



MAKING A DIFFERENCE AROUND THE WORLD

CREATING VALUE FOR EVERYONE EVERYWHERE

ANNUAL REPORT 2019



ABOUT US

Armacell is the inventor of flexible elastomeric foams for equipment insulation. We develop innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for our customers. Day in, day out, our products make a significant difference around the world. As a multi-material and multi-product company, we operate two main businesses: Advanced Insulation and Engineered Foams. Our product focus is on insulation materials enhancing the energy efficiency of technical equipment, high-performance foams for technical and lightweight applications, 100% recycled PET products and next-generation aerogel technology.



ArmaFlex® in Space

ArmaFlex® pipe insulation was used in the U.S. Destiny Laboratory, supplying the International Space Station (ISS) with oxygen at the beginning of the millennium. Armacell's foam insulation was selected and installed for its outstanding technical performance and its excellent flexibility, keeping the AC cooling lines from sweating or freezing in space.

For more of our projects, please see pages 14–17

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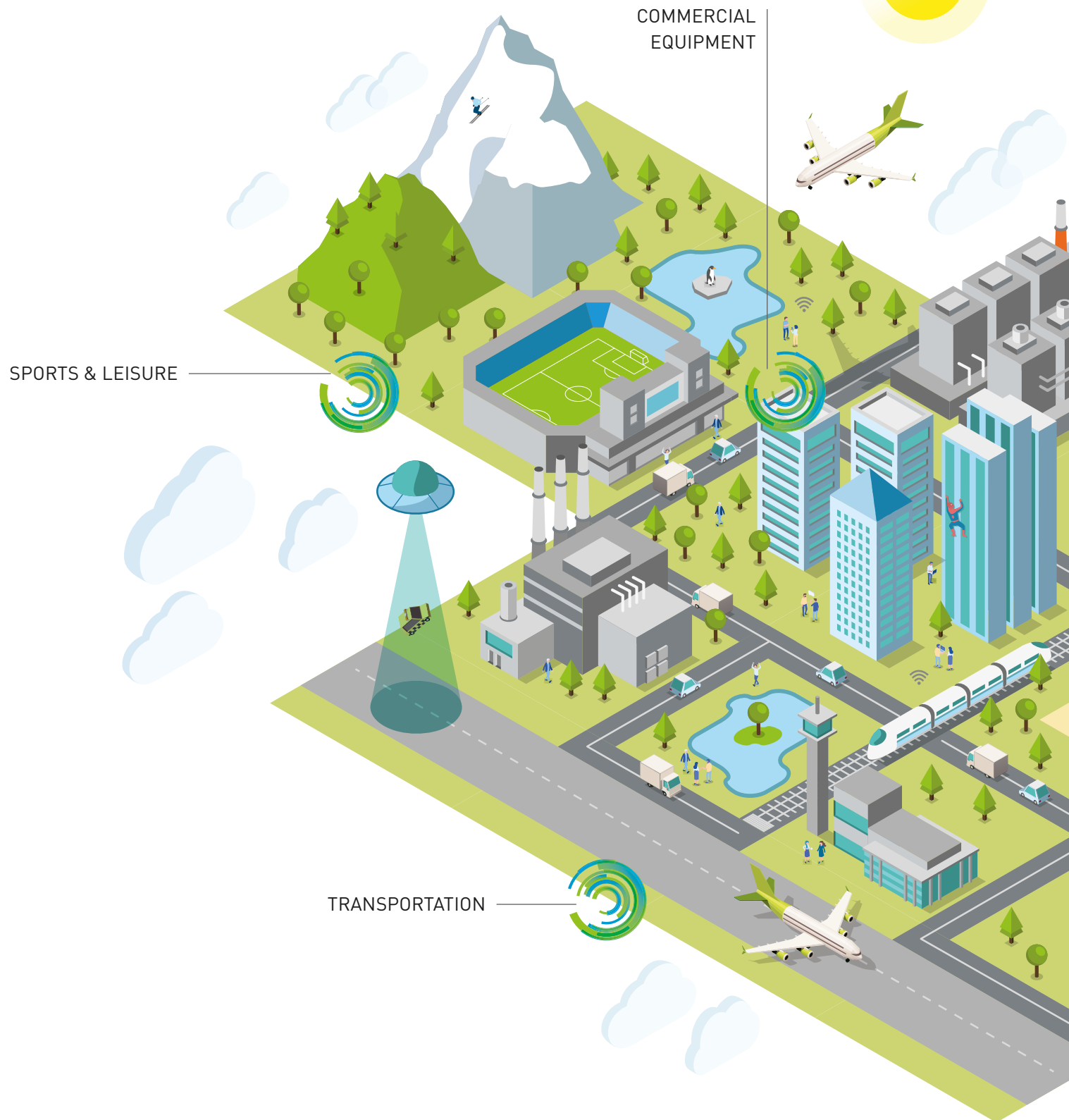
CREATING VALUE FOR EVERYONE EVERYWHERE

Energy efficiency, urbanisation, acoustic comfort and vibration control, globalisation of the food supply chain, lightweighting, and sustainability: six megatrends that are shaping everyday life around the world. Our high-performance products and solutions are delivering the value-enhancing answers markets are demanding. Answers we develop in close collaboration with our customers globally.

Across six destination end markets – commercial equipment, residential equipment, energy, industrial, transportation and sports & leisure – our products and solutions are creating value for our stakeholders, using resources more sustainably and improving the quality of life for people around the world. The ingenuity and passion of our employees ensure the highest quality standards, drives our technologies forward and builds our growth story year over year.



ARMACELL IS EVERYWHERE





Everywhere you are – at work or play, home or leisure – Armacell is there with you. With solutions that conserve energy, reduce noise levels, keep food fresh or add comfort and safety. Armacell products improve the quality of life for people everywhere.

WE MAKE LIFE...



FASTER



SAFER



QUIETER



FRESHER



STRONGER

Armacell's innovative and safe thermal, acoustic and mechanical insulation solutions are key to a wide range of everyday applications adding value to people's lives around the world.



LIGHTER



GREENER



COMFORTABLE

MULTI-PRODUCT, MULTI-MATERIAL, MULTI-FUNCTION

ARMACELL INSIDE



Since
1954

FLEXIBLE &
TRUSTED



ARMAFLEX®

ArmaFlex® is Armacell's product heritage. Today, in its 7th product generation, ArmaFlex® is manufactured across the Armacell world and customised to local requirements and often combined with other products into hybrid solutions.

ACOUSTIC SOLUTIONS

Noise and vibration are increasingly impacting urban life. Armacell's acoustic comfort and vibration control solutions enhance the quality of life for urban residents, commuters and the general environment.



RELIABLE

Sound
attenuation

COMPONENT FOAMS →

Armacell's high-performance and custom-engineered products, including ArmaComp Ensolute® and ArmaComp Monarch®, support the greening of the automotive industry where lightweighting is forecast to lower CO₂ emissions by up to 40% by 2050.



LIGHTWEIGHT

40%
less CO₂



100%
recyclable

THERMO
WELDABLE



ARMAFORM®

Our structural PET foams are used as a core material in a wide range of composite sandwich structures and made entirely of recycled PET bottles. Until today, more than 1 billion PET bottles have been reused to manufacture ArmaForm® products.

