



ARMACELL –
MAKING A **DIFFERENCE** AROUND THE **WORLD**.
GRIHA – NEW DELHI

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AGENDA

- About Armacell
- Insulation Basics & Energy Conservation
- Armacell Products
- Application Areas
- Advantages of Armaflex®
- Project References

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 **armacell**[®]

ABOUT
ARMACELL

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ARMACELL – PIONEER IN FLEXIBLE
INSULATION PRODUCTS



- **A global leader** in flexible foams for the equipment insulation market and a leading provider in engineered foams
- Today, Armaflex[®] is one of the world's **best-known brands** for flexible technical insulation
- HQ in Luxembourg with 3 regional HQ
- Singapore (APAC/India)
- Münster, Germany (Europe)
- Chapel Hill, NC (USA)

COMMERCIAL CONSTRUCTION | RESIDENTIAL CONSTRUCTION
LIGHT INDUSTRY | ENERGY | OIL & GAS
SPORTS & LEISURE | AUTOMOTIVE | TRANSPORT | OTHERS

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ARMACELL AT A GLANCE



Total net sales in 2016:
€ 550 million (INR 3,974 Crores)



Approximately 2,870 employees worldwide



24 production facilities in 15 countries on 4 continents

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INVENTOR OF FLEXIBLE ELASTOMERIC FOAM INSULATION IN 1954



- Central development centre in Münster, Germany (Europe)



- Almost all **significant FEF innovations** throughout the world **were introduced by Armacell**



- 202 active patents (176 patents received from 2010 – 2013)

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GLOBAL FOOTPRINT, LOCAL SUPPORT



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ARMACELL FACILITIES IN ASIA

Guangzhou, China
Established in 1994



Suzhou, China
Established in 2003



Banpong, Thailand
Established in 2001



Pune, India
Established in 2005



Cheonan, South Korea
Established in 2012



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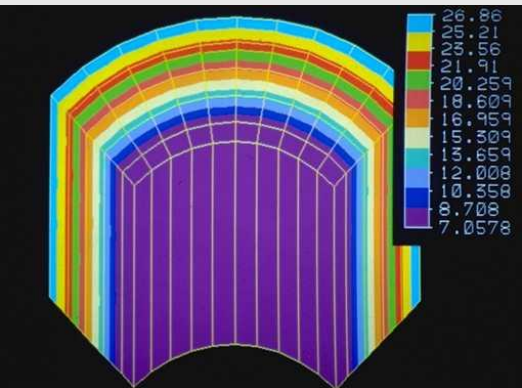


ARMACELL INDIA PVT. LTD.



- Established in 2005
- State-of-the-art manufacturing facility located in Pune, Maharashtra
- 130+ employees including sales team stationed across India to service pan India market
- Point of contact between local distributors with the international sales, manufacturing, marketing and technical teams of the Armacell Group
- Strong sales network pan India

WHAT IS INSULATION?



Insulation slows down the rate of heat exchange between two different temperatures.

THE NEED FOR INSULATION

- Primarily used to minimize heat gain or heat loss from/to the surrounding
- May be used to satisfy one or more of the following design objectives:

- + **Energy conservation**
- + **Condensation control**
- + **Personnel protection**
- + **Process control**
- + **Freeze protection**
- + **Noise control**
- + **Fire safety**



TECHNICAL PARAMETERS

- Following Technical Values to be considered for selecting an insulation material.
- + **Thermal Conductivity**
 - + **Water Vapour Diffusion Resistance Factor**
 - + **Water Absorption**
 - + **Fire Properties**
 - + **Temperature Range**
 - + **Outer Protective Covering**



**ARMACELL
PRODUCTS**

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MAJOR PRODUCT BRANDS

Armaflex

ArmaSound

ArmaChek

Armafix

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Class O Armaflex

Flexible Thermal Insulation, engineered to prevent condensation and energy losses

- Built-in vapour barrier
- Reduces energy losses
- Self extinguishing, does not drip & does not spread flames
- Class O, UL 94
- FM Approved
- ROHS Approved
- λ Value - 0.035 W/m-K @ 0°C
- ' μ ' Value - 7,000
- Temperature Range - -50°C to +105°C



