ARMSTRONG

# EMPOWERING MEDICAL DEVICE MANUFACTURERS WITH ADVANCED MATERIAL CONVERSION SOLUTIONS

One Partner, Multiple Processes, Unmatched Flexibility

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# Medical Device Manufacturing
# **INDUSTRY CHALLENGES**

Medical device manufacturers face a demanding and rapidly evolving landscape. Increased pressure to shorten development cycles and speed up time-to-market is coupled with the need to meet stringent global regulatory standards. At the same time, there's growing demand for components that are not only functional and durable, but also ergonomic, biocompatible, and user-friendly. In a market driven by patient outcomes and innovation, OEMs must partner with suppliers who understand materials, processes, and compliance – while also delivering speed, flexibility, and scale.

## Faster Time-to-Market

Companies are under pressure to accelerate development cycles while navigating FDA, ISO 13485, and MDR compliance.

## Lack of Materials Expertise

Choosing the right adhesives, foams, films, or elastomers is critical – but most converters lack the depth of application knowledge needed.

## Supplier Fragmentation

Lack of vertically integrated partners to handle multi-material, multi-process solutions.

### Scaling Uncertainty

Difficulty scaling from prototype to volume while preserving performance and design intent.

### Balancing Function & Comfort

Devices must be biocompatible, lightweight, ergonomic, and intuitive to use – without sacrificing performance.

## Armstrong's Value Proposition

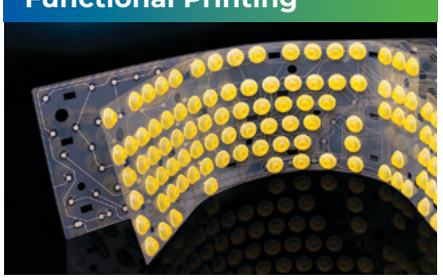
At Armstrong, we offer a unique advantage in medical device manufacturing: full-spectrum material converting and deep materials expertise – all under one roof. Unlike single-process vendors or commodity suppliers, we integrate capabilities such as die-cutting, thermoforming, elastomer and reaction injection moulding, particle foam moulding, and functional printing to deliver end-to-end, customized solutions. From R&D to full-scale production, our comprehensive approach simplifies your supply chain, improves design control, accelerates development and validation, and ensures consistent, high-quality components that meet both clinical and regulatory requirements.

### Why Choose

ARMSTRONG

- **MULTI-PROCESS INTEGRATION:** Streamline development by consolidating production under one expert partner
- **EXPERT MATERIAL SELECTION:** Get the best-fit foam, adhesive, film, or elastomer for your device's function and patient safety
- **COLLABORATIVE ENGINEERING:** We co-develop solutions with your R&D and design teams for optimal results
- **FLEXIBLE, SCALABLE MANUFACTURING:** Support for pilot runs to high-volume production
- **REGULATORY READY:** Processes aligned with ISO 13485 and medical industry standards

# Our Converting Capabilities for Medical Devices

| PROCESS | WHAT WE DO | BEST USED FOR |
|---|---|---|
| **Precision Die-Cutting**  | High-precision cutting of foams, films, foils, adhesives, and laminates into complex shapes, with multi-layer lamination, cleanroom-ready and kiss-cutting available. | Wound care dressings, diagnostic test strips, electrode pads, EMI/RFI gaskets, pressure-sensitive adhesives, TIM parts |
| **Foam Thermoforming**  | Forming medical-grade open or closed-cell foams into custom-contoured parts for ergonomic fit, pressure distribution, and user comfort. | Orthopaedic supports, surgical positioning pads, cushioning for rehab & mobility aids, shock & vibration dampening components |
| **Elastomer Moulding**  | Injection and compression moulding of medical elastomers – such as silicone, EPDM, fluorosilicone, or nitrile rubber – for soft, biocompatible, stretchable parts. | Gaskets, tubing interfaces, wearable seals, handheld grips, shock & vibration dampening components |
| **Reaction Injection Moulding (RIM)**  | High- or Low-pressure moulding of semi-rigid and flexible PUR foams for soft-touch, ergonomic, or shock-absorbing components with integrated design flexibility. | Cushioning pads, orthopedic supports, diagnostic interface pads, medical enclosures with comfort zones, shock & vibration dampening components |
| **Particle Foam Moulding**  | Moulding of Expanded Polypropylene (EPP) for high-strength, impact-resistant, and insulated components that need to be lightweight, durable, and reusable. | Protective enclosures, packaging, energy-absorbing structural parts, transport systems for sensitive devices |
| **Functional Printing**  | Printed circuitry, heating elements, membrane switches, user interface graphics, conductive paths, and traceable labels on flexible or rigid substrates. | Membrane keypads, printed sensors, diagnostic interfaces, flexible printed heaters |

