

## CASE STUDY

# Protecting and Insulating Military Housing Systems

U.S. military bases provide not only training, but also housing, community care, and support for troops and their families. This inclusive armed services group and their families depend on these facilities and buildings to be safe and operable at all times. New construction projects and related mechanical systems need special attention and innovative product solutions that support efficiency, instead of dated specifications or materials. Contractors at Heckman, Inc., servicing Joint Base Lewis-McChord understood this philosophy and created a successful partnership with Armacell. **Armacell in action.**

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MAKING A DIFFERENCE AROUND THE WORLD

# Supporting the U.S. Military— One Insulated Pipe at a Time

New Barracks Need New Insulation

**PROJECT:**

Insulate HVAC, chilled water, and domestic cold water piping systems in a new three-story, 150 person UEPH Barracks to save energy, avoid condensation, and provide protection.

**LOCATION:**

Pierce County, Washington

**MECHANICAL CONTRACTOR:**

Heckman, Inc.

**CHALLENGE:**

Effectively insulate HVAC pipes and chilled systems utilizing insulation during renovations or new construction projects.

**SOLUTION:**

Install AP/ArmaFlex® Black LapSeal™ on HVAC piping and cold water piping.

**TRUSTED  
INSULATION,  
TRUSTED  
SUPPORT**

At almost 650 square miles, the Joint Base Lewis-McChord (JBLM) military installation is a huge state-of-the-art training, mobilization, and deployment operation for Army, Navy, Air Force, and Marines in Washington state. JBLM is the fourth largest military base by population and largest by area in the United States. The base is home to both Army and Air Force members, housing a total active population of nearly 210,000 inhabitants. Because of the size and complexity, JBLM is constantly growing and installing new buildings. A recent project at JBLM was the design and construction of a new three-story 150-person Unaccompanied Enlisted Personnel Housing (UEPH) barracks. UEPH buildings are prioritized facilities due to the importance of soldier wellbeing and combat readiness. UEPH facilities are intended to be similar both functionally and technically to apartment style housing in the private sector. The Standard Design provides ~90% of the population with four-bedroom, two bathroom units, which includes a kitchen, living area, and laundry. The building also

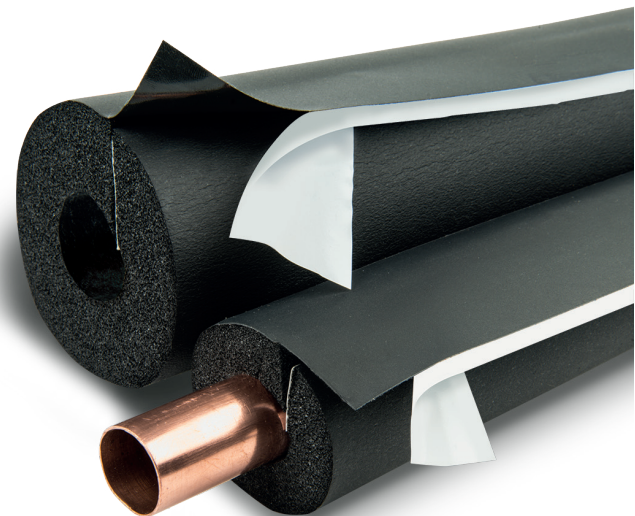


provides ~10% of the population with two-bedroom, one bathroom units. Primary facilities include fire protection, alarm systems, Energy Monitoring Control Systems (EMCS) connection, cybersecurity, and heating and air conditioning that are provided by a self-contained system utilizing the bases available energy utilities.

Heckman, Inc. the mechanical insulation contractor that was awarded this job and ongoing JBLM projects, started

**DID YOU KNOW?**

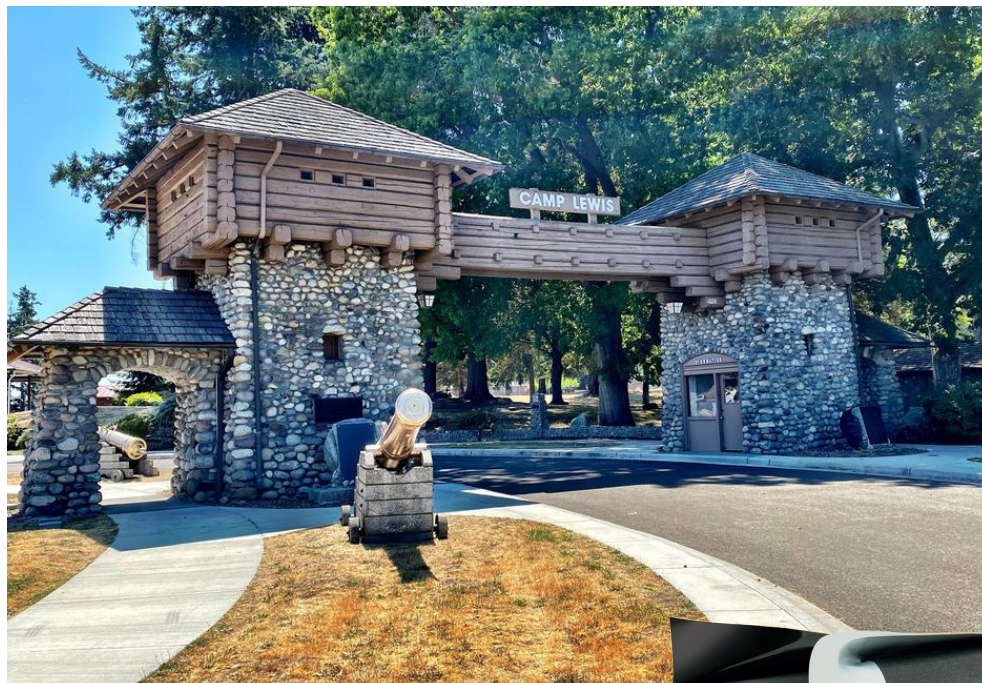
JBLM is so large that its facilities and recreation parks rival that of many small towns! To serve families, it boasts several baseball and soccer fields, a skate park, playgrounds, a splash park, dog parks, and even its own football stadium!



