST IT.

ArmaFlex Ultima[®]

With the introduction of ArmaFlex Ultima Armacell is making a difference around the world by setting a new standard in technical insulation. In the event of a fire, the first flexible insulation material with B₁-s₁,d₀ generates 10 times less smoke than standard products. Our best-in-class solution gives occupants more time for a safe evacuation and reduces the risk of consequential fire damage. **Increasing fire safety to protect lives and assets.**

www.armacell.eu



Up to
10
times less
smoke



 **armacell**[®]
ArmaFlex[®]

EXTREMELY LOW SMOKE DENSITY

ArmaFlex Ultima



FIRE
SAFETY



ENERGY
EFFICIENCY



CONDENSATION
CONTROL



INDOOR
AIR QUALITY



LONG-TERM
SAFE OPERATION

With ArmaFlex Ultima we have set a new safety standard in technical insulation. Based on the patented ArmaPrene® technology, it is the first flexible technical insulation material in the world with fire class B_L-s1,d0.

In comparison to a standard elastomeric product, the flame-resistant insulation material develops 10 times less smoke and offers increased safety in the event of a fire.

ULTRA-LOW SMOKE PROPERTIES

As smoke is a significant risk in a fire, smoke density requirements for equipment insulation materials are becoming stricter. When assessing the fire behaviour of building products, the European fire classification not only tests the flammability, but also the smoke density and the production of burning droplets. By reducing the smoke density, ArmaFlex Ultima improves visibility and respiration, thus extending the time available to evacuate safer in the event of a fire.

RELIABLE THERMAL AND CONDENSATION CONTROL

Thanks to its good thermal conductivity and high resistance to water vapour diffusion, the closed-cell ArmaFlex Ultima ensures reliable condensation control and high energy savings in the long-term. This also minimises the risk of corrosion under insulation (CUI) and reduces the risk of costs associated with downtime, lost productivity, or even facility shutdown. ArmaFlex Ultima can be installed on mechanical equipment with service temperatures between +110 °C and -50 °C (-200 °C)*. It is FM-approved and IMO-certified.

*Please contact our Technical Customer Service for cryogenic applications



ARMAPRENE

Our patented ArmaPrene technology offers the highest fire standard in flexible insulation.

While standard elastomeric products with brominated flame retardants inhibit combustion very effectively in the event of a fire, they tend to produce a high level of smoke. Our breakthrough ArmaPrene technology resolves this conflict: due to the development of intrinsically flame-resistant polymers and by using ablative protective additives it is no longer necessary to add any brominated flame retardants.

ArmaFlex saves
140
times more energy
than is needed for
its production

SYSTEM SOLUTION FOR MAXIMUM RELIABILITY

ArmaFix Ultima pipe support thermally isolates the pipe and its fixing from each other and, together with the adjoining ArmaFlex Ultima insulation, forms a long-term reliable insulation system. For the installation of ArmaFlex Ultima, we offer a range of specially formulated adhesives, including a solvent-free product which is predestined for sustainable construction projects realised according to LEED®, BREEAM, DGNB or national green building schemes.

ArmaFlex Ultima meets the most stringent environmental requirements and saves specifiers time by being accredited in the most important green building schemes.

SUNDAHUS | NORDIC SWAN ECOLABEL
BYGGVARU BEDÖMNINGEN | MINERGIE-ECO
LEED | BREEAM | DGNB

Bromine-free | Antimony-free | PVC-free

APPROVED FOR
GREEN BUILDING

INVESTING IN LOW-IMPACT AND DURABLE PERFORMANCE PRODUCTS



ESG STANDS FOR ENVIRONMENTAL AND SOCIAL GOVERNANCE

At Armacell, we constantly innovate, improve and rethink what we are doing with a focus on sustainable, profitable growth through the development and manufacturing of products that create long-lasting value for our stakeholders. We offer high-quality products and system solutions and provide our customers with the know-how, assistance and support they need for their installation and application. The support and services we offer are making a real difference in applications around the world through time-saving help in obtaining green or wellness building certification, practical calculation tools, various training measures or a Building Information Modelling (BIM) plug-in, for example. In combination with low-impact and durable performance products that are eligible for international green building certifications, this portfolio of work-supporting services heightens customer satisfaction with Armacell products.