# Key Medical Device Applications We Support

## MEDICAL DEVICE COMPONENTS

Precision-engineered elements that enhance function, sealing, and protection inside devices, such as:

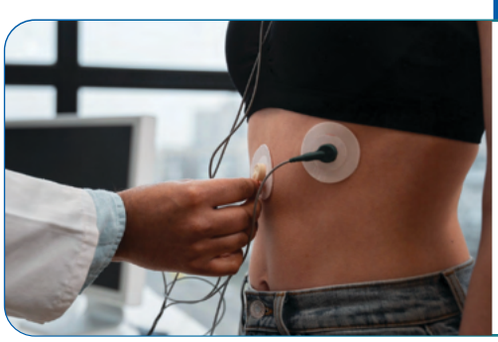
- Gaskets and seals
- Impact or Shock Absorption paddings and inserts
- EMI/RFI shielding
- Vibration dampers
- Light-blocking barriers
- Die-cut thermal interface materials (TIMs)

## MEDICAL DEVICES & EQUIPMENT INTERFACES

Ergonomic, durable, and intuitive interface components to enhance usability, such as:

- Membrane keypads
- Printed UI layers
- Graphic or Decorative overlays
- Tactile overlays
- Flexible printed circuit button arrays
- Printed touch sensors
- Flexible printed heaters

## WEARABLES & DIAGNOSTICS



Breathable, skin-safe materials and printed features for compact, connected health devices, such as:

- Wearable sensor pads
- Electrode backings
- Adhesive tapes
- Printed conductive films
- Breathable cover layers
- Skin-contact cushions
- Flexible printed heaters

## PATIENT COMFORT & SUPPORT

Custom foam and elastomer components designed for ergonomic support and pressure relief, such as:

- Positioning pads
- Custom foam contoured parts
- Wearable backing layers
- Pressure-relief cushions
- Head, neck, and limb supports
- Orthopedic braces with soft linings

## WOUND CARE DRESSINGS

Multi-layered constructions that ensure adhesion, absorption, and patient comfort, such as:

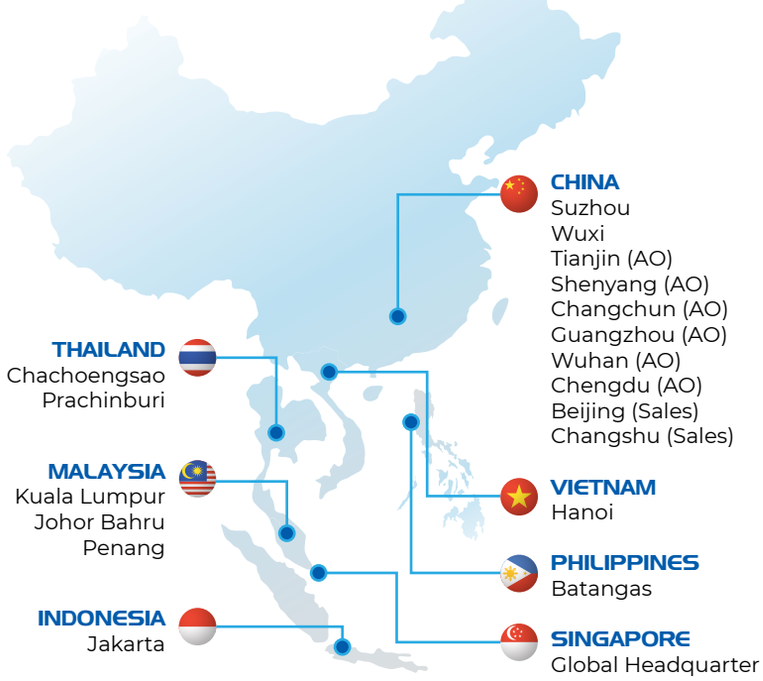
- Primary foam dressings
- Secondary absorbent layers
- Adhesive tapes
- Carrier backings
- Moisture-vapor and wound contact films
- Soft silicone interfaces