ARMAGEL™

Armacell's next-generation, aerogel-based insulation technology opens up new application opportunities and destination end markets in a wide range of industries. ArmaGel™ products extend our insulation portfolio and raise our application temperature performance to +650°C.





ULTRA-THIN,
ULTRA-LIGHT

CUI
mitigation*

* Corrosion Under Insulation

ACCESSORIES →

Armacell supplies a wide range of added-value accessories offering practical benefits in multiple applications, including cladding systems, tools and pipe supports. Insuguard® pipe saddles and shields protect piping and its insulation from damage.



80%
quicker

EASY TO INSTALL



Ulrich Ehrhardt
R&D Centre Technician, Germany

Shrirang Chopade
Operation Specialist, India



Aaron Swanson
Production Technician, USA



OUR GLOBAL
PRESENCE AND
MULTICULTURAL
HERITAGE
CREATE VALUE
FOR EVERYONE
EVERYWHERE.

CREATING VALUE

IN SIX DESTINATION END MARKETS



1. COMMERCIAL EQUIPMENT

ArmaFlex®, the world's first flexible insulation foam, stands for a wide range of insulation products for HVAC ducts and systems, hot and cold water, heating, plumbing and refrigeration systems, as well as acoustic and vibration control solutions. Products that are enhancing energy efficiency in commercial buildings around the world.

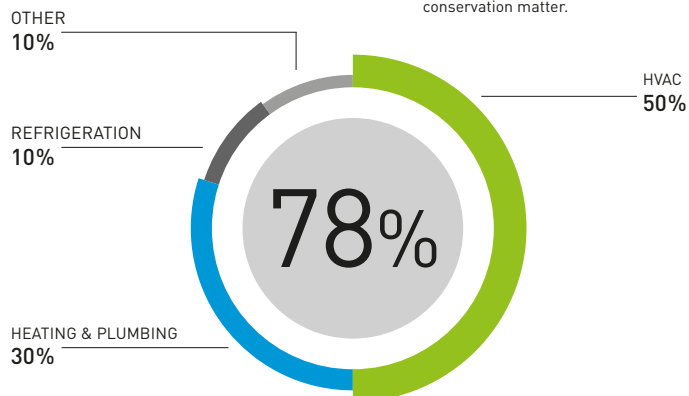
40–45%



The 108-storey, 528-metre high Citic Tower is the tallest building in Beijing and the tenth tallest worldwide. 7,000 m³ of ArmaFlex® were used to insulate the chilled water pipes and air ducts of the HVAC systems. Outstanding equipment insulation is key to conserving energy.

ADVANCED INSULATION (AI)

Through the co-design of energy-efficient installations, Advanced Insulation products meet the demand for insulating equipment in markets where energy distribution and conservation matter.





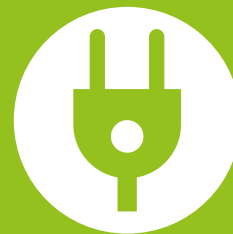
2. RESIDENTIAL EQUIPMENT

Versatile and easy-to-install products for residential heating, plumbing, HVAC, hot and cold water, and sound attenuation and vibration control applications.

10–15%



São Paulo's Cidade Matarazzo complex, the largest-ever privately funded architectural rejuvenation of a historic building in Brazil, used 22,737 m² of Armacell FonoBlock tubes and 19,850 m² of FonoBlock sheets to achieve high-performance thermal and acoustic attenuation.



3. ENERGY

Armacell's thermal and acoustic insulation solutions are used in the energy industry in general and in applications relating to the production or transformation of energy.

< 5%



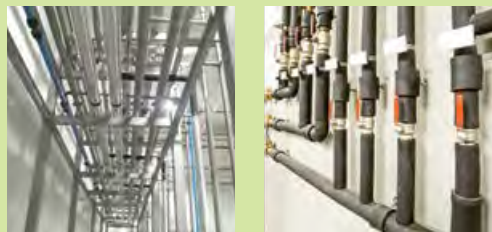
At the Dalian Hengli petrochemical plant in Northeast China, Armacell solutions benefited the operator over legacy materials and saved 27% insulation thickness, 40% installation time and 20% installation costs.



4. INDUSTRIAL

Enhanced energy efficiency and improved working conditions through lower noise levels are becoming increasingly important in the industry. Armacell's thermal insulation and acoustic solutions are applied in industrial equipment manufacturing, pharmaceuticals and power generation, as well as in electrical enclosure systems.

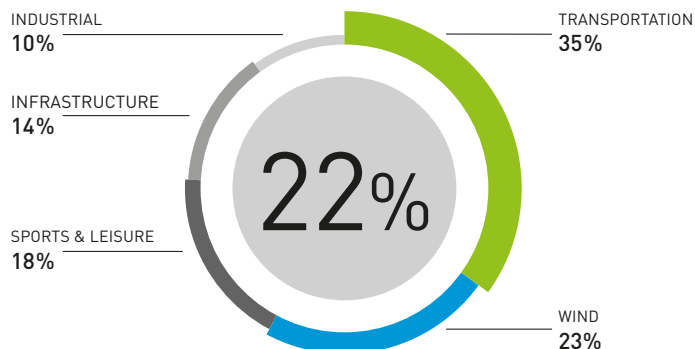
< 20%



Mars, the global food company, wanted its plant in Pune, India, to be eco-friendly and LEED Gold® certified. Armacell was selected to supply industrial thermal insulation and acoustic comfort solutions that fulfilled the stringent insulation requirements.

ENGINEERED FOAMS (EF)

Engineered Foams: Semi-finished and finished non-insulation products for a broad range of applications across multiple destination end markets.





6. SPORTS & LEISURE

The secret is shock absorption. Armacell products are used in parts or components where impact cushioning, flotation properties or lightweighting is essential, e.g. sport turf and floor underlayment, wrestling mats, helmet paddings and life jackets.

< 5%



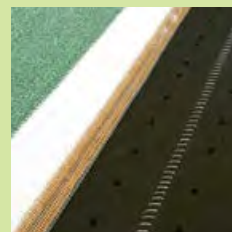
5. TRANSPORTATION

Energy-efficient mobility in multiple means of transport: Armacell's insulation products are key to duct systems of ships and trains, its lightweight insulating materials with thermal and acoustic properties in the composite panels of trains, trucks and trailers.

< 10%



Lightweighting was critical in constructing China's CRH3A high-speed train. ArmaForm® was the lightweight structural core material of choice for the train's nose due to its thermo-formability, fatigue resistance and process versatility.



Kentner Stadium in North Carolina, USA, home of the three-time national champion Wake Forest field hockey team, is equipped with ArmaSport® turf underlayment to provide cushioning, protection and a smooth playing surface.

URBANISATION

BATTERSEA POWER STATION

London, UK

Armacell's AF/ArmaFlex® was installed in the redevelopment of Battersea Power Station due to its superior flexibility in fitting around pipe bends, pumps and valve sets, its fast installation qualities with self-seal tubes, its versatility in offering energy savings for hot-water pipes and effective condensation protection on cold-water piping, and its excellent fire performance.