Throughout the world, construction is one of the most raw-material and energy-intensive industries. The building sector is the single largest consumer of raw materials worldwide and the leading producer of greenhouse gas emissions. Some 50 percent of all raw materials are used to build and maintain buildings, while 35-40 percent of greenhouse gases result from the construction, use or disposal of buildings. In the industrialised nations, a huge amount of energy is consumed in transport and manufacturing industry, but the building sector accounts for around 40 percent of Europe's energy consumption. That is why providing the right tools for the selection of the ideal insulation material for durability and energy efficiency is at the heart of our products and value proposition.

Armacell's products and solutions are fully integrated with the world's leading sustainability, green and well-being methods and standards for master planning projects, infrastructure and buildings. Through on compliance cards, we assist designers, architects, engineers, consultants and developers by providing clear information about which features of our ArmaFlex insulation products are of relevance to each certification scheme's specific categories. The respective requirements are listed in detail along with how our product achieves compliance. This saves construction companies, building owners and operators and installation firms a great deal of hassle in applying for LEED®, BREEAM®, or WELL Building Standard® certification.

As a pioneering provider of industry-leading solutions in insulation technology, we continuously invest in the products and solutions that provide sustainable value for our highly diversified global customer base. Our products and solutions are delivering the value-enhancing answers that markets are demanding. Answers that we develop in close collaboration our customers. What they need is covered by our mix of fit-for-purpose products and made-to-measure solutions. Our strategic development further addresses seven global megatrends that are shaping the world. As societal needs evolve, we become more conscious about sustainability and the impact of our exponential population increase and demands. This motivates us to be more aware of areas where we can make a difference.

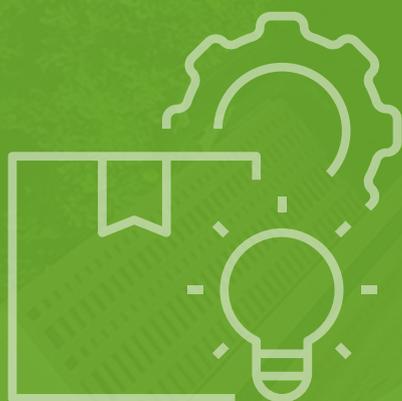
PERFORMANCE BEYOND BETTER

To further increase customer satisfaction, we always strive to go Beyond Better in providing an attractive offering – know-how, assistance and support – for users of our products and systems, as well as in responding to their needs and expectations. We recognise that our customers play an active role in our sustainability journey and strongly contribute to our ambitions

for the future.

That is why we are currently working to incorporate environmental, societal and governance elements into our annual customer survey. In order

to take sustainability aspects into account in all areas of the value chain, we interact with our customers to find out how they perceive future trends. In this way, we can match the global trends we observe with customer requirements. This enables us to verify the basis from which we continue to write the success story of our insulation products. Future reporting will provide insights into the attitudes, perceptions and expectations of our customers for the years to come.



KEY DESTINATIONS

Whether at work, at home or on board, fire safety is a matter of life and death. In the event of a fire, smoke is the most critical safety factor, as it is the greatest threat to occupants' health and is responsible for more than 50 percent of fire damage to property.

MAKE
FIRE SAFETY
YOUR TOP
PRIORITY



RESIDENTIAL & COMMERCIAL BUILDING

While developing solutions to make **buildings** more energy-efficient, safety remains paramount. Fire incidents can cause extensive property damage, impacting business continuity, causing injuries or in the worst case, fatalities.

