CASE STUDY

Medical Center and Durapods

Utilizing clever prefabricated bathroom pods for large construction projects is an innovative trend in the industry. These quick-to-install units include all framework, plumbing, fixtures, electrical and surface materials which make design and installation simple for facilities that need hundreds of bathrooms. Armacell's durable, fiber-free, formaldehyde-free, and low VOC thermal insulation is a novel addition to the pods that provide energy efficiency, condensation prevention, indoor air quality preservation, and fast install times. **Armacell in action.**

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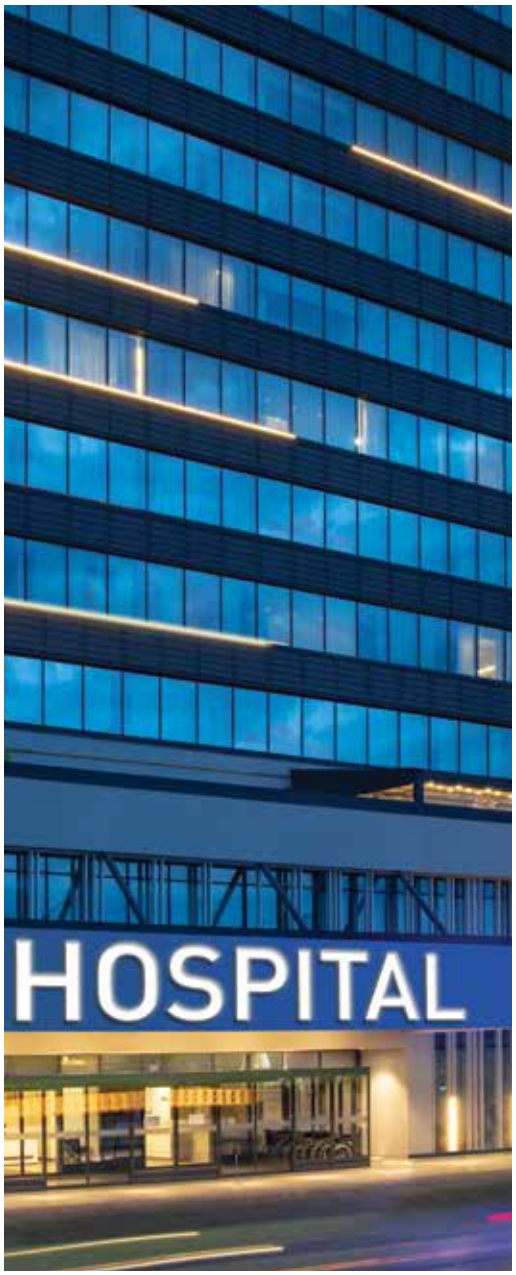

armacell®

MAKING A DIFFERENCE AROUND THE WORLD

Learning the Benefits of Elastomeric Insulation on Pipes

Fiberglass Fails at Medical Center

Project:
University Wexner Medical Center

Location:
Columbus, OH

Contractor:
Durapods (PDM Constructors)

Challenge:
Specialty contractor and modular manufacturer, Durapods, needed a more durable insulation solution for plumbing pipes on their bathroom pods that was fiber free, energy efficient, easy to install, and tear resistant.

Solution:
Discontinue use of fiberglass insulation and install ArmaFlex® elastomeric insulation on pipes in bathroom pods. Installers were successful and now all pods are specified to insulate pipes with ArmaFlex instead of fiberglass insulation.

NOT YOUR BASIC BATHROOM

PDM Constructors, a leader in traditional and prefabricated construction solutions, created a turnkey solution for large scale construction projects called Durapods. Durapods offers superior quality modular bathroom pods that combine design and construction innovation providing customers a practical cost advantage and lasting value. Commercial construction projects can also be given the flexibility and time savings to meet fast moving deadlines without sacrificing materials or value when using Durapods.

A STUDY OF PROPERLY INSULATING PLUMBING SYSTEMS

When a University in Ohio embarked on building a new medical center inpatient hospital they needed hundreds of bathrooms installed quickly, and Durapods was the perfect solution. The 1.9 million-square-foot is the largest facilities project for this University. The hospital has 820 beds in private rooms and Durapods is manufacturing over 750 bathroom pods for this project. Utilizing pre-manufactured bathroom pods is a green, efficient solution that will reduce material waste, save money, and improve the progression of the University's construction. A win-win for the health center.

