

ARMACELL SOLUTIONS

# Data Centers

The data center is changing, becoming more versatile and more powerful. With this transformation, the demand for data centers with more processing power is driving the move to improved cooling strategies with better energy efficiency. Armacell's insulation products are providing relief to cooling systems in this fast-paced industry.

[www.armacell.us](http://www.armacell.us)



 **armacell**<sup>®</sup>  
MAKING A DIFFERENCE AROUND THE WORLD



NEW AIR PLENUM SOLUTION

# ArmaFlex® Ultra

with FlameDefense™ technology — the first elastomeric insulation Classified by UL to UL 723 at 25/50. In an emergency, **it gives you time.**

[www.armacell.us](http://www.armacell.us)



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



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# ABOUT ARMACELL

We are the inventors of flexible foams for equipment insulation and a leading provider of engineered foams. Our lightweight thermal, acoustic and mechanical solutions create sustainable value for our customers. Day in and day out, our products significantly contribute to global energy efficiency, urbanization, lightweighting, the globalization of food supplies and acoustic comfort. Our product solutions stand out in terms of functionality and ease of installation.

## // Passionate

Dedicated and professionally-minded employees with an entrepreneurial spirit are our greatest asset. They share a common set of core values: customer experience, commitment, empowerment and accountability, integrity and sustainability.

**Armacell.**

**Making a difference around the world.**

**300+**  
active patents

**24**  
production facilities  
in 16 countries on  
4 continents

**3,100**  
employees worldwide  
representing  
70 different  
nationalities

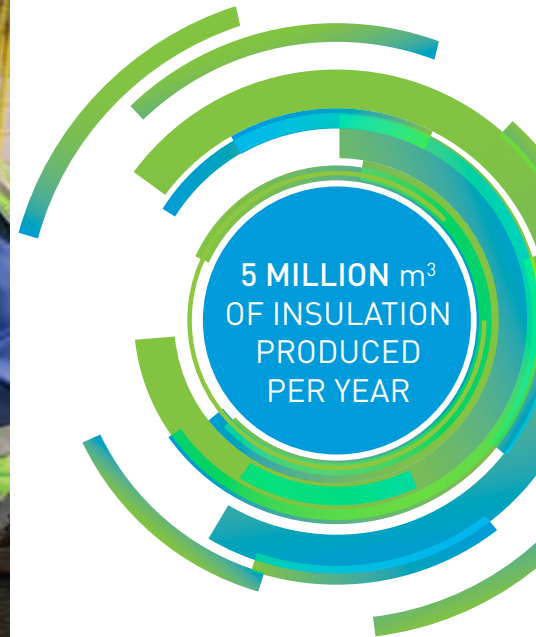


# SOLUTIONS

## ENABLING ENERGY SAVINGS

### // Innovative

We develop new technologies and focus on products that deliver superior technical performance. Now in its seventh generation, ArmaFlex® is the original flexible elastomeric foam insulation material for superior condensation control and thermal performance. Our most recent product launches include ArmaFlex Ultra, the first elastomeric insulation Classified by UL to UL 723 at 25/50.



### // Consumer-centric

We create genuine value for our customers, value them as partners, and are committed to developing solutions tailored to their requirements. The outcome is added value for our business partners and, most significantly, energy savings and a longer working life for their critical equipment.



140 x MORE  
ENERGY  
SAVED

### // Sustainable

We dedicate our business activities to advancing and optimizing energy efficiency for equipment and to closing the loop to achieve a more sustainable use of resources. Our ArmaFlex insulation saves 140 times more energy than is required for its production and prevents the emission of several million tons of CO<sub>2</sub> per year.



# DATA CENTER SOLUTIONS

Today's technology companies are deploying higher-density systems and more specialized machine learning tools, like Artificial Intelligence, which require more efficient cooling processes. Data center managers need new cooling systems, especially liquid or cold water based designs, which can benefit from installing smart insulation solutions to help save energy, control condensation and provide cooling that server rooms require.