147,000 metres

ArmaFlex® tubes installed

E-MOBILITY

TESLA FACTORY

Shanghai, China

Tesla Giga Shanghai is the company's first overseas manufacturing facility and China's first 100% foreign-invested automotive factory. It will produce battery cells as well as the Tesla Model 3 and Model Y cars at an initial production rate target of 250,000 electric cars per year. Over 500 m³ of ArmaFlex® were used during the first phase of construction for the HVAC system.

> 500 m³

ArmaFlex® used

DIGITALISATION

DATA CENTRES

Multiple locations, USA

The cloud computing boom is driving the demand for more and more data centres with greater processing power. Up to 40% of operational costs are for cooling the electronic equipment; in many cases 75% more power is used for cooling than actually required. ArmaFlex® insulation products are enabling improved cooling strategies and enhanced energy efficiency at multiple large scale data centres across the USA.

8+ Football fields

The size of the largest U.S. data centre



AEROSPACE

INTERNATIONAL SPACE STATION

Destiny module, Earth orbit

The aerospace industry requires high-performance products that deliver reliability and safety, noise reduction, vibration control, air and dust sealing, and greater comfort. Armacell's insulation solutions are the answer. Armacell's ArmaFlex® pipe insulation was used in Destiny, the U.S. Lab attached to the International Space Station, to keep the AC cooling lines from sweating or freezing in space.

+121° to -157° C

Temperature range outside the ISS

OUR MISSION:
CREATING VALUE
FOR EVERYONE.

QUALITY:
WHY IT MATTERS
SO MUCH TO US.







QUALITY

ENSURING THE HIGHEST QUALITY STANDARDS

30,000 QUALITY TESTS PER YEAR IN FOUR KEY CATEGORIES

Armacell's market leadership in insulation materials and high-performance foams is a commitment to consistently deliver high quality across its products and solutions. Certified quality management systems are key in ensuring compliance with Armacell's ultra-strict standards. A global quality conformity team oversees quality control and testing. 30,000 tests in four categories are conducted annually at the main testing centre in Münster, Germany. Complementary state-of-the-art product testing centres are located at other Armacell facilities around the world. Customers expect the highest quality standards from the market leader, and Armacell engineers are dedicated to ensure their expectations are met.

Armacell drives innovation strategically. Over the past three years, the company invested approximately €30 million into R&D to maintain the highest production standards and accelerate innovation. Some 100 researchers and technicians at Armacell facilities in Belgium, Canada, China, Germany and the USA are driving innovation in quality-oriented production, product performance, new materials and pioneering technologies. Innovations they develop – often in close collaboration with partnering universities – are subjected to the strictest quality tests prior to commercialisation.

Armacell works closely with universities and research institutes around the world. The company cooperates with the University of Sheffield, UK to develop new acoustic solutions and fundamental understanding of acoustic phenomena for various materials and systems.

1

MECHANICAL

Determining the haptic appearance and performance of materials to external mechanical influences during installation or subsequent operation

2

CHEMICAL

Measuring and calibrating the content and mix of chemical components or substances paramount to application performance, e.g. mitigation of corrosion under insulation

3

PHYSICAL

Definition of physical properties, e.g. water vapour transmission, thermal conductivity, sound absorption or cell structure and density of the foam

4

FIRE RELEVANT

Calibrating the fire performance in accordance with multiple standards representing diverse fire events, e.g. room corner test, car interior or rail applications

RECYCLED PET AS RAW MATERIAL

TURNING PLASTIC WASTE INTO GOOD USE AROUND THE WORLD

Armacell's unique recycled PET foam technology (rPET) grants plastic bottles a new life.

Switching to a circular economy

Plastics have beneficial properties that make life more convenient, simpler and safer. Single-use plastics also impact the environment. According to McKinsey, global plastic waste totalled 260 million metric tons in 2018 and is expected to rise to 460 million metric tons by 2030. Armacell's rPET foams are reducing that waste and contributing to a circular economy in plastics.

PET pioneer

A decade of research went into developing rPET foam technology. Subsequent milestones included the first and only 100% recyclable thermoplastic foil product for recycled PET in 2015 and large-scale production of 3D-shaped PET foam cores in 2018. Armacell's PET foam products meet the stringent technical requirements of today's composite core materials and follow the circular economy guidelines to preserve the environment.



Over the past decade, Armacell has reused over 1 billion PET bottles and saved more than 40,000 metric tons of CO₂ emissions.



Environmental benefits

The entire Armacell rPET portfolio is 100% recyclable. This adds up to a sensible use of plastic waste and helps to save energy and reduce CO₂ emissions. Foam core materials using rPET technology generate over a third less CO₂ than those made of virgin PET, while PVC foams, a competing technology, typically cause twice the volume of CO₂ emissions.

High-value applications

rPET technology enables single-use PET bottles conversion into long-lifetime, high-value foam core materials used in a wide variety of applications, e.g. 90-metre-long wind turbine blades, the body structures of high-speed trains, surfboards and skis, or the 24-karat gilded roof of an Orthodox Cathedral in Paris. By giving plastic bottles a new life, Armacell is helping to make a sustainable difference around the world.