in 1942. This mechanical insulation company is family owned and managed by Jeff Heckman, a third-generation pipe insulator. Heckman is an insulation expert and is passionate about proper installation and value engineering. Prior to specifying Armacell's insulation and accessory solutions for their projects, Heckman, Inc. contractors used a competitor's fiberglass insulation and pipe supports during installations for cost savings. However, quality was a concern for some applications. Military design standards, procurement policies, and sustainable design requirements do not approve the use of fiberglass insulation on mechanical system applications. Understanding this requirement, Heckman, Inc. contractors selected their preferred elastomeric insulation, AP/ArmaFlex® Black LapSeal. The pipe size ranged from 5/8 inch to 4 IPS to insulate the HVAC chilled piping and domestic cold water lines. Installers choosing ArmaFlex Black LapSeal feel that Armacell's product is superior to competitors and like the adhesive on the flap for simple and clean application. Jeff Heckman stated, "It is a quality product that is easy to install, and we receive great customer service from the sales team at Armacell. We can always reach the Armacell team when we have questions or need support." Armacell has answers and support for installation contractors, now and in the future.

### **SPECIFYING FOR VALUE AND EASY INSTALLATION**

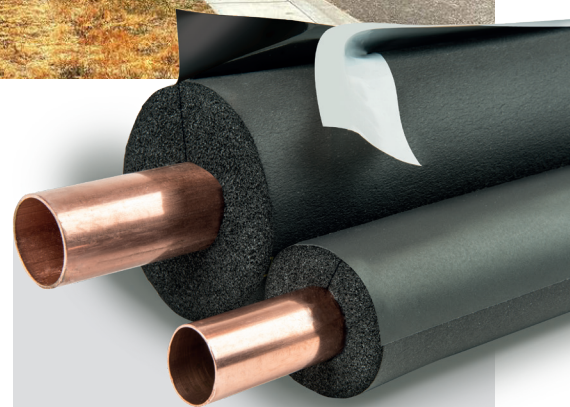
Specifying Armacell's solutions for military applications is the ideal choice when insulating piping systems, and it is especially valuable where condensation might otherwise be absorbed by fibrous types of insulation. Moisture significantly degrades thermal performance, and ultimately shortens system lifecycles. The ASHRAE Handbook specifically recommends closed-cell insulation for chilled system applications. These include cellular glass, flexible elastomeric, polyisocyanurate, and polystyrene. While these insulation products share a few characteristics, flexible elastomeric insulation is the best solution due to its low permeability rating, built-in vapor retarder, thermal integrity, resistance to punctures, and ease of installation. It is especially valuable on below ambient piping where



condensation might form increasing the likelihood of mold growing in the insulation, which is especially concerning in a living space.

Durable, easy-to-install AP/ArmaFlex Black LapSeal is a flexible closed-cell insulation product that will not wick moisture and needs no additional water vapor retarder. When a system stays dry, the chance of mold developing is drastically reduced. And for further peace of mind, AP/ArmaFlex Black LapSeal is non-particulating, 100% fiber free, and made with Microban® antimicrobial technology to prevent the growth of mold or mildew in the insulation.

The elastomeric foam also resists punctures and won't crack or flake over time. The improved lap seal provides greater seam security and increased protection against condensation, mold, and energy loss. Other features include a lap seal closure system with a wider release tab on the lap tape which can be easily removed for installation. For added security, the low-profile lap seal ensures the longitudinal seam stays closed and looks neat. It's the ideal solution for speeding up install times or making hard-to-reach installation areas easier to accommodate. When installed and maintained properly, AP/ArmaFlex Black LapSeal should last the life of the mechanical system. ■



### **AP/ARMAFLEX BLACK LAPSEAL INSULATION BENEFITS**

- Closed-cell prevents moisture wicking and eliminates need for additional vapor retarder
- Low water absorption and low water vapor transmission
- Protection of Indoor Air Quality: Low VOC, fiber-free, non-particulating, formaldehyde-free
- GREENGUARD Gold Certified
- Microban® antimicrobial product protection inhibits the growth of mold and mildew in the insulation
- Flame and Smoke Developed Index per ASTM E 84 25/50 rated up to 2" wall
- Available in tubes, sheets, rolls, and accessories

<sup>1</sup> <https://www.jblmdesignstandards.army.mil/23-07-00-thermal-insulation-for-mechanical-systems/>

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## ABOUT ARMACELL

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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:  
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