# Who We Are

Armstrong Industrial Corporation (Armstrong) is Asia's trusted partner in innovative foam, film and elastomer solutions for Noise, Vibration, Heat and Safety Management. Established in 1974, Armstrong today has a strategic, consolidated presence in seven countries in Asia.

Our extensive network of global partners provides us access to a comprehensive range of innovative materials and solutions, providing our customers more choice and better cost control.

Our key sites are ISO & IATF certified, underscoring our commitment to ensuring that the products we manufacture meet your highest quality standards.




ISO 9001: 2015 | 14001:2015 | 22301:2019 | 13485:2016
45001:2018 | 14064-1:2018 | IATF 16949:2016

# Key Highlights

**Core Expertise:** We are the only fabricator in Asia offering over 12 core precision engineering technologies to design and manufacture 2D and 3D foam, film, and elastomer products for dampening, insulating, sealing, and cushioning.

**Regional Presence:** Our 16 factories and 2 sales offices across seven countries in Asia ensure close proximity to major production hubs, allowing us to mitigate long-term geographic risks and serve customers efficiently.

**Supply Chain & Collaboration:** With over 50 years of experience, we have established a global network of more than 800 suppliers and access to over 6,400 material types, enabling us to meet a broad range of application needs while maintaining strong partnerships with international partners in Europe, the USA, and Asia

**Customer Commitment:** We are dedicated to being a collaborative and innovative partner, providing quieter, cooler, lighter, and safer solutions that meet the evolving technical and business needs of our customers.

# Manufacturing Capabilities

Armstrong is a leading material converter, specializing in films, foams, and elastomers, serving global OEM customers across a wide range of industries. Armed with advanced processing technologies, we specialize in precision die-cutting, elastomer moulding, foam thermoforming, particle foam moulding, reaction injection moulding, and functional printing to produce custom 2D and 3D foam, film, and elastomer products. Our precision engineering technologies enable us to customise solutions and products for dampening, insulating, sealing, and cushioning, addressing challenges related to noise, vibration, heat, and safety management.

## Our Automotive OEM Customers

BMW, Mercedes-Benz, Audi, Volkswagen, Toyota, Honda, Tesla, Ford, Volvo, Nissan, Suzuki, Mazda, FAW Group, Geely, Hongqi, GAC Group, GWM, BYD, SAIC, Peugeot, Perodua, Proton, JAC, Yamaha, GM, Mitsubishi Motors, Isuzu, Subaru, Jaguar, Land Rover

## Our Lifestyle, Industrial & Medical OEM Customers

dyson, Bosch, Roland, Mitsubishi Electric, muRata, Sony, Swarovski, Scientific Games, Seagate, Western Digital, HSD, Daikin, Lexmark, Yamaha, Sharp, Panasonic, Epson, Bose, Schneider Electric, Toshiba, TDK, Toto, Philips, logitech, Bioptimal, Mölnlycke, Bio-Rad, Hillrom, Péters Surgical, Leica

## Armstrong Global Footprint & Technology Partners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If you have any questions or are looking for advice, please do not hesitate to contact us.

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