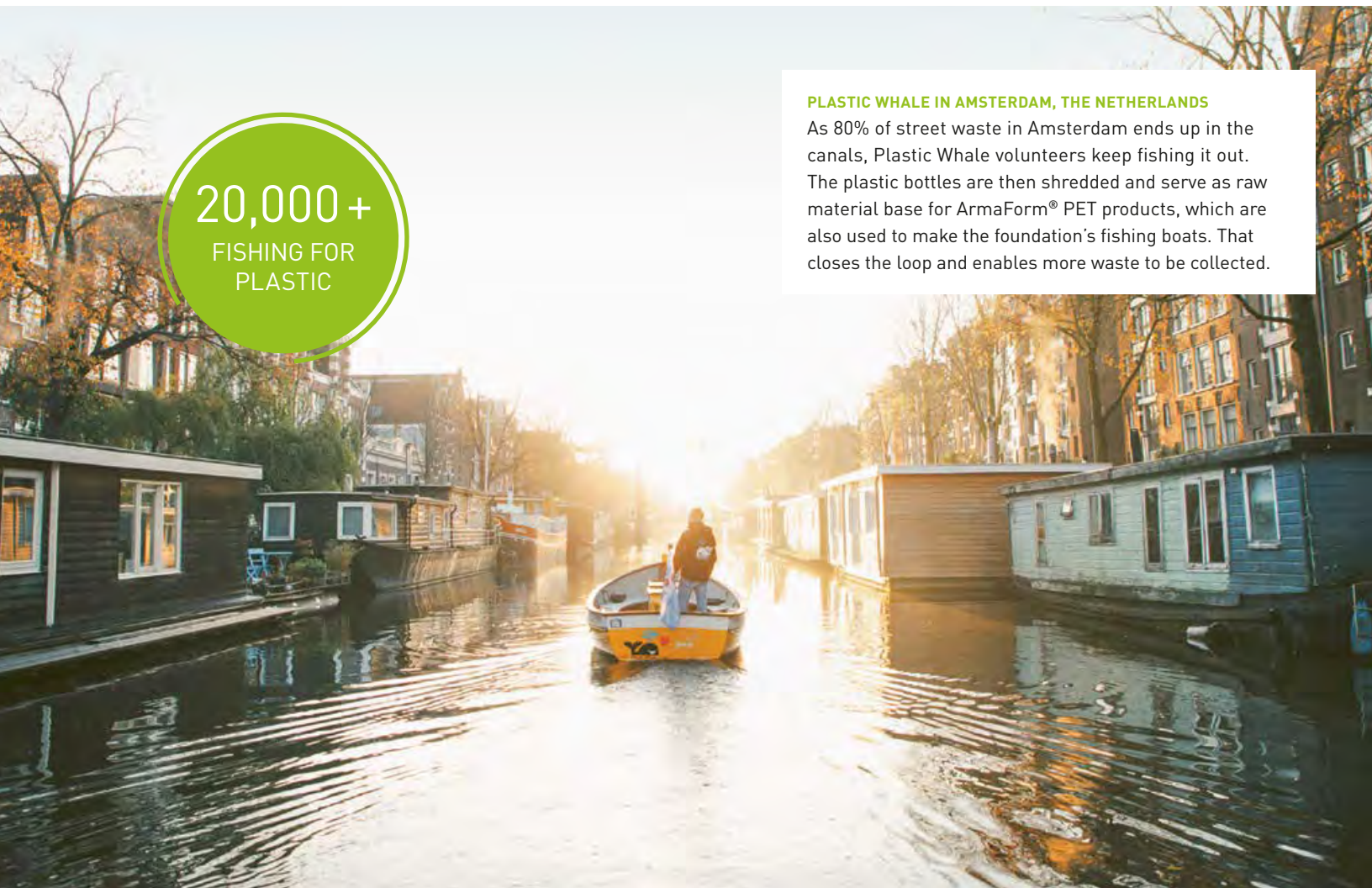
REMARKABLE APPLICATIONS



612,000
BOTTLES –
ONE HOUSE

PET FOAM HOUSE IN NOVA SCOTIA, CANADA

A 186 m² house made entirely of PET foam cores – Armacell's Brampton team made it possible. The house was assembled in just 14 hours using 170 ArmaForm® panels that were laminated together with no nails or spikes. The house's eco footprint is impressive too: 612,000 recycled PET bottles brought this house to life.



20,000+
FISHING FOR
PLASTIC

PLASTIC WHALE IN AMSTERDAM, THE NETHERLANDS

As 80% of street waste in Amsterdam ends up in the canals, Plastic Whale volunteers keep fishing it out. The plastic bottles are then shredded and serve as raw material base for ArmaForm® PET products, which are also used to make the foundation's fishing boats. That closes the loop and enables more waste to be collected.

PERFORMANCE

24 PLANTS IN
16 COUNTRIES

3,135
EMPLOYEES



70
NATIONALITIES

Shanghai Tower
Shanghai, China

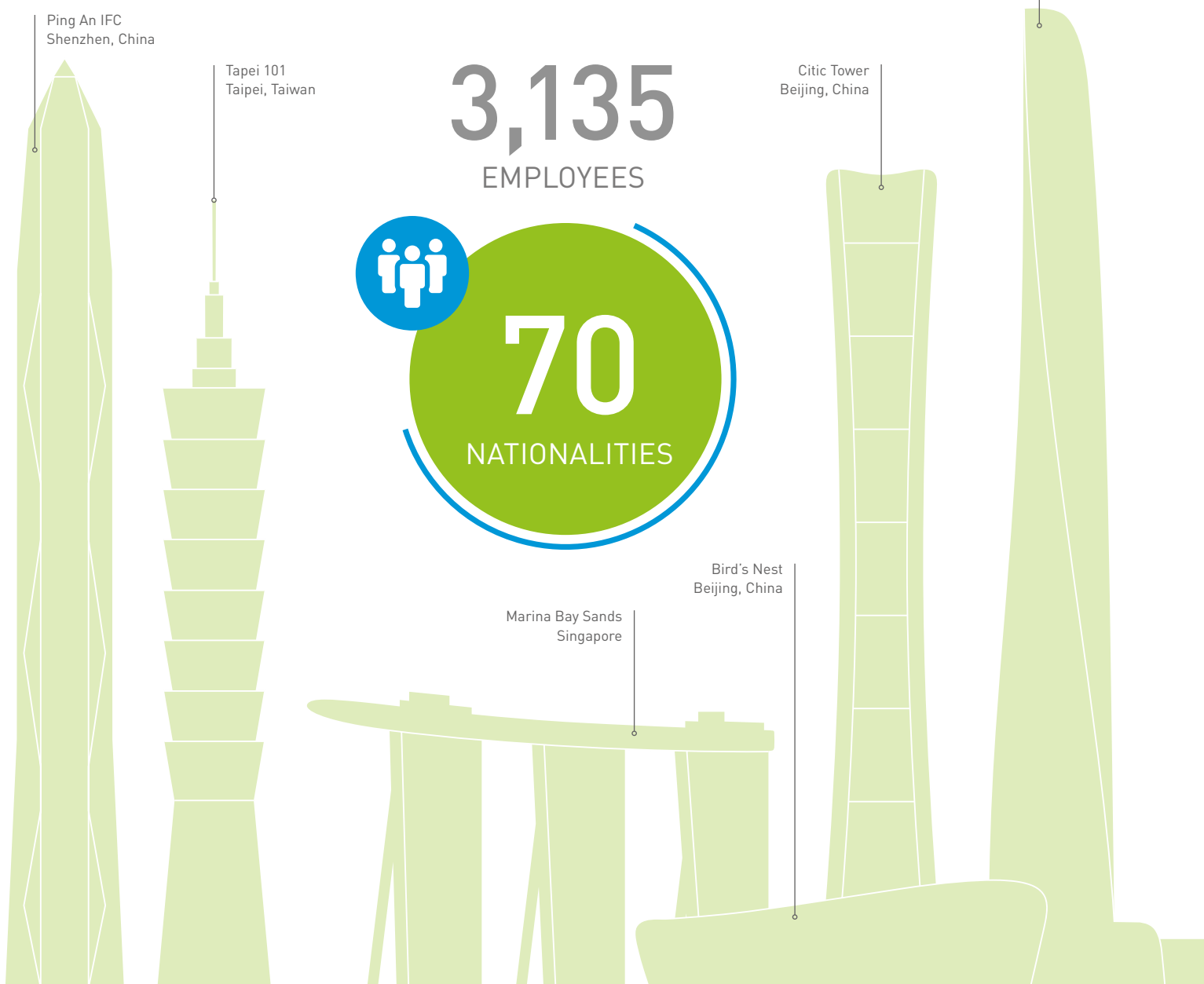
Ping An IFC
Shenzhen, China

Taipei 101
Taipei, Taiwan

Citic Tower
Beijing, China

Bird's Nest
Beijing, China

Marina Bay Sands
Singapore





ENABLING ENERGY
EFFICIENCY FOR
EQUIPMENT

Burj Khalifa
Dubai, UAE

€502m

TOTAL NET SALES **ADVANCED INSULATION**

€142m

TOTAL NET SALES **ENGINEERED FOAMS**

€134m

ADJUSTED EBITDA

EMPLOYEES WORLDWIDE

26%
APAC

30%
AMERICAS

44%
EMEA

Elbphilharmonie
Hamburg, Germany

Offshore Wind Farm
North Sea

Drilling Rig
Shetland Islands

LETTER FROM THE CEO

DEAR FRIENDS OF THE COMPANY,

CREATING VALUE FOR EVERYONE EVERYWHERE – The theme of our 2019 annual report summarises the benefits our technical equipment insulation and engineered foams products and solutions bring to people around the world. As a global, multi-material and multi-solution company, we regard our leadership in these markets as a clear commitment to create value for our global customer base and our stakeholders everywhere. We work with our customers for the long-term and develop value-generating solutions delivering practical benefits in many areas of people's everyday lives.