Healthcare facilities have strict requirements to ensure patients benefit from the best medical care possible. If a fire breaks out in a hospital, the threat to life and health is much greater than in other public buildings.

Data centres are the beating heart of the digital age. They power and protect mission-critical infrastructure and sensitive data. Their high density of electrical power increases the potential fire hazard and fire safety is therefore a top priority.

// Complete low-smoke system solution for a higher safety level in buildings

// ArmaFlex Ultima meets the requirements of Green Building schemes

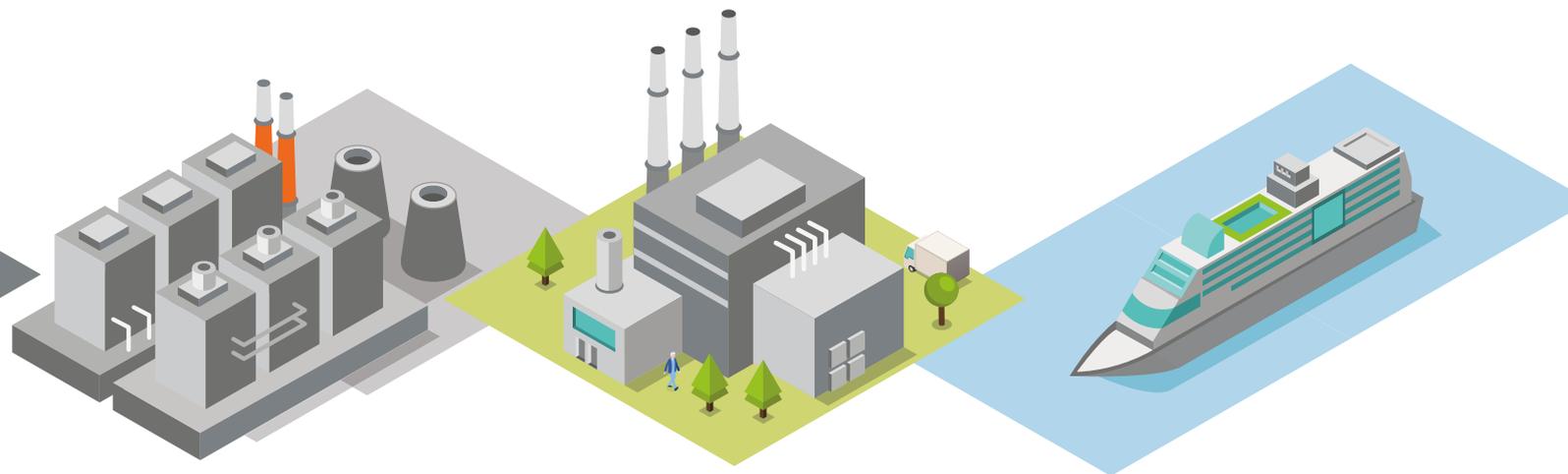
// Long-term reliable operation and high energy efficiency

// Low-smoke density can save lives if a fire breaks out

// Maintaining defined ambient conditions to safeguard uptime and system reliability

// Reliable protection against condensation, contamination and energy losses

At Armacell, we are committed to perform beyond the expected, today and tomorrow, so that you can achieve best-in-class insulation performance for your high-quality projects.



INDUSTRIAL PROCESSING & ENERGY

Whether chemical, pharmaceutical, manufacturing, food and beverage processing or electronic, ArmaFlex Ultima is the safe and reliable solution for the insulation of **process equipment**.

- // Closed-cell, fibre-free ArmaFlex Ultima mitigates the risk of particle pollution and CUI
- // Lower risk of high fire consequential costs due to low-halogen B_L-s1,d0 classified material

To be safely stored and transported in larger quantities, industrial gases like nitrogen, oxygen, hydrogen or natural gas are cooled to liquid form. **Cryogenics** requires high-performance insulation materials which can absorb high mechanical forces and offer low thermal conductivity.