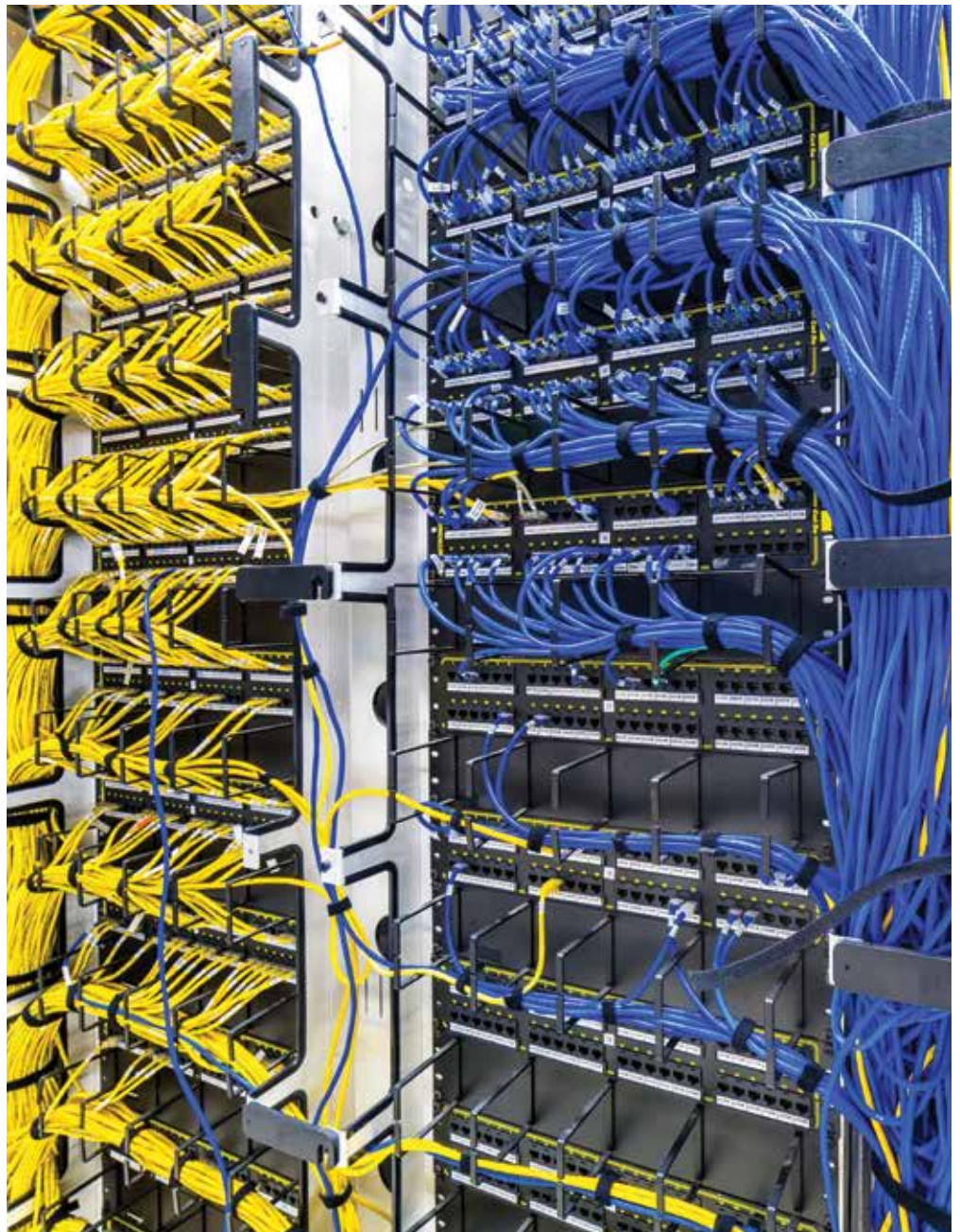
## RISING TEMPERATURES AND TRENDS

As much as 40% of the total operational costs for a data center come from the energy needed to cool the massive amounts of electronic equipment. Computer servers housed in data centers generate vast amounts of heat so keeping the system cool is essential. With CPUs needing over 200 watts and GPUs hitting 300 watts of power, air cooling systems in data centers are becoming insufficient. Liquid cooling systems are gaining popularity and are thousands of times more efficient at heat removal.

Data usage is forecasted to keep growing and tech giants are all-in for new tools to infuse their products with efficiency. Social media and e-commerce companies are also on similar trajectories. Due to high-density chip designs and increasing rack densities, these companies will require ongoing innovation and will rely on data center providers with experience in advanced cooling designs to meet these higher demands.

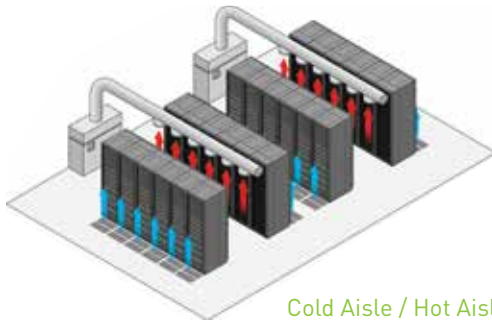
The **Google** data center in Lenoir, North Carolina is larger than

**8** FOOTBALL FIELDS!



## DECODING COOLING METHODS

There are two traditional ways to cool a data center: air-based cooling and liquid-based cooling. The most common air-based cooling methods use “cold aisle/hot aisle” orientation. This involves facing the cold sides of each server cabinet away from the hot sides of the next row of servers. This creates a convection system where the cabinet cools itself. Another method uses “Hot Aisle Containment” or “Cold Aisle Containment” where either the hot aisle air or cold aisle air is enclosed and captured, turning the rest of the room



Cold Aisle / Hot Aisle Configuration

into a return air plenum. Hot aisle containment can provide 40% more savings than the cold aisle/hot aisle configuration alone.

