



THE MAKERS OF
Armaflex®

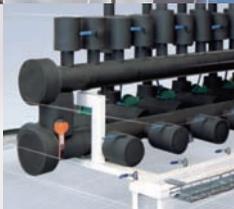


*You Can Create
Cleaner Schools.*



Armaflex Mold-Resistant and
Fiber-Free Insulation:

The IAQ Insulation™
for School Air Duct and
Chilled Water Systems



Your best mold-fighting and IAQ-defending insulation.

Every AP Armaflex product for air ducts and mechanical systems utilizes



advanced Microban antimicrobial technology. More than ever, AP Armaflex closed-cell elastomeric foam fights condensation, mold and mildew in ways that other insulations don't.

It's an AP Armaflex Exclusive, at No Added Cost!



Microban protection is proven to prevent the uncontrolled growth of damaging mold and mildew on the insulation. It is approved by the Environmental Protection Agency for use in HVAC systems.

Microban technology is built-in during the manufacturing process. And it keeps working, fighting microbes long-term:

- Lasts for the lifetime of the AP Armaflex insulation – which can be a long time due to the exceptional durability of its closed-cell structure
- Won't wash off
- Won't wear away
- Keeps working, 24/7

In addition, AP Armaflex already meets or exceeds requirements of key test procedures for resistance to mold, fungi and bacteria:

- UL 181 (Mold Growth)
- ASTM G21/C 1338 (Fungi Resistance)
- ASTM G 22 (Bacteria Resistance)

Armaflex: The IAQ Insulation™

AP Armaflex products are also designed to minimize any negative impact the insulation might have on indoor air quality (IAQ).

- Closed-cell structure prevents condensation and the wicking associated with fiberglass
- Fiber-free
- Formaldehyde-free and extremely low VOCs
- Dust-free and non-particulating
- Smooth surface is easy to clean, won't trap dirt

Why Is Closed Cell Better for Schools?

Schools and colleges simply can't afford inefficiency, questionable IAQ, or recurring maintenance issues. It's not in the budget. That's why the best choice for insulation is the one that lasts the longest, provides the best long term efficiency, and poses no threat to the indoor air environment.

AP Armaflex is the most reliable and most durable insulation a school can choose. The reasons are as fundamental as the A,B,Cs.

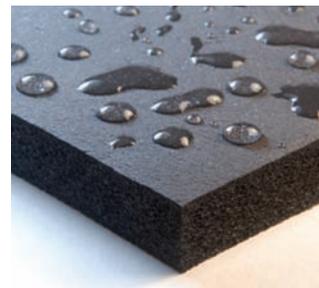
Advanced Moisture Control

Cold water and air handling systems are prone to moisture problems. Both systems are likely to develop condensation problems if insulation is not sized or installed perfectly.

With its closed-cell structure, Armaflex elastomeric foam insulation provides the best protection available against moisture in HVAC systems.

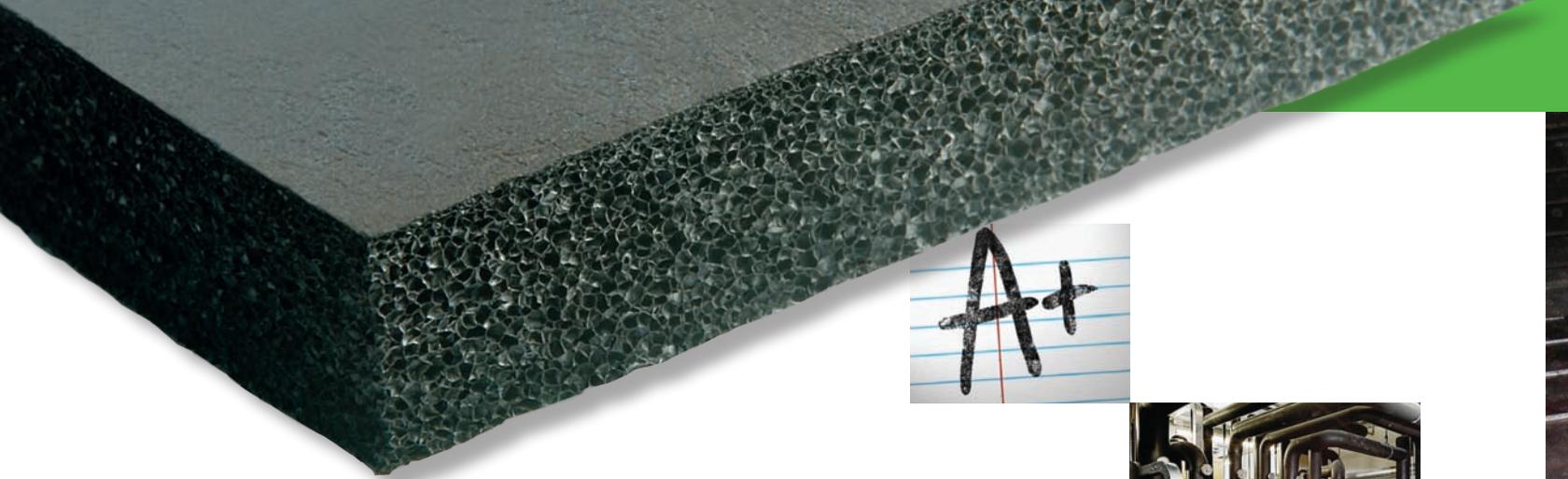
Here's why:

- **Closed-cell structure prevents moisture from wicking.** If moisture intrudes open-cell fibrous insulation, it will wick throughout the material, expanding the area for potential mold growth. The closed-cell structure of AP Armaflex, however, prevents the transference of moisture.
- **No Separate Vapor Retarder Required.** Open-cell fibrous insulations require a separate vapor retarder to prevent the intrusion of moisture. If this material is punctured, torn, or even improperly installed, moisture can invade the interior of the insulation.
- **AP Armaflex's vapor retarder is built-in.** With its closed-cell structure, it can't be compromised by surface punctures or tears.



AP Armaflex Duct Liner closed-cell structure keeps moisture out.





Better Long-term Thermal Efficiency

Moisture compromises efficiency! For every 1% moisture gain in the insulating material, there is a 7.5% loss in thermal efficiency. That's why AP Armaflex's closed-cell structure is so valuable to the efficiency of a cold system. It blocks moisture, therefore it maintains its thermal integrity.

When the vapor jacket of open-cell insulation is damaged, the insulation can reach saturation relatively quickly due to wicking, resulting in very high thermal k values. This equates to a loss in costly cooling BTU's.

Comprehensive IAQ Protection

Non-particulating for a fiber-free environment –

This is especially important in ductwork, where fibrous material can get caught up in the air stream, exposing building occupants to air borne particulates. Not only is AP Armaflex non-particulating – meaning its structure will not break apart and become airborne, it is completely fiber-free.

Easy to clean – Dust and dirt in an HVAC air duct can turn into more serious problems if left unattended. Unfortunately, most schools and colleges do not have the maintenance staff necessary to keep their HVAC systems clean – therefore the best choice is an insulation that won't trap dust and dirt. AP Armaflex has a smooth, non-porous surface that resists dirt and dust, and is also easy to clean.

Non-cellulous materials prevent fungal growth – Literally any organic material – including the cellulose used in some insulations – can provide a food source for mold. Elastomeric foam is not a suitable nutrient for mold, therefore does not support its growth.

Formaldehyde free – AP Armaflex is and always has been formaldehyde-free.

Low VOCs – With AP Armaflex there is no off-gassing, which means faster building occupancy – important for any educational facility which has strict schedules.



Armaflex is also the world's leading IAQ insulation for chilled water systems.



AP Armaflex

World's Most Specified closed cell elastomeric foam is the smartest, most responsible selection for school HVAC systems.

“Porous materials such as internal fibrous glass liner have been identified as a major source of fungal contamination.”

ASHRAE Journal, April 2004



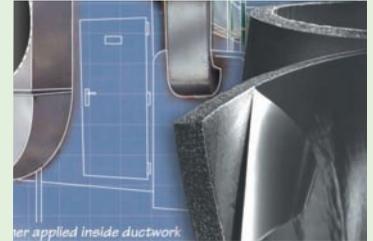
“We clean fiberglass lined ducts every day. Whenever we find any broken apart, which is pretty common, we always recommend Armaflex.”

Jim Choquette
Senior Project Manager
Duct and Vent Cleaning of America

Trusted products, now even better!

AP Armaflex Duct Liners – Black and Gray

- Liners for pinning or non-pinning applications prevent moisture
- Mold resistant with Microban antimicrobial protection, EPA-approved for use in HVAC insulation
- Plenum rated: Meets NFPA 90A and 90B for air plenums



AP Armaflex Sheets and Rolls – Regular and Self-Adhering

- The #1 choice for mechanical systems
- Added protection to prevent mold while you block condensation and heat gain or loss
- Mold resistant insulation for larger surfaces like tanks, vessels and large fittings



AP Armaflex Tubes – Regular and Self-Seal

- The #1 choice for chilled water systems
- Added protection to prevent mold while you block condensation and heat gain or loss
- Wet pipe insulation and wet pipes can be a major source of mold behind walls and in overhead plenums



Some Questions and Answers About Microban Protection

Q: What is Microban antimicrobial product protection?