- // ArmaFlex Ultima can be used down to -200 °C*
- // Does not react with liquid oxygen according to ISO 21010

*Please contact our Technical Customer Service before installation

TRANSPORTATION VESSELS

Refrigeration and air conditioning account for up to 40 percent of a cruise ship's total energy consumption. Professionally insulated equipment is the key to energy efficiency on ships and across the **marine industry**.

- // ArmaFlex Ultima can be used on cold service pipework for refrigeration systems everywhere onboard
- // It is light-weight, highly flexible and easy to install, even in extremely tight spaces

EMPOWER YOUR PROJECTS

By choosing ArmaFlex Ultima, you can increase fire safety in your project. By mitigating fire and smoke risk, our best-in-class solution improves visibility and respiration, thereby extending the time to safely evacuate a building in the event of a fire. What's more, the low-halogen material reduces the risk of consequential fire costs.

KÄLTE-FISCHER WAREHOUSE (GERMANY)



When safety, energy efficiency and a healthy indoor climate are the top priorities in construction projects, ArmaFlex Ultima is the obvious choice for equipment insulation.

At its new company headquarters in Kernen, the specialist wholesaler Fischer Kälte-Klima relies on the new safety standard in insulation technology. The centrepiece of the integrated overall solution is an NH3 heat pump with a

sophisticated hydraulic system for continuous air conditioning of the office and production buildings. The entire NH3 heat pump, including the hydraulic section, was insulated with ArmaFlex Ultima by Fischer's Systems Engineering division.

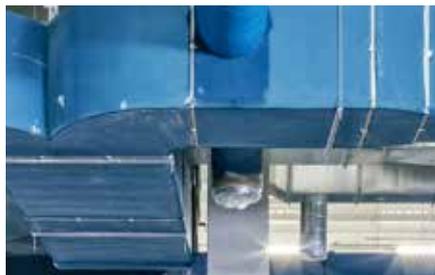
TERGOOI HOSPITAL (THE NETHERLANDS)



The new Tergooi Medical Center in Hilversum is equipped with state-of-the-art technology that gives the highest priority to sustainability and patient comfort and safety.

Since smoke poses a much greater threat than the fire itself, Royal Haskoning DHV (Amersfoort) specified ArmaFlex Ultima for the insulation of mechanical equipment. The insulation material was installed

by Riweltie Isolatie en Brandpreventie (Utrecht). To ensure thermal decoupling and maximum safety, the pipes were mounted with ArmaFix Ultima pipehangers.



ArmaFlex Ultima installation in Fresenius Kabi's penicillin production plant in Portugal