Class O Armaflex

Flexible Thermal Insulation, engineered to prevent condensation and energy losses



Class O Armaflex Plus

Anti Microbial Duct Insulation for enhanced Indoor Air Quality

- Built-in vapour barrier
- Reduces energy losses
- Better indoor air quality
- Anti microbial protection - EPA Approved
- Self extinguishing, does not drip & does not spread flames
- Class O, UL 94
- FM Approved
- λ Value - 0.033 W/m·K @ 0°C
- 'μ' Value - 10,000
- Temperature Range - +7°C to +85°C



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Class O Armaflex Plus

Anti Microbial Duct Insulation for enhanced Indoor Air Quality



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Armaflex Alu

Flexible Insulation with silver finish for improved aesthetics

- Built-in vapour barrier
- Reduces energy losses
- Aesthetically appealing Silver Finish
- Easy to clean
- Self extinguishing, does not drip & does not spread flames
- Class O, UL 94
- FM Approved
- λ Value - 0.035 W/m·K @ 0°C
- 'μ' Value - 12,000
- Temperature Range - 0°C to +105°C



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Armachek GC Colors

The economical covering system

- Economical covering system
- Now available in Black, Grey, Red, Blue & Green colours
- Good resistance to mechanical impact & scratch
- Easy to install
- UV Resistant
- Dust free & No fibre erosion
- Non metallic & Flexible
- Light weight
- Available as cladding and pre-covered options with Sheets and Tubes



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ArmaChek Silver

The brilliant covering for Armaflex Insulation designed for fast installation, durability and easy cleaning

- Good resistance to mechanical impact & scratch
- Easy to install
- UV Resistant
- Good resistance to oil & chemicals
- Non metallic, Light weight & Flexible
- Saves installation time
- Pre-fabricated elbows, T section parts are available
- Available as cladding and pre-covered options with Sheets and Tubes
- Temperature Range - -25°C to +75°C



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ArmaSound Super Silence Ductliner

High Performance Acoustic insulation for a quieter environment

- Good absorptive open cell material foam
- Reduces Duct Noise and Plant room Noise
- Anti microbial protection
- Better indoor air quality
- Class 1, UL 94
- Quick & Easy installation
- Non fibrous
- High density to dampen duct ratting & vibration
- High Air Erosion Resistance
- Temperature Range - -20°C to +85°C



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Armafix Class O

Pipe Support for Condensation Control and Prevention of Thermal Bridging

- Reliable condensation control
- Easy to install
- Tough inner core along with Armaflex material
- Dust and Fibre free
- Eliminates thermal bridging
- No corrosion
- Temperature Range - -50°C to +105°C



Other Products

Adhesives & Sealants

Duct Seal
Pipe Seal
Armaflex 520
Armaflex HT 625
Mastics

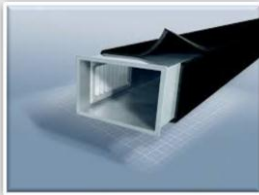
Tapes

Armaflex Tapes
GC Tapes
Alu Tapes
Silver Tapes



Application Areas

- Ducting Application
- Piping Application
- Tank Application
- Chiller Application
- Underdeck Application
- Wall Application
- Acoustic Insulation for
Ducts, Walls, Plant Rooms
& AHU



ADVANTAGES OF ARMAFLEX®

KEY FEATURES



With Closed Cell Protection

Closed cell insulation materials possess a built-in resistance to the passage of water vapour. As a result closed cell materials do not rely on an easily pierced external water vapour barrier to prevent condensation on refrigeration and air conditioning systems.

KEY FEATURES



With In-built Water Vapour Barrier

Closed cell Armaflex material has such a high built in resistance to water vapour ingress that the insulation effectively acts as if it is itself the water vapour barrier. No easily compromised external foil barrier is required.

KEY FEATURES



With Non-Wicking

Since the insulation itself acts as a vapour barrier the "wicking" effect is not possible. This means that a small puncture in the insulation surface results only in localised damage and not system wide failure reducing the risk of; condensation, mould growth and under insulation corrosion.

KEY FEATURES



With Active Anti-Microbial Protection

Armaflex contains Microban, an anti-microbial additive which actively inhibits mould and bacteria. Effective resistance against microbial growth is provided even if the surface is damaged or pierced.


KEY FEATURES

A 3D illustration showing a cross-section of a pipe with Armaflex insulation. A beam of light from a sphere labeled 'Seamless Installation' highlights the adhesive layer between the insulation and the pipe wall, demonstrating a full contact seal.

Seamless Installation

Armaflex Adhesive is a full contact adhesive which fully fuses the Armaflex insulation together. This means that adhered seams and butt joints do not represent the thermal bridges or water vapour bridges they would otherwise be.

KEY FEATURES

A 3D illustration showing a cross-section of a pipe with Armaflex insulation. A beam of light from a green sphere labeled 'DUST & FIBRE FREE' highlights the nitrile rubber material of the insulation, emphasizing its clean and safe properties.

Dust & Fibre Free

Dusty and fibrous materials are both difficult to work with and create an additional workplace hazard often aggravating respiratory conditions amongst those working with and around them. As a nitrile rubber material, Armaflex is entirely dust and fibre free, making it suitable for use in schools, offices and hospitals.

KEY FEATURES



Formaldehyde free

Formaldehyde is classified as a probable human carcinogen and maximum recommended exposure limits are set by the health and safety executive. Armaflex does not contain or outgas formaldehyde and will not contribute to overall formaldehyde levels.

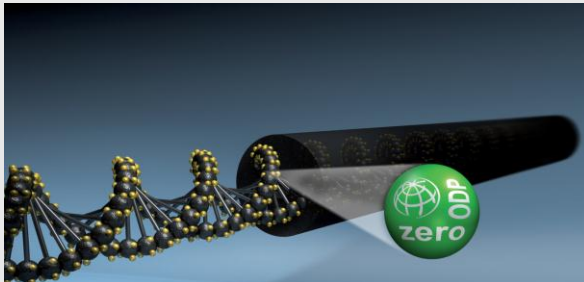
KEY FEATURES



Minimal VOC

Volatile organic compounds (VOC's) vaporize into the indoor environment contributing towards sick building syndrome. Being classified as minimal VOC means Armaflex is not contributing to this effect.

KEY FEATURES



ODP Zero

All materials which have an Ozone depletion potential (ODP) are harmful to our environment and the higher the ODP of a chemical the greater the detrimental effect. The production process ensures that Armaflex always has an ODP rating of zero. There is no additional charge for a lower ODP rating as Armaflex is always manufactured with the minimum ODP rating of zero.

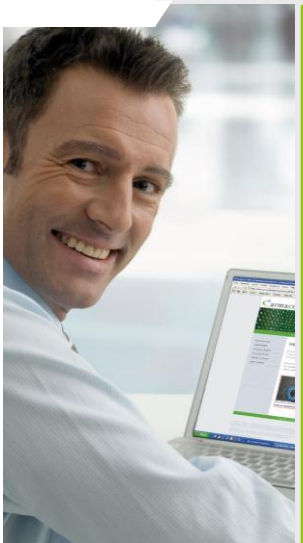
KEY FEATURES



GWP Zero

Insulation materials can be blown using damaging gases which contribute heavily towards global warming. Armaflex is only blown using gases known to have no impact on global warming – giving Armaflex a global warming potential (GWP) rating of 0.

TECHNICAL SUPPORT FOR ENGINEERS



- Armwin® Calculation Tool



- Technical documents, e.g. specifier text, technical bulletins & FAQs



- Successful reference projects

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HANDS-ON SUPPORT FOR CONTRACTORS



- Comprehensive product range to ensure professional installation



- Practical trainings & seminars to enable excellent workmanship



- Readily accessible self-service support tools such as application manuals and training videos

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THEORY & HANDS-ON TRAINING IN CLASS-BASED ENVIRONMENT



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ON-SITE APPLICATION TRAINING




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CERTIFIED INSTALLER PROGRAM
CONTINUOUS LEARNING & IMPROVEMENT



Full Name

Job Title

Company Name

Training Location

Certificate No. / Expiry Date

Signature

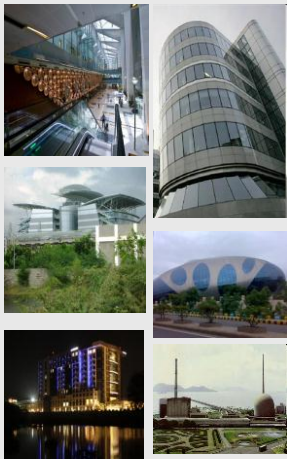
Date of Issue

Install it. Trust it.

PROJECT
REFERENCES

PROJECT REFERENCES – PRIVATE

ARMAFLEX - A PROVEN TRACK RECORD OF RELIABLE EXCELLENCE



- TCS, Indore
- HP, Bangalore
- Infosys, Pune
- Asian Heart Foundation, India
- Hosipira, Vizag
- Bokaro Steel Plant, Bokaro
- Ranbaxy Laboratories Ltd, Devas
- Reliance, Dahej
- Reliance Industries
- Zydus Hospital, Ahmedabad
- Manipal Hospital, Bangalore
- Delhi International Airport T3
- Cipla – Goa
- Sun Pharma – Guwahati

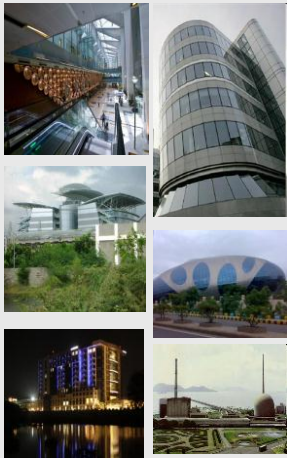
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PROJECT REFERENCES – PRIVATE

ARMAFLEX - A PROVEN TRACK RECORD OF RELIABLE EXCELLENCE



- Grand Hyatt, Mumbai
- Grand Hyatt, Kochi
- Marriott, Kochi
- Marriott, Shillong
- Le Meridien, Coimbatore
- ITC, Chennai, Manesar, Kolkata, Amritsar
- Taj Bengal, Kolkata
- Taj Vivanta, Guwahati
- JW Marriott, Kolkata
- Ritz Carlton – Pune
- Apollo Hospital – Mumbai, Nashik, Hyderabad, Chennai
- Reliance DAICEC, Mumbai
- Adani Solar, Mundra

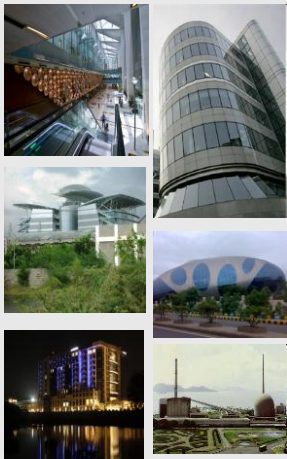
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PROJECT REFERENCES – GOVERNMENT

ARMAFLEX - A PROVEN TRACK RECORD OF RELIABLE EXCELLENCE



- Punjab National Bank Delhi (CPWD)
- Indian Aviation Academy Delhi (AAI)
- IISER Kolkata
- Airforce Station Chiloda
- Air Force Hindon Air Base
- Indian Institute of Technology Gandhinagar
- AIIMS Raipur
- Cancer Hospital Lucknow (UPRNNL)
- NTPC Meja Power Plant
- Brahmos Aerospace Nagpur (DRDO)
- Air Force Station Tejpur
- National Physical Laboratory Delhi
- DRDL Lab Chandipur Orissa
- Greater Noida Authority Office Uttar Pradesh
- IIM Trichy
- PGIMER Hospital Chandigarh



Any questions?

Thank You !!!