Record-breaking performance

2019 was a record year for Armacell. Our strong financial performance was a result of meticulous and strategic work. We continued to focus on operational excellence and are proud of our achievements in a year of profitable growth. A key milestone, for example, was the surpassing of one billion recycled PET bottles – plastic waste that is reused to manufacture our industry leading rPET foam products.

In the financial year ending 31 December 2019, our net sales rose to €644.4 million from €610.3 million in 2018, an increase of 5.6%. Our 2019 adjusted EBITDA was €133.5 million, and Armacell's adjusted EBITDA margin reached a record 20.7%. All our business divisions contributed to the positive development and recorded strong net sales figures: Advanced Insulation EMEA €225.2 million (+7.0%), Advanced Insulation AMERICAS €162.7 million (+3.1%), Advanced Insulation APAC €114.3 million (+3.4%) and Engineered Foams €142.2 million (+8.1%).

While striving for excellence, the well-being and safety of our employees come first. Thanks to our enhanced safety measures and the dedication of our operating teams, half of our plants recorded more than 1,000 days without lost-time accidents in 2019.

Investors' vote of confidence

On 4 December 2019, we announced the intention of PAI Partners, a leading European private equity firm, and KIRKBI, the holding and investment company of the Kirk Kristiansen family, to acquire Armacell from Blackstone. Following the successful capital markets refinancing and closing at the end of February 2020, PAI is our majority shareholder and KIRKBI, which has been an investor of Armacell since 2016, has significantly increased its stake in our company – a clear vote of confidence regarding our historical performance and future potential. Both PAI and KIRKBI are committed to supporting our total growth strategy as we become a global leader in advanced material technologies.

Capacity-boosting investments

In 2019, we implemented a number of strategic investments to expand our production capacities and market access. In February, we held the ribbon-cutting ceremony for our new state-of-the-art manufacturing facility in the Kingdom of Bahrain. This strengthened our position in the Gulf region. In April, we signed a commercial cooperation agreement with Thermaflex to jointly serve the Russian market. In August, we launched our industrial-scale aerogel line at our new site in Cheonan, South Korea. This increased our annual production capacity for aerogel-based insulation products from 250,000 m²



to 750,000 m². In October, we broke ground at the Cheonan site for a new administrative and logistics building. In the second half of the year, we also extended our rPET foam capacities with a fourth rPET extrusion line at our Suzhou facility in China.

We are proud of our recent innovations and successful new product launches. ArmaFlex Ultra, with FlameDefense technology, and ArmaGel DT, our new flexible aerogel blanket for cryogenic and dual-temperature applications, are the latest additions to our extensive technical insulation portfolio.

Our 20th in 2020

2020 will be an exciting year for all of us. Armacell is celebrating its 20th anniversary as a stand-alone company, and there is every reason to believe that we can add another chapter to the success story written in recent years. Our leitmotif in 2020 is 'Creating Value for Our Customers'. Value creation is an exciting journey, and as the Chinese philosopher Lao Tzu once said: A journey of thousand miles begins with a single step.

As a company, we look forward to accompanying our customers on this journey to create value for them and the people around the world. As we move forward one step at a time, our eyes are firmly focused on the goal of delivering smart energy-preserving and safety-enhancing solutions for everyone, everywhere.

Yours sincerely,

Patrick Mathieu
President and CEO
Armacell Group

EXECUTIVE MANAGEMENT TEAM



Ciro Ahumada
Vice President AMERICAS

Energises the synergies from multiple acquisitions in North and South America to deliver profitable, high-quality product solutions.



Roberto Mengoli
Chief Technology Officer

Ensures and monitors the highest possible quality and safety standards by systematically optimising structures and processes throughout Armacell.



Sophie Ancelin*
Chief Human Resources Officer

Fosters the talents of 3,000+ employees in 16 countries to enable Armacell's global growth and leads all training, talent acquisition and career development activities.



Dr Max Padberg*
Chief Financial Officer

Develops Armacell's strategic choices through capital structure optimisation, management of financial resources, taxation and risk, and efficient capital utilisation; also responsible for controlling, accounting, legal and IT.



Patrick Mathieu*
Chief Executive Officer

Sets and executes Armacell's strategy in making the company a global leader in energy efficiency around the world.

* Member of the Management Board


Norman Rafael

Chief Corporate Development & Investor Relations Officer

Develops and implements Armacell's external growth strategy, positions the company with possible takeover candidates and international investors, and heads corporate and marketing communications.


Guillaume Huguen

Vice President EMEA

Leverages his industry, raw material and pricing know-how to build customer relationships where Armacell is appreciated as a trusted and reliable partner.


Bart Janssen

Vice President Engineered Foams & Energy

Drives and implements the strategic development of the PET, Component Foams and Energy businesses, with a strong focus on nurturing the sustainability of product lifecycles.


Malte Witt

Vice President APAC & Chief Marketing Officer

Strives to strengthen Armacell's position and increase market shares in the Asia-Pacific region; also responsible for creating a customer-centric culture.

Armacell's executive team comprises nine highly experienced international managers representing six nationalities and a diverse set of skills. Their common purpose is to drive the company's future growth by driving innovation, encouraging commitment and promoting entrepreneurship.

STRATEGY

At Armacell, we continuously invest in the expansion of our production capacities and focus on creating sustainable value for our highly diversified global customer base. **Our vision is to be the global leader in providing innovative, technical insulation solutions and components to save energy and make a difference around the world.** We have a long track record of growth, superior profitability and cash generation orchestrated by a proven management team who have positioned Armacell as the trusted partner in the energy conservation market.

1 GROWTH

Armacell has become the global leader in flexible foams by enabling energy efficiency for technical equipment. We operate in the equipment insulation market (for hot, cold and ambient temperatures) estimated to be worth €12 billion and provide innovative solutions across a range of proprietary materials. Driven by global megatrends, we pursue a multi-pillar growth strategy and target to grow at approximately 10% p.a. Since 2015, on average about half of this growth target originated from external growth opportunities (M&A). The organic growth rate of our insulation business is approximately 5% p.a. Overall, we grow our markets, increase in both volume and value terms our share of the markets we operate in and drive the adoption rates for intelligent, energy-saving solutions.