The legacy floor based cooling method relies on delivering a small quantity of cooled conditioned air that mixes with

the larger volume of air in the space to reach the desired temperature. This system worked wonders decades ago when information technology equipment (ITE) densities were low, but with increasing servers in smaller spaces, this method will soon be obsolete.

Evaporative cooling is a traditional technology that can be used to cool servers as well. Also known as swamp cooling, this method uses the process of evaporating water on wet pads to bring the temperature down in a room. The term swamp cooling is not by accident however, as this type of system creates higher humidity levels which should be avoided around ITE.

Liquid-based methods are increasing in popularity for data center managers. In one type of liquid-based cooling, water flows through pipes and cooling tower pumps chilling the hot side of the cabinet to decrease the temperature.

Another and more recent liquid-based cooling method is known as liquid immersion cooling where a special type of liquid coolant, which does not conduct electricity and will not damage the components, flows across the hot components to cool it down. Yes, the servers are fully emerged in this dielectric fluid!

## SOFTWARE AND HARDWARE INNOVATIONS

Data centers can use 75% more cooling than actually required and there is little risk management in the process. Introducing AI technology is a recent innovation most data center managers are considering to drive system intelligence and personalization. A smart assistant utilizing machine learning and cooling robots in the cabinets can reduce costs because it lets data center managers know when and how much cooling is truly needed. AI can read CPU and GPU temperatures and processes data in real time helping data centers become more efficient.

## INSULATION FOR INFORMATION MANAGEMENT

The one thing all of these cooling methods have in common is the need for proper insulation. Armacell's ArmaFlex® closed-cell foam insulation is a rubber-based flexible material ideal for insulating chilled water piping, chillers, cooling tanks and air handlers. Insulating pipes, refrigeration lines or cooling systems not only promotes energy efficiency, but it also prevents condensation on below-ambient temperature surfaces—a critical issue for data center management.

Specifying ArmaFlex for data centers is a smart move. Armacell uses a fiber-free, formaldehyde-free, low VOC formulation for its foam insulation, making it an excellent option for the data center environment, eliminating particulate that can damage sensitive servers. Its closed-cell structure also prevents moisture ingress and naturally resists growth of mold and mildew. The flexible nature of elastomeric insulation means it installs easily in tight spaces in floors, walls or ceilings. You can count on ArmaFlex insulation retaining its thermal integrity over time, lasting well into the digital age. ■

AI technology and machine learning can help data centers become more efficient

For more information about the ArmaFlex family of products, visit [www.armacell.us](http://www.armacell.us)







# DATA CENTERS AROUND THE NATION ARE RELYING ON OUR PROVEN SOLUTIONS

## PROJECTS WON

- **Ashburn Nexus Data Center - Building 1** – Ashburn, Virginia
- **Ashburn VA3 Data Center** – Ashburn, Virginia
- **CloudHQ Data Center - Bldg LC2** – Ashburn, Virginia
- **Digital Reality Data Center** – Ashburn, Virginia
- **Equinix Data Center** – Dallas, Texas
- **Facebook Data Center** – Eagle Mountain, Utah
- **Facebook Data Center Phase 1** – New Albany, Ohio
- **Facebook Forest City Data Center Campus - Phase 2** – Forest City, North Carolina
- **Facebook Social Circle Data Center Campus Phase 1** – Social Circle, Georgia
- **Google Data Center** – Midlothian, Texas
- **Google Data Center** – Stevenson, Alabama
- **Google Data Center Expansion Buildings 1 & 2** – Monks Corner, South Carolina
- **Intel Ronler Acres Campus DX1** – Hillsboro, Oregon
- **Intergate.Columbia** – East Wenatchee, Washington
- **Micron Technology Inc. Manassas Plant Expansion** – Manassas, Virginia
- **Microsoft Data Center - Phase 2** – Northlake, Illinois
- **Point One Remington Data Center** – Remington, Virginia
- **Sentinel Data Centers** – Sterling, Virginia
- **Starbelt Data Center - “Project Cricket”- Facebook** – Huntsville, Alabama
- **Switch Data Center Campus (Project Hoover)** – Lithia Springs, Georgia
- **T5 Colorado Springs Data Centers** – Colorado Springs, Colorado

## SMART SOLUTIONS FOR YOUR BUSINESS

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### Enjoy the benefits of our excellent customer service

All over the world, our customers rely on 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.





# STAKEHOLDER: MECHANICAL ENGINEERS

## Specifiers Hold the Keys to Project Success

At Armacell, we know that the specifier is the key to a successful mechanical insulation system. We believe that providing the mechanical engineer or system designer with the knowledge and tools to make the right selection in the design phase is fundamental to the durability and energy efficiency of any HVAC or plumbing project. Mechanical system designers can have a significant impact on occupant health and must take steps during the design and

construction phases to ensure efficient system performance, condensation control, long-lasting thermal protection, acoustic benefits and healthier indoor air quality. Armacell's Specification team is here to help Mechanical Engineers and Specifiers with any insulation project. Their full-time job is to support you in any way that helps simplify the HVAC-R and acoustic specification process.