SAFE, RELIABLE AND ENERGY EFFICIENT

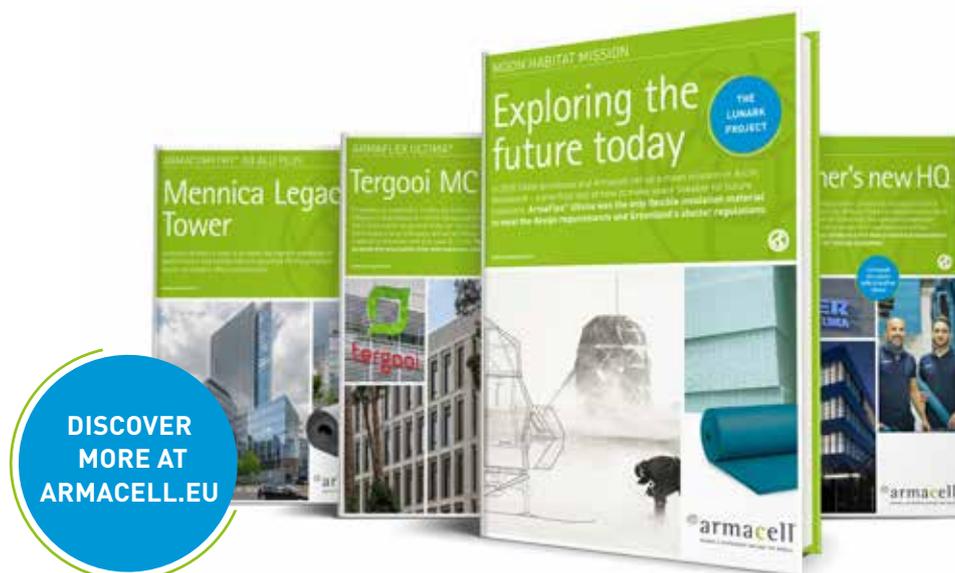


A typical HVAC system accounts for 40 percent of the total energy consumption in commercial buildings. That makes equipment insulation one of the most efficient ways of saving energy and reducing CO₂ emissions.

While accounting for an average of just 1 percent of the total costs of the technical equipment, insulation materials ensure higher performance, a longer service life and higher efficiency.

CLIENTS AROUND THE WORLD RELY ON OUR SUPERIOR SOLUTIONS

- // **Estonia**
Harku Server Center, Tallinn
- // **Finland**
Research and teaching centre of the Department of Biology at the University of Oulu
- // **France**
Laboratoire Servier, Saclay
- // **Germany**
Mercedes Benz Commercial Vehicle Centre, Bremen
- // **Portugal**
Labesfal - Fresenius Kabi, Santiago de Besteiros
- // **Sweden**
Skandion Clinic, Uppsala
Kineum, Gothenburg
- // **Switzerland**
Osterwalder Tower, Zurich



SAGA ARCHITECTS AND ARMACELL

THE
LUNARK
PROJECT

WHAT DOES IT TAKE TO LIVE ON THE MOON?

Nearly half a century after a human being was last on the Moon, space travel is again on the agenda. "If humans are to settle on the Moon and other planets, we must be very careful how we design the homes for these pioneers.

In space, your habitat is your entire world," says SAGA, a Danish design studio that wants to make space liveable for future travellers.

As the Moon is not available for habitation experiments just yet, Arctic Greenland was chosen as the next-best alternative. This bare, unforgiving environment is not dissimilar to the Moon.



SCAN OR
CLICK
TO WATCH



AND WHO DID THEY TURN TO
FOR HELP WITH INSULATION?

ARMACELL
OF COURSE.



The LUNARK Habitat origami lightweight structure was made of **ArmaPET®**. Two layers of **ArmaFlex Ultima**, protected by **ArmaFinish**, were installed to insulate the internal walls. With its excellent fire performance and low smoke density, ArmaFlex Ultima was the only flexible insulation material to meet SAGA's design requirements and Greenland's shelter regulations.

“ArmaFlex Ultima insulation kept us safe and warm at outdoor temperatures as low as -50 °C.”

The two-person crew, Sebastian Aristotelis and Karl-Johan Sørensen, tested the viability of the habitat from September to November 2020.



A large, white, cylindrical habitat structure with a complex, porous, cellular facade. The structure is shown in a cutaway view on the left, revealing a multi-level interior with a staircase, a desk, and a person sitting. On the right, the full exterior of the structure is shown in a grassy field with trees in the background. Three people are visible: one sitting on the ground, one standing, and one walking. A blue circular callout with a white border contains the text 'ArmaFlex Ultima shoots for the Moon'.

ArmaFlex
Ultima
shoots for
the Moon

NEW MOON HABITAT: ROSIE

“Lunark has been an incredible experience, both for us and for the SAGA team. It was the first joint project, and we will now develop a more complex lunar habitat. Of course, ArmaFlex Ultima will be back on board again. Rosie will be installed in Switzerland and tested over a period of ten years with small crews of students.”

Sebastian Aristotelis
Co-Founder, SAGA Space Architects

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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 3,200 employees and 26 production plants in 18 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.

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For product information, please visit:
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