2 RESILIENCE

Armacell's strategic development is at the heart of five global megatrends. Our exposure to a broad range of end markets together with our diversification across equipment verticals provides a vast spectrum of growth opportunities and make us resilient through economic cycles. Our asset- and capital-light business model provides us with the flexibility to swiftly adapt to changing economic environments in order to safeguard and maximise shareholder value.

3 MULTI-MATERIAL

Armacell is a multi-material and multi-product company operating a successful track record of expanding into adjacent technical insulation sectors. In recent years, we have continuously extended the temperature range and application horizon of our materials. With the addition of our PET foam core technology based on recycled post-consumer PET and the development of our proprietary next-generation aerogel technology, we have extended our core insulation business and aim to increase our addressable market size from €6 billion today to €12 billion in future.

4 INNOVATION

For more than half a century, our global customers have recognised Armacell as the industry and technology leader. Innovation and entrepreneurship are an integral part of our DNA. We drive industry-leading solutions and aspire to launch new technologies using alternative resources or natural feedstock. Our dedicated teams continuously develop our intellectual property portfolio and have more than doubled the number of patents over the last five years.

5 EXCELLENCE

Our world-class standards in combination with our pioneering technologies protect our market leadership. Armacell provides energy-efficient solutions offering reliable, certified performance and extended lifetime to its global customers. 24 manufacturing facilities in 16 countries and sales offices in many more are governed by the World-class Armacell Mindset (WAM). Through our WAM Manufacturing and WAM Sales & Marketing excellence programs, we have been delivering operating efficiency, customer service and execution excellence since 2012.

6 FINANCIAL STRENGTH

Armacell's financial strategy drives dynamic growth. Our low capital intensity and high cash conversion coupled with flexible financing pillars enable us to deliver best-in-class profitability levels in favourable or challenging market conditions. Armacell's continuous development to achieve world-class standards ensures optimal use of raw materials, natural resources and energy, thereby safeguarding maximum operational efficiency and the lowest possible production costs.

ARMACELL INDEX – OUR GLOBAL ORGANIC GROWTH BENCHMARK

The Armacell Index is the company's organic growth benchmark which we target to outperform year in, year out. This index was launched in 2014 and today approximates Armacell's global application and geographic business mix. Following the introduction of the Armacell Index to the reading audience in 2017, we continue to disclose the performance of the Armacell Index on a historical basis.

Since inception, average annual growth of the Armacell Index was 4.0% at group level. Over the same period, the Advanced Insulation (AI) index grew 4.0% and the Engineered Foams (EF) index 4.0%. Within Engineered Foams, the Component Foams index increased by 2.3% and the PET index by 7.6%. The higher compound annual growth rates (CAGR) compared to last year are principally driven by a stronger contribution from HVAC in AI and by a globally accelerating PET business in EF.

The Armacell Index chart exhibits the contribution of Advanced Insulation and Engineered Foams to the group growth.

The Armacell Index excludes the substitution effect and is built using trusted, independent third-party providers of construction, GDP, HVAC, general industrial output, refrigeration, transportation and wind capacity data.

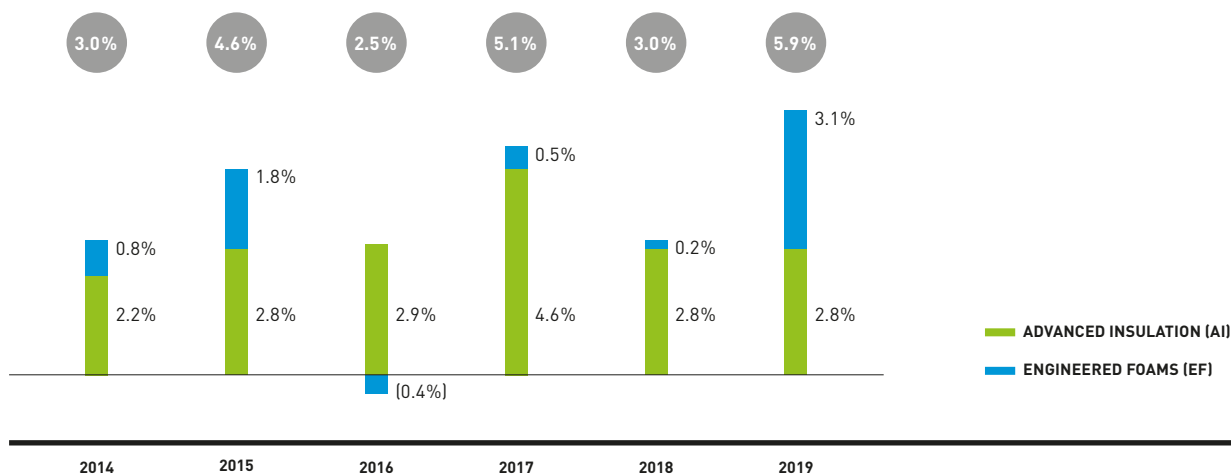
Data

The Advanced Insulation index uses the latest raw data from construction (residential and non-residential), HVAC, and refrigeration at a country-level, while the Engineered Foams index uses the latest raw data from GDP forecasts, wind capacity and transportation.

Weighting

The weighting of each end market application, which varies by geography/country, is based on historical and latest-available business mix. The geographical weighting is based on latest available net sales contribution by country.