### Engineer USP / Value Proposition

- Tailored Solutions for Code Compliance, Performance and Budget
- Trusted Protection for System and Design
- Simple, Safe and Efficient System Integrity
- Drag & Drop Specification Package by Division
- Backed by an Industry Leader with over 60 years' industry experience and a 15-year warranty\*

Armacell has a comprehensive Solutions Portfolio designed to meet the needs of your application challenges.

Choose the Data Center Solutions Package that best meets the performance level and budget of your equipment system.

Application / System Type		DC1 Solution Package	DC2 Solution Package	DC3 Solution Package
	Core Performance Requirements	Superior Performance	High Performance	Standard Performance
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Air Plenum Piping and Duct Insulation	<ul style="list-style-type: none"><li>• Class A - Flame-spread 0-25, smoke developed 50</li><li>• UL Classified to UL 723 (Listed and Labeled)</li><li>• Energy Efficient &amp; Low Total Install Costs</li><li>• Low Dust or Fiber Emitting Properties</li><li>• Mold and Mildew Resistance</li><li>• Tough &amp; Durable</li><li>• Compliant to all State and City Building Codes</li></ul>	<ul style="list-style-type: none"><li>• ArmaFlex Ultra Pipe Insulation</li><li>• ArmaFlex Ultra Lap Seal Insulation</li><li>• ArmaFlex Ultra Sheet/Roll Insulation</li><li>• ArmaFlex Ultra Fittings</li></ul>	<ul style="list-style-type: none"><li>• ArmaFlex Ultra Pipe Insulation</li><li>• ArmaFlex Ultra Lap Seal Insulation</li><li>• ArmaFlex Ultra Sheet/Roll Insulation</li><li>• ArmaFlex Ultra Fittings</li></ul>	<ul style="list-style-type: none"><li>• ArmaFlex Ultra Pipe Insulation</li><li>• ArmaFlex Ultra Lap Seal Insulation</li><li>• ArmaFlex Ultra Sheet/Roll Insulation</li><li>• ArmaFlex Ultra Fittings</li></ul>
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Accessories & Supports	<ul style="list-style-type: none"><li>• Class A - Flame-spread 0-25, smoke developed 0-450</li><li>• Energy Efficient &amp; Low Total Install Costs</li><li>• Low Dust or Fiber Emitting Properties</li><li>• Mold and Mildew Resistance</li><li>• Tough &amp; Durable</li><li>• Compliant to all State and City Building Codes</li></ul>	<ul style="list-style-type: none"><li>• Insuguard Multi Saddles &amp; Shields</li><li>• ArmaFix Ecolight Pipe Supports</li><li>• Armacell Insulation Tape</li><li>• Armacell 520 Adhesives</li></ul>	<ul style="list-style-type: none"><li>• Insuguard Multi Saddles &amp; Shields</li><li>• ArmaFix Ecolight Pipe Supports</li><li>• Armacell Insulation Tape</li><li>• Armacell 520 Adhesives</li></ul>	<ul style="list-style-type: none"><li>• Insuguard Multi Saddles &amp; Shields</li><li>• ArmaFix Ecolight Pipe Supports</li><li>• Armacell Insulation Tape</li><li>• Armacell 520 Adhesives</li></ul>
Warranty		<ul style="list-style-type: none"><li>• 15-Year Limited Warranty</li></ul>	<ul style="list-style-type: none"><li>• 10-Year Limited Warranty</li></ul>	<ul style="list-style-type: none"><li>• 5-Year Limited Warranty</li></ul>
Support Documents		<a href="#">DC1 Solution Package - Document Link</a>	<a href="#">DC2 Solution Package - Document Link</a>	<a href="#">DC3 Solution Package - Document Link</a>



# STAKEHOLDER: CONTRACTOR

## Installers Make it Happen

Armacell understands the importance of the insulation contractor in the selection and proper installation of mechanical insulation products for equipment, pipes and ducts. Insulation contractors routinely make critical decisions that can – for better or for worse – affect the outcome of the project. These decisions must take into account a variety of factors, including building codes, specific application challenges, insulation capability, as well as time and budget constraints.

We strive to help insulation contractors rise to the challenge of their job in a couple of ways. First, our Technical Managers and Installation Specialists, all of whom are experts in the selection and application of all our foam materials, are fully prepared to respond to any technical questions that may arise. Second, we work closely with an extensive network of distributors so that they can provide a quick response on pricing and availability of our products.