PDM's diverse expertise and rapid prototyping capabilities allow Durapods to create complete bathroom systems by building offsite in a facility where materials are assembled in phases. Material selection and ease of installation is a deciding factor for all parts of the pod from studs to sinks.

Did You Know?

ArmaFlex insulation is known to be durable and tear resistant with **over 50 years of life expectancy**.

Durapods installers were previously insulating the cold water pipes with fiberglass insulation, but issues during install, transportation, and delivery were creating costly repairs, call backs, and wasted time. Installers noted that the fiberglass pipe insulation was not performing due to lack of durability, vapor barrier tears, and messy repairs. The biggest issue was lack of durability of the fiberglass insulation during the transportation of the pods to the job site. Moving the pod into place or even accidental bumps into the vapor retarder would create messy tears and more work for installers who had to repair the insulation with fiberglass tape. Customers also did not like how poor the vapor retarder repair looked after and Durapods knew that there had to be a better solution to insulate pipes. Their team began reviewing material options and even though ArmaFlex® elastomeric insulation was a premium product and more costly, the benefits of being easier to install, better durability, improved quality, reduction in call backs, and superior service level, made it the ideal choice. Dan Cohen, Foreman and Lead Insulator remarked, "Now that we have made this change to ArmaFlex pipe insulation, we know it was the best option. ArmaFlex is very durable and a nicer looking product than fiberglass insulation. It has all the things we need from an insulation solution and Armacell's service level is top notch." For a project delivering 15 pods per week, it is easy to see how flexible, durable, fiber-free elastomeric foam insulation that resists punctures would benefit any modular construction systems. ArmaFlex is meant to last the lifetime of the mechanical system, from application install to system end.

COMPREHENSIVE ENERGY EFFICIENCY AND CONDENSATION CONTROL

In a typical building, heating, cooling, and lighting account for nearly 70% of all energy use. This is an area to easily make improvements in by properly insulating cold-water pipes to avoid inefficiencies and unnecessary plumbing maintenance. Cold-water systems are likely to develop condensation problems if not properly insulated with the highest quality materials. Controlling condensation is critical because moisture can compromise a mechanical system and its insulation, leading to thermal loss and costly repairs. Even worse if this moisture goes unnoticed, corrosion under insulation (CUI) can occur. A durable closed-cell foam insulation product has the structure to prevent moisture from wicking and does not require a separate moisture-vapor retarder like fiberglass insulation. Armacell's AP ArmaFlex solutions are also made with exclusive Microban® antimicrobial protection to resist mold and mildew growth.

INDOOR AIR QUALITY AND FIRE / SMOKE PROTECTION

While insulation's primary purpose is thermal efficiency, the wrong product could particulate fibers or off-gas volatile organic compounds (VOCs) into the indoor air, creating poor breathing conditions for hospital occupants. Pipe insulation needs to resist moisture and remain mold-, dust- and fiber-free. Other insulation materials, like fiberglass can absorb moisture, supporting the allergen, mold, and mildew growth. Any of these problems will significantly degrade the environment so choosing a fiber-free insulation solution that is Greenguard® Gold Certified, has low VOCs, no off-gassing, and is non-particulating will protect IAQ. Armacell continuously works to improve testing standards and our products to meet strict building codes, and state

codes and regulations, as well as the requirements from organizations like the International Energy Conservation Code (IECC) and ASHRAE, which develop model building codes and performance standards. For school or medical applications requiring flame and smoke ratings, many of our solutions are plenum-rated and meet ASTM E 84 at 25/50 up to and including 2" thicknesses. ArmaFlex Ultra® is the first elastomeric insulation Classified by UL to UL 723 at flame/smoke rating of less than 25/50. While our products meet many compliance standards it is important to note that building codes can vary from state to state and municipality, so specifiers and installers should be sure to select products that are compliant in their region.

ARMACELL HAS ANSWERS

Bringing more than half a century of science, expertise, and innovation to foam technology, Armacell has the expertise to create specialized solutions to meet the strict requirements of the hospitals and schools. Our advanced insulation product portfolio includes a variety of building solutions to support HVAC applications, cold lines and chilled water lines, mechanical systems, chillers, boilers, UV, and high temperature areas, and also includes accessories like pipe hangers, adhesives, and tape. Armacell's Solutions Packages offer a wide range of products tailored to code-compliance, performance, and budget.

Did You Know?

Reports of recent modular construction projects show that project schedules, when compared to traditional construction, are reduced by as much as 50%.

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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 3,100 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.

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For more information, please visit:
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