2019 ARMACELL INDEX



GLOBAL PRESENCE

1

CORPORATE HEADQUARTERS

3

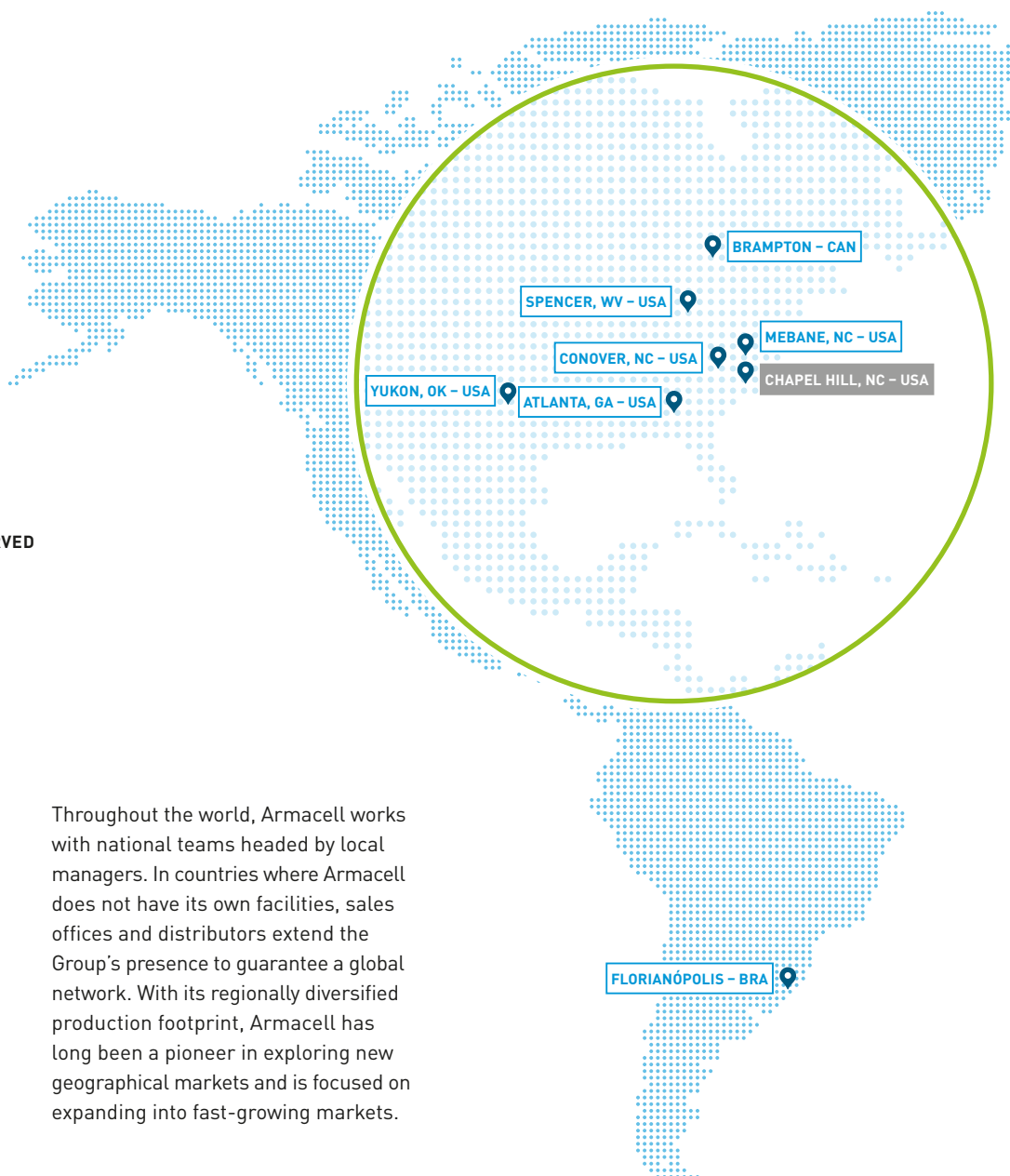
REGIONAL HEAD OFFICES

24

MANUFACTURING FACILITIES

100+

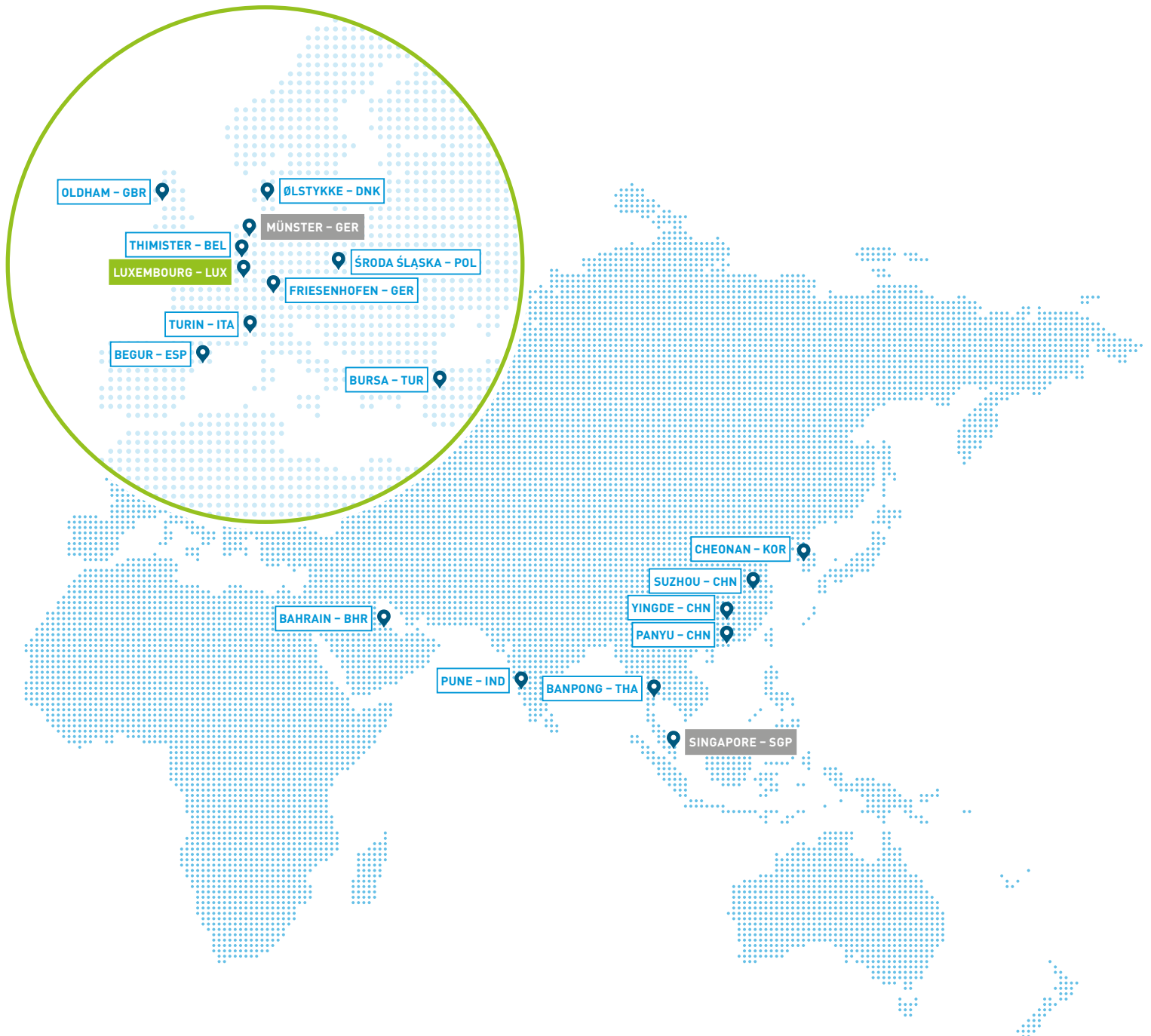
COUNTRIES WHERE CUSTOMERS ARE SERVED



Global presence, local focus

Armacell is a truly global company managed from its corporate headquarters in Luxembourg and regional head offices in Germany, the USA and Singapore. Four product innovation centres spread around the world ensure a steady supply of pioneering innovations to meet customer and market requirements. To ensure a customer-centric product portfolio, Armacell customises its products locally at 24 manufacturing plants in 16 countries.

Throughout the world, Armacell works with national teams headed by local managers. In countries where Armacell does not have its own facilities, sales offices and distributors extend the Group's presence to guarantee a global network. With its regionally diversified production footprint, Armacell has long been a pioneer in exploring new geographical markets and is focused on expanding into fast-growing markets.



OUR ESG COMMITMENT

Our environmental, social and governance (ESG) commitment is linked to the strategic sustainability concept of the triple bottom line: People-Planet-Profit. In 2019, we focused on four areas of commitment: **driving growth, putting employees first, protecting our planet** and **fostering local communities**. As a result, we were able to make a sustainable difference around the world and took an important step towards our goal of reporting in line with international ESG standards.

// CORPORATE GOVERNANCE

Corporate Governance focuses on human rights, fair practices, consumer-related topics, labour practices (workplace conditions and relations) as well as involvement in local communities and the protection of our environment. The governance principles upheld at Armacell safeguard ethical conduct, compliance with legislation and human rights, accountability, and the prioritisation of stakeholder interests and dialogue. Guidelines including Armacell's Code of Conduct as well as international memberships and local partnerships support the implementation of the company's corporate governance and our four areas of commitment.

CORPORATE GOVERNANCE

- Human rights
- Anti-corruption
- Environmental topics
- Fair practices
- Consumer-related topics
- Labour practices
- Local community activities



// UN GLOBAL COMPACT

Responsible and ethical conduct is fundamental to the way we do business. Our accountability and commitment to a better and cleaner future date back to 2006 when we joined the UN Global Compact (UNGC) initiative.

// CODE OF CONDUCT

Our Code of Conduct governs the framework for our employees to establish a positive, customer-centric culture and expresses our compliance with the laws and regulations applicable in every country where we do business.

// INITIATIVE AND ALLIANCES

Armacell works across multiple initiatives and alliances to promote sustainability and more efficient use of energy in buildings that account for over a third of global CO₂ emissions.

ARMACELL'S FOUR AREAS OF COMMITMENT



1

DRIVING GROWTH

The pillars of sustainable growth at Armacell are our commitment to the highest product quality and innovations that consume resources responsibly and green our product portfolio.

Product quality

- Durable raw material quality and processes
- World-class Armacell Mindset (WAM)
- ISO 9001 certifications
- Product testing

Innovation

- Employee engagement
- Roadmap



2

EMPLOYEES FIRST

We prioritise our employees' health and safety by engaging in an interactive dialogue to ensure good working conditions, enable training, enhance well-being and improve the work-life balance.

Health & Safety

- Health & Safety goals and measures
- Training

Internal dialogue

- Working conditions
- Well-being
- Work-life balance



3

PROTECTING OUR PLANET

Our energy-saving products and solutions, our efforts to boost the circular economy, better resource management and multiple environmental initiatives, we are helping to protect our planet.

Resource management

- Environmental goals and measures
- Reduction of energy consumption and CO₂ emissions
- Waste management

Recycling plastic

Plant certifications

- ISO 14001, ISO 50001



4

FOSTERING COMMUNITIES

In 2019, the Armacell family donated time and energy to their local communities to help children and the elderly. As a company, we facilitate and fully encourage our employees' volunteering efforts.

Support local communities

- Helping children
- Caring for people
- Donating time and money

Support global communities

DRIVING GROWTH



Product quality and innovation are driving sustainable growth

In 2019, we continued to invest in product quality and innovation. Consistent raw material quality and processes, our World-class Armacell Mindset (WAM) program, product testing and plant certifications ensure compliance with the highest product standards. Our innovations deliver solutions in response to global megatrends: development of flexible foam systems preventing corrosion under insulation, development of low-smoke elastomeric foams, development of green structural core foam from recycled PET bottles, and use of alternative raw materials.

Quality management

30,000

individual quality tests performed in 2019 in four different categories

R&D

€30

million invested in research and development over the past three years

Innovative leadership

300+

active patents in 50 patent families – evidence of our innovative strength

SOLUTIONS FOR MEGATRENDS

Armacell’s energy-saving and noise- and vibration-attenuating solutions are principally addressing six global megatrends.



ENERGY EFFICIENCY



GLOBALISATION OF FOOD SUPPLY CHAIN



URBANISATION



LIGHTWEIGHTING



ACOUSTIC COMFORT AND VIBRATION CONTROL



SUSTAINABILITY

EMPLOYEES FIRST



Prioritising health, safety and training

We create safe and healthy working environments for our employees, so they go home to family and friends as fit and well as they arrived at work. We are dedicated to developing the capabilities and competencies of our people through internal and external training programs. We are committed to ethical behaviour based on our Code of Conduct and global anti-corruption, anti-money laundering and sanctions policies. People matter to us.

Workforce

3,135

employees on
31 December 2019
(+12% compared to 2015)

Staff diversity

70+

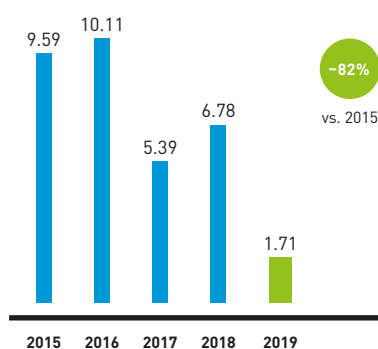
nationalities working
at Armacell sites
around the world

Safety at work

44%

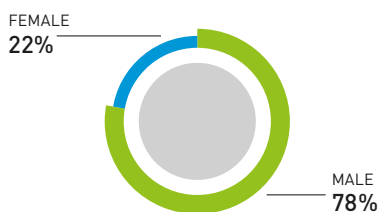
less lost-time accidents
(LTA) recorded compared
to 2015

GRAVITY INDEX OF LTA*

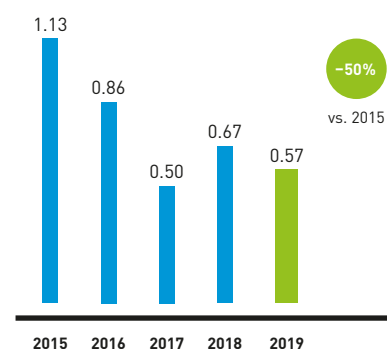


* Number of lost workdays per 100,000 working hours

GENDER DIVERSITY



MEDICAL TREATMENT FREQUENCY INDEX*



* Number of accidents with absence from work of ≤1 day per 100,000 working hours

PROTECTING OUR PLANET



Saving resources and enhancing energy efficiency

Armacell products and solutions improve the management of finite resources by reducing energy consumption and CO₂ emissions. We give waste plastic bottles a second life and convert them into long-lasting, high-value foam core materials. 15 of our plants operate environmental management systems certified to ISO 14001:2015 or ISO 50001:2015.

Climate-friendly

33x

fewer CO₂ emissions through manufacturing products using recycled PET flakes

Saving energy

140x

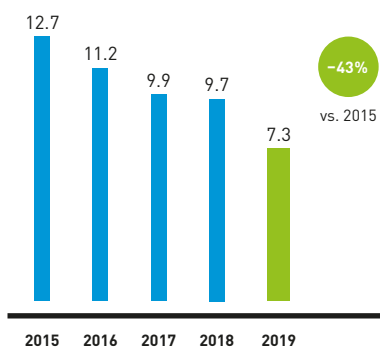
more energy saved in an ArmaFlex® product lifetime than required to manufacture it

Recycling waste

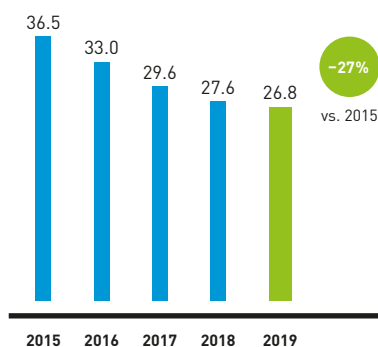
+26%

of production-related waste recycled over the past three years