### Contractor USP / Value Proposition

- Tailored Solutions for Code Compliance, Performance and Budget
- System and Performance Integrity - Virtually maintenance free
- One system to Support, Insulate and Protect
- Backed by an Industry Leader and a 15-year warranty\*
- AQIP Factory Training, Field Support and On-Call Technical Support
- National Distribution Network

**Armacell has a comprehensive Solutions Portfolio designed to meet the needs of your application challenges.**

**Choose the Data Center Solutions Package that best meets the performance level and budget of your equipment system.**

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# STAKEHOLDER: DISTRIBUTORS

Committed to your Success

Distributors and Wholesalers want and need suppliers who are willing to work with them as partners. As a partner, a supplier should be able to provide both the goods and services that enhance the distributorship's growth and helps it adapt as the business climate changes. It's this partnership that inspires confidence and trust in the supplier.

That's what Armacell brings to each one of its distributor/wholesaler relationships. It is a business philosophy that dates back

to 1954 with the introduction of ArmaFlex. Today with six manufacturing operations in North America, and 24 manufacturing facilities worldwide, Armacell has the capacity and logistics network to reliably meet the inventory demands of distributors. Our product knowledge, innovation and research continue to make us the global leader in elastomeric foam production. We are experts in the industry and are poised to support our distributors in their success.

## Distributor USP / Value Proposition

- Tailored Solutions for Code Compliance, Performance and Budget
- Single Sourced Solution
- Job-site Direct Shipping
- Broadest Insulation and Accessory Portfolio
- AQIP Factory Training, Field Support and On-Call Technical Support provided
- Backed by a Leader with over 60 years' industry experience and a 15-year warranty\*
- Dedicated Support Teams to support your staff and customers

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<b>Warranty</b>	• 15-Year Limited Warranty	• 10-Year Limited Warranty	• 5-Year Limited Warranty
<b>Support Documents</b>	<a href="#">DC1 Solution Package - Document Link</a>	<a href="#">DC2 Solution Package - Document Link</a>	<a href="#">DC3 Solution Package - Document Link</a>

## AT YOUR SERVICE

At Armacell, we are committed to creating an exceptional customer experience. We understand today's Data Center trends and challenges and share know-how based on our extensive experience to help you implement your project successfully. We do all we can to give you peace of mind while managing your projects.



### ARMAFLEX APPLICATION TRAININGS

To ensure that our insulation materials are installed properly, Armacell has trained thousands of installers around the world. Special training centers have been set up at many locations and we also provide valuable support on site. Several thousand insulators attend courses on installing Armacell products every year and are awarded the Armacell Qualified Installer Program (AQIP) application certificate.

#### Valuable tips and tricks

Learn to install ArmaFlex more reliably and faster than you do today.

### ARMWIN – PROFESSIONAL INSULATION CALCULATIONS

With our powerful ArmWin 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.

#### ArmWin

All-in-one technical  
insulation calculations tool.





# AT YOUR SERVICE



## SPECIFICATION SUPPORT

It is challenging to keep up with changing building codes and evolving materials technology. Armacell employs a team of full-time specification experts dedicated to providing Engineers and Specifiers solutions for complex mechanical systems. They can review and update your specs, advise on new innovations and recommend the best insulation solution for your project.

### Lunch & Learn

Providing PDH credits for onsite seminars

## EXPERT TECHNICAL SUPPORT

Have a question? We have the most experienced Technical support in the industry and are ready to take your call. Speak to experts with decades of experience who can answer your technical concerns or offer product advice.

### On call

Give our Technical Manager a call if you have questions.



You'll find a wealth of information on our website [www.armacell.us](http://www.armacell.us). Access our KNOWLEDGE CENTER for document downloads, installation videos, FAQ's and more. Visit the RESOURCES section for content tailored especially to Mechanical Engineers, Insulation Contractors, Distributor / Wholesalers and much more.

# QUICK REFERENCE

Quick links to the Technical Data Sheet for the products offered in this e-book. If you need other products or information visit [www.armacell.us](http://www.armacell.us).



Click on the product names to jump quickly to the data sheet.

- ArmaFlex Ultra
- AP ArmaFlex Tubes
- AP ArmaFlex Black LapSeal
- AP ArmaFlex Sheet/Roll
- AP ArmaFlex Duct
- ArmaFlex Shield
- ArmaFlex Fittings
- ArmaFlex Tape
- ArmaFlex 520 Adhesive
- ProFlex Tube Sheet and Roll
- Tubolit Tube Sheet and Roll
- Tundra Tube Sheet and Roll
- ImcoaTube Sheet and Roll
- Insuguard Multi Pipe Hangers
- ArmaFix EcoLight Pipe Supports



## IRON / COPPER PIPE SIZE CHART

Choose sheet and roll insulation for pipes larger than 10", mechanical systems, chillers, larger surfaces, tanks and fittings. Available in regular and self-adhering for both interior and exterior applications.

