

RELIABILITY IN DATA CENTRES

Insulation solutions

Data centres are changing, becoming more versatile and more powerful. The growing demand for data centres with more processing power requires improved cooling strategies with better energy efficiency. Armacell's insulation products can take the pressure off cooling systems in this fast-paced industry. **Keep systems cool today – enjoy faster processing speeds tomorrow.**

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 **armacell**[®]
MAKING A DIFFERENCE AROUND THE WORLD

RELIABLE INSULATION FOR DATA CENTRES

Servers housed in data centres generate vast amounts of heat and **as much as 40% of the total operational costs can be attributed to the energy expenditure for cooling systems.** Insulating cooling equipment and distribution systems can help to optimise energy consumption and prevent condensation.

As electrical equipment in data centres generates vast amounts of heat, round-the-clock cooling is required to ensure optimum operating temperature ranges. Independent of the design, three important factors need to be considered when choosing the right insulation material for the cooling system.

- 1

Efficient thermal insulation

The goal of insulation is to prevent heat loss or heat gain. The selected material must be efficient in minimising energy losses from piping while refrigerant or cooling liquid is being piped to its destination.
- 2

Effective condensation control

Insulation can help to prevent condensation on pipework carrying cooling liquid or refrigerant. Dripping condensed water can lead to serious issues, especially with electrical equipment located close by. The installed insulation material should not be prone to absorbing any condensation because for every 1% of moisture gained in cellular plastic insulation material, there is an estimated loss of 3% to 5% in thermal efficiency.
- 3

Dust- and fibre-free material

Customers expect the highest quality of air cleanliness, as contaminants in a data centre can lead to components overheating, and electrical or mechanical failure of components, power supplies and circuit boards. A dust- and fibre-free insulation material is recommended in such cleanroom and mission-critical environments.



SAVE
ENERGY.
NO FIBRE
LEAKAGE.

CONDENSATION CONTROL

Wherever energy is transmitted, part of this valuable resource will be lost if the equipment is not, or poorly, insulated. Our dedicated range of ArmaFlex® products offers enormous energy-saving potential. Armacell's in-house quality control programmes ensure that the insulation material has a fine, closed-cell structure to provide consistent low thermal conductivity and high resistance to water vapour transmission. This means that equipment installed with ArmaFlex enjoys reliable and long-term protection against energy loss and condensation. Unlike conventional insulation materials that have to be protected against moisture penetration with a separate vapour barrier, ArmaFlex has a built-in water vapour barrier to offer reliable resistance to water vapour transmission throughout its entire insulation thickness.



Fast installation in tight spaces
Material flexibility is a key advantage in tight-fitting conditions.

NEAT AND SIMPLE INSTALLATION

No other insulation material can be installed as reliably, neatly, simply and as fast as ArmaFlex. ArmaFlex can be quickly and easily cut on-site to match the pipe runs and contours. Application times can be further reduced by using self-adhesive sheets. We also offer a complete range of accessories, such as adhesives and cleaners that have been developed especially for our products and tested as a system.



Fire test to determine heat release and smoke generation of pipe insulation.

EXCELLENT FIRE PERFORMANCE

Leading international bodies have certified that ArmaFlex offers an excellent fire safety performance in line with stringent fire safety test standards. It is a self-extinguishing insulation material that does not drip or spread fire. NH/ArmaFlex is a halogen-free insulation material highly recommended for data centres. In the event of a fire, it does not release corrosive gases that could form aggressive acids in combination with rescue water. Depending on the area of installation, other ArmaFlex products could also be considered. ArmaFlex Class 0 is FM Approved and classified as Class 0 according to British Standards BS 476 Parts 6 and 7. The product also complies with the safety, reliability and performance standards of various local fire safety bodies, such as the Fire Services Department of Hong Kong and the Fire Safety and Shelter Department of Singapore. ArmaFlex Ultima is a low flammability insulation material that generates ten times less smoke than standard flexible elastomeric foam insulation during a fire.



AT YOUR SERVICE

At Armacell, we are committed to creating an exceptional customer experience. We understand today’s data centre challenges and share know-how based on our extensive experience to help you implement your project successfully.

ARMAFLEX APPLICATION TRAINING

To ensure that our insulation materials are installed correctly, Armacell has trained thousands of installers around the world. Training centres have been set up across multiple locations and we also provide valuable support on site. Several thousand insulators attend courses on installing Armacell products every year and are awarded our ArmaFlex application certificate.



ARMAWIN – PROFESSIONAL INSULATION CALCULATIONS

With our powerful ArmaWin software, you can carry out all common technical calculations in HVAC applications. You can easily determine the minimum insulation thickness required for condensation control, as well as surface temperature, heat flow, temperature changes in flowing and stationary media, freezing times for water pipes and the most economical insulation thickness.

EPDS FOR SUSTAINABLE BUILDING ASSESSMENT

Armacell is the first manufacturer of flexible technical insulation materials to present third-party verified environmental product declarations (EPDs). They are based on an independent lifecycle assessment (LCA) and are the key to designing green buildings in accordance with green-building schemes, such as LEED®, BREEAM®, DGNB, HQM and others.

BIM PLUG-IN FOR PLANNING TECHNICAL INSULATION

Business Information Modelling (BIM) allows a building to be digitally planned, built and operated from design to commissioning, maintenance, demolition and disposal. Armacell’s BIM plug-in is seamlessly integrated into the AutoDesk® Revit® programme and provides product information. The software accesses the data required directly in the model and supports the user in choosing and configuring products.

DATA CENTRES AROUND THE WORLD RELY ON OUR PROVEN SOLUTIONS

A few of our successful projects:

- Amazon India Pvt. Ltd. - Bangalore, India
- Ashburn Nexus Data Centre - Virginia, USA
- BNP Paribas - Bangalore, India
- China Mobile - Guangdong, China
- China Securities and Futures Industry South Information Technology Center - Guangdong, China
- Claro Telecom - Minas Gerais, Brazil
- Digital Reality Data Centre - Virginia, USA
- Equinix Data Center - Texas, USA
- Facebook - Virginia, USA
- Facebook Data Center - Utah, USA
- Google - Oklahoma, USA
- Huawei - Guangdong, China
- Intel India Pvt. Ltd. - Bangalore, India
- Intel Ronler Acres Campus DX1 - Oregon, USA
- LinkedIn - Dublin, Ireland
- Microsoft Data Centre - Illinois, USA
- Nirlon Knowledge Park - Mumbai, India
- NTT-NetMagic DC7 - Mumbai, India
- Oracle India Private Limited - Bangalore, India
- Prestige Technostar - Bangalore, India
- STT Global Data Centres India Private Limited. - Pune, India
- Switch Data Center Campus - Georgia, USA



SMART SOLUTIONS FOR YOUR BUSINESS

Enjoy the benefits of our excellent customer service

All over the world, our customers know they can rely on our sales representatives, technical consultants and applications engineers.

Your project demands more. You deserve the best solution. Get the original closed-cell thermal and acoustic solutions from Armacell.



All data and technical information are based on results achieved under the specific conditions defined according to the testing standards referenced. 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. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct at the time of publication. By ordering/receiving product you accept the **Armacell General Terms and Conditions of Sale** applicable in the region. Please request a copy if you have not received these.

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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 3,135 employees and 24 production plants in 16 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:
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