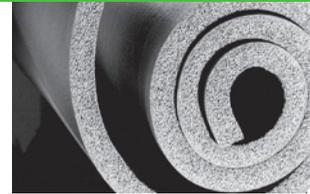
A: Microban technology is built-in antimicrobial protection for solid products, coatings and fibers. It gives AP Armaflex products an added level of protection against damaging mold and mildew.

Q: Where else is Microban used?

A: Microban technology has undergone extensive laboratory testing and has been registered and reregistered with the EPA for all applications in which it is used. Microban additives can be found in the products of leading consumer, industrial and building products manufacturers around the world: DuPont (in their residential air filters and water filters), Holmes air purifiers, American Standard, Lucite, Lennox (a/c drain pans), DAP, Armstrong Air (a/c drip pans) – plus nearly 20 different spa manufacturers, makers of bedding, shopping cart handle covers, flooring, food storage containers, even Johnson&Johnson toothbrushes... plus many more applications worldwide.



Schools Choose AP Armaflex For Replacement Insulation



An increasing number of schools and universities seeking better IAQ have decided to replace existing open-cell insulation with elastomeric foam, not only for its mold-resistant properties, but also its fiber-free, non-particulating construction.

Waterbury Schools Replace Damaged Open-cell Duct Insulation with Closed-cell Elastomeric Foam

When duct cleaners discovered wet, moldy, and/or heavily damaged fibrous insulation in several schools in Waterbury, CT, closed-cell AP Armaflex



Duct Liner was selected as its replacement.

Moisture and mold was found in nine air handling units in two Waterbury schools, Crosby High School and Wallace Middle School. The mold was concentrated in the return air plenum space located directly below the cooling coils and drip pans.

Waterbury schools used AP Armaflex closed-cell elastomeric duct liner to replace the open-cell liner in the air handling units. The

Waterbury schools replaced this badly damaged fiber-lined ductwork with Armaflex Duct Liner. An added benefit of Armaflex is that it can be installed without the use of gloves, masks or other special equipment.

decision was based on the strong recommendation of Jim Choquette, Senior Project Manager of Duct and Vent Cleaning of America, Inc.

Fiber-Free Insulation and IAQ are high priorities for Pennsylvania High School

Longevity of products and equipment is always a concern for schools undergoing renovation. In the case of Cumberland Valley High School in Mechanicsburg, PA, that concern was heightened, largely because of what the school district had endured over the past decade as a result of asbestos removal. It was this experience that led the school board to aspire to make the high school a "fiber-free zone".

Part of that decision to go "fiber-free" included the selection of AP Armaflex closed-cell elastomeric foam insulation for piping and ductwork throughout the school. The amount of duct insulation installed made it one of the largest foam insulation projects in the history of Pennsylvania. The installation also included approximately 10 miles of pipe insulation.



"It's just easier to work with. It doesn't break up inside of the unit so we're not getting call backs after three or four years." Jim Choquette



AP Armaflex Assurance System

Your peace-of-mind assurance that AP Armaflex is made to the strictest quality, technical performance and environmentally friendly standards.

ISO Registration: Ensures that all Armacell manufacturing facilities consistently meet customer requirements... by managing all processes with ongoing quality assessments.

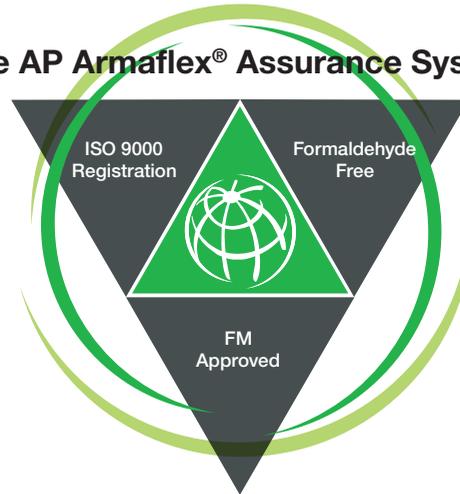
Factory Mutual Approval Guide: Ensures consistent performance to published values by monitoring:

- Fire Performance – FM pipe chase test, Flammability test, United Building Code (UBC) 26-3 Room Test
- WVT – ASTM E 96
- Thermal Conductivity – ASTM C 518

Formaldehyde-Free: Ensures that AP Armaflex is a low-emitting product. It is also low VOC.

Closed-cell AP Armaflex: Adding value, creating better outcomes for Engineers, Owners and Building Occupants!

The AP Armaflex® Assurance System



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