Nominal Insulation ID	Fits Pipe Size				Actual Insulation ID <sup>1,2</sup>			
	Copper Nom Size & ID (Types K,L,M)	Copper Nom Size & OD (ACR)	Iron / PVC IPS	DN <sup>3</sup>	Min ID (in)	Max ID (in)	Min ID (mm)	Max ID (mm)
1/4"	-	1/4"	-		0.293	0.355	7.4	9.0
3/8"	1/4"	3/8"	1/8"	6	0.420	0.500	10.7	12.7
1/2"	3/8"	1/2"	1/4"	8	0.560	0.640	14.2	16.3
5/8"	1/2"	5/8"	3/8"	10	0.710	0.790	18.0	20.1
3/4"	5/8"	3/4"	-	-	0.810	0.910	20.6	23.1
7/8"	3/4"	7/8"	1/2"	15	0.940	1.050	23.9	26.7
1-1/8"	1"	1 1/8"	3/4"	20	1.200	1.310	30.5	33.3
1-3/8"	1-1/4"	1 3/8"	1"	25	1.450	1.570	36.8	39.9
1-5/8"	1-1/2"	1 5/8"	1-1/4"	32	1.710	1.830	43.4	46.5
1-1/2"	-	-	1-1/2"	40	1.970	2.090	50.0	53.1
2-1/8"	2"	2 1/8"	-	-	2.220	2.340	56.4	59.4
2"	-	-	2"	50	2.580	2.780	65.5	70.6
2-5/8"	2-1/2"	2 5/8"	-	-	2.720	2.880	69.1	73.2
2-1/2"	-	-	2-1/2"	65	3.080	3.280	78.2	83.3
3-1/8"	3"	3 1/8"	-	-	3.230	3.390	82.0	86.1
3"	-	-	3"	80	3.700	3.900	94.0	99.1
3-5/8"	3-1/2"	3 5/8"	-	-	3.740	3.880	95.0	98.6
4-1/8"	4"	4 1/8"	3-1/2"	90	4.250	4.420	108.0	112.3
4"	-	-	4"	100	4.750	4.950	120.7	125.7
5"	-	-	5"	125	5.810	6.010	147.6	152.7
6"	-	-	6"	150	6.880	7.080	174.8	179.8
8"	-	-	8"	200	8.880	9.080	225.6	230.6
10"	-	-	10"	250	11.005	11.205	279.5	284.6

1. ID tolerances are typical values and may differ depending on the product and wall thickness.

2. Insulation ID is sized larger than the pipe OD to fit over copper pipe couplings. When properly installed, a gap between the insulation and pipe will not adversely effect the insulation performance.

3. DN, diametre nominel, is equivalent to NPS sizes in metric dimensions.

NOTE: See installation guide for proper installation instructions.

WEB: [www.armacell.us](http://www.armacell.us) > Knowledge Center > Document Downloads > Mechanical Insulation > Installation Manuals



# SOLUTIONS PRODUCTS

12/SOLUTIONS PRODUCTS



## Tubes



### AP ArmaFlex® White and Black Tubes

Original flexible, closed cell elastomeric tubes in black and white



### ArmaFlex® Shield

Continuous coil pipe insulation with durable, protective coating



### Imcoa®, Tubolit®, Tundra®

Economical polyethylene insulation for plumbing lines, in semi-slit and self-seal closure



### AP ArmaFlex® Black LapSeal

Self-sealing tube insulation with reinforced lap seal



### ArmaFlex® Ultra & LapSeal

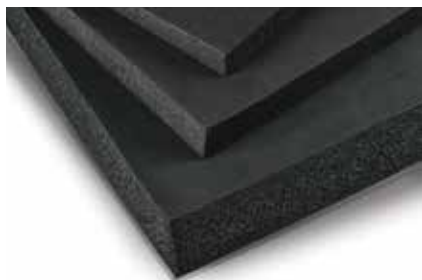
The first elastomeric pipe insulation Classified by UL to UL 723 at 25/50



### ProFlex® Tubes & LapSeal

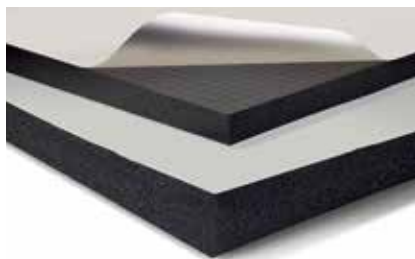
Economical flexible foam insulation for HVAC/R applications

## Sheet and Roll



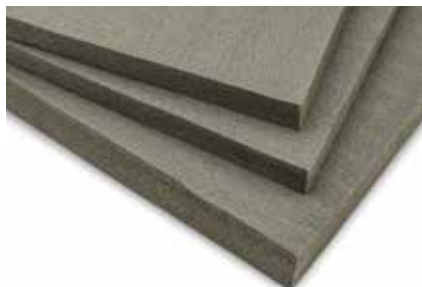
### AP ArmaFlex® & AP ArmaFlex® FS

Original fiber-free insulation for thermal applications



### AP ArmaFlex® SA & AP ArmaFlex® FS SA

Fiber-free insulation for thermal applications in self-adhering format



### ArmaFlex® Ultra

The first elastomeric insulation Classified by UL to UL 723 at 25/50



### ProFlex®

Economical flexible foam insulation for HVAC/R applications

## Duct Liner and Wrap



### ArmaFlex® Ultra Duct Liner

The first elastomeric duct liner Classified by UL to UL 723 at 25/50



### ArmaFlex® Ultra Duct Wrap

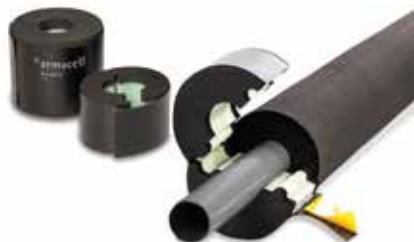
The first elastomeric duct wrap Classified by UL to UL 723 at 25/50

# SOLUTIONS PRODUCTS

13/SOLUTIONS PRODUCTS



## Accessories



### Armafix® EcoLight Pipe Support

Insulated pipe support with self-adhesive closure



### AP ArmaFlex® Insulation Tape

Pressure sensitive foam tape for insulating pipes and fittings



### Insuguard® Multi

Tool-free pipe hanger system with adapters for all common mountings



### ArmaFlex® Pre-fabricated Fittings

Made to order fittings for T's, Elbows, P Traps and more



### ArmaFlex® Black LapSeal Tape

Low profile tape for AP ArmaFlex Black LapSeal end seams



### PE Fittings

Pre-fabricated T's and Elbows made of polyethylene

## Adhesives and Coatings



### 520 Adhesive & 520 Black

Recommended adhesive specially formulated for ArmaFlex insulation



### 520 BLV & Low VOC Spray Adhesive

Low VOC adhesive alternatives



### WB Finish

Latex-based, indoor/outdoor, UV-resistant coating for ArmaFlex insulation

### OUTDOOR USE:

Painting with WB Finish or other protective jacketing is required to prevent damage to the insulation in exterior applications and to comply with the insulation protection sections of the International Energy Conservation Code (IECC) and ASHRAE 90.1.

OTHER GREAT ARMACELL PRODUCTS AVAILABLE

[www.armacell.us](http://www.armacell.us)

# ARMACELL HAS THE SOLUTIONS

For more information about our **Data Center Solutions Packages**, click on the package number to be linked to the package's technical data.



## DATA CENTER SOLUTIONS PORTFOLIO PACKAGES

### DC1

#### Solution Package

### DC2

#### Solution Package

### DC3

#### Solution Package

Application / System Type	Core Performance Requirements	Superior Performance	High Performance	Standard Performance
Specification	<a href="#">Master Specification Link</a>	<a href="#">DC1 Project Specification Link</a>	<a href="#">DC2 Project Specification Link</a>	<a href="#">DC3 Project Specification Link</a>
Plumbing	<ul style="list-style-type: none"> <li>Class A - Flame-spread 0-25, smoke developed 0-450</li> <li>Energy Efficient &amp; Low Total Install Costs</li> <li>Low Dust or Fiber Emitting Properties</li> <li>Mold and Mildew Resistance</li> <li>Tough &amp; Durable</li> <li>Compliant to all State and City Building Codes</li> </ul>	<ul style="list-style-type: none"> <li>Tundra® Insulation (Canada)</li> <li>IMCOA® SS Insulation or Tubolit® SS Insulation</li> <li>PE Fittings</li> </ul>	<ul style="list-style-type: none"> <li>Tundra® Insulation (Canada)</li> <li>IMCOA® SS Insulation or Tubolit® SS Insulation</li> <li>PE Fittings</li> </ul>	<ul style="list-style-type: none"> <li>Tundra® Insulation (Canada)</li> <li>IMCOA® SS Insulation or Tubolit® SS Insulation</li> <li>PE Fittings</li> </ul>
HVAC/R & Mechanical Piping	<ul style="list-style-type: none"> <li>Class A - Flame-spread 0-25, smoke developed 0-450</li> <li>Energy Efficient &amp; Low Total Install Costs</li> <li>Low Dust or Fiber Emitting Properties</li> <li>Mold and Mildew Resistance</li> <li>Tough &amp; Durable</li> <li>Compliant to all State and City Building Codes</li> </ul>	<ul style="list-style-type: none"> <li>ArmaFlex® Ultra Pipe Insulation</li> <li>ArmaFlex® Ultra Lap Seal Insulation</li> <li>ArmaFlex® Ultra Sheet/Roll Insulation</li> <li>ArmaFlex® Ultra Fittings</li> <li>ArmaFlex® Shield Pipe Insulation</li> </ul>	<ul style="list-style-type: none"> <li>AP ArmaFlex® Pipe Insulation</li> <li>AP ArmaFlex® Lap Seal Insulation</li> <li>AP ArmaFlex® Sheet/Roll Insulation</li> <li>AP ArmaFlex® Fittings</li> <li>ArmaFlex® Shield Pipe Insulation</li> </ul>	<ul style="list-style-type: none"> <li>ProFlex® Pipe Insulation</li> <li>ProFlex® Lap Seal Insulation</li> <li>ProFlex® Sheet/Roll Insulation</li> <li>ProFlex® Fittings</li> </ul>
Air Plenum Piping and Duct Insulation	<ul style="list-style-type: none"> <li>Class A - Flame-spread 0-25, smoke developed 0-450</li> <li>UL Classified to UL 723 (Listed and Labeled)</li> <li>Energy Efficient &amp; Low Total Install Costs</li> <li>Low Dust or Fiber Emitting Properties</li> <li>Mold and Mildew Resistance</li> <li>Tough &amp; Durable</li> <li>Compliant to all State and City Building Codes</li> </ul>	<ul style="list-style-type: none"> <li>ArmaFlex® Ultra Pipe Insulation</li> <li>ArmaFlex® Ultra Lap Seal Insulation</li> <li>ArmaFlex® Ultra Sheet/Roll Insulation</li> <li>ArmaFlex® Ultra Fittings</li> </ul>	<ul style="list-style-type: none"> <li>ArmaFlex® Ultra Pipe Insulation</li> <li>ArmaFlex® Ultra Lap Seal Insulation</li> <li>ArmaFlex® Ultra Sheet/Roll Insulation</li> <li>ArmaFlex® Ultra Fittings</li> </ul>	<ul style="list-style-type: none"> <li>ArmaFlex® Ultra Pipe Insulation</li> <li>ArmaFlex® Ultra Lap Seal Insulation</li> <li>ArmaFlex® Ultra Sheet/Roll Insulation</li> <li>ArmaFlex® Ultra Fittings</li> </ul>
Accessories & Supports	<ul style="list-style-type: none"> <li>Class A - Flame-spread 0-25, smoke developed 0-450</li> <li>Energy Efficient &amp; Low Total Install Costs</li> <li>Low Dust or Fiber Emitting Properties</li> <li>Mold and Mildew Resistance</li> <li>Tough &amp; Durable</li> <li>Compliant to all State and City Building Codes</li> </ul>	<ul style="list-style-type: none"> <li>Insuguard Multi Saddles &amp; Shields</li> <li>ArmaFix EcoLight Pipe Supports</li> <li>Armacell Insulation Tape</li> <li>Armacell 520 Adhesives</li> </ul>	<ul style="list-style-type: none"> <li>Insuguard Multi Saddles &amp; Shields</li> <li>ArmaFix EcoLight Pipe Supports</li> <li>Armacell Insulation Tape</li> <li>Armacell 520 Adhesives</li> </ul>	<ul style="list-style-type: none"> <li>Insuguard Multi Saddles &amp; Shields</li> <li>ArmaFix EcoLight Pipe Supports</li> <li>Armacell Insulation Tape</li> <li>Armacell 520 Adhesives</li> </ul>
Warranty		• 15-Year Limited Warranty	• 10-Year Limited Warranty	• 5-Year Limited Warranty
Support Documents		<a href="#">DC1 Solution Package - Document Link</a>	<a href="#">DC2 Solution Package - Document Link</a>	<a href="#">DC3 Solution Package - Document Link</a>



# WARRANTIES

**15-YEAR  
LIMITED WARRANTY:**

**Superior Performance  
Package-Products**



**10-YEAR  
LIMITED WARRANTY:**

**High Performance  
Package-Products**



**5-YEAR  
LIMITED WARRANTY:**

**Standard Performance  
Package-Products**



## BASIC TERMS AND CONDITIONS FOR SOLUTION PORTFOLIO WARRANTY

- All applicable products defined within the Solution Portfolio must be installed to satisfy the system warranty for the defined package.
- This Warranty applies only to the products noted as the approved system components. Armacell will take no responsibility for any labor or other costs associated with the removal, repair, replacement or disposal of the defective Product materials.
- Product installation must be completed by an AQIP trained installer and installed in accordance with Armacell's North American Application Manual, and all other written and technical specifications of Armacell.
- Any defective Product is not discarded, destroyed or altered before inspection by Armacell, or rendered defective or damaged by modifications not made by Armacell, acts of God such as fires, explosions, hurricanes, tornados or earthquakes or by materials installed or stored near the Products.
- Owner/Contractor agrees to permit inspection of the Product installation at the Location at time of install and then at various times throughout the warranty term by Armacell and its representatives upon reasonable request during standard business hours.
- A jobsite inspection by Armacell or one of its appointed representatives will be required to validate package compliance and finalize the warranty request.
- Certificate of Warranty to be issued to the Installing Contractor for the identified project and will be effective from time of purchased.

**Full Warranty Details will be provided at time of certificate issuance**

All data and technical information are based on results achieved under typical application conditions. 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. 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

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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 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:  
[www.armacell.us](http://www.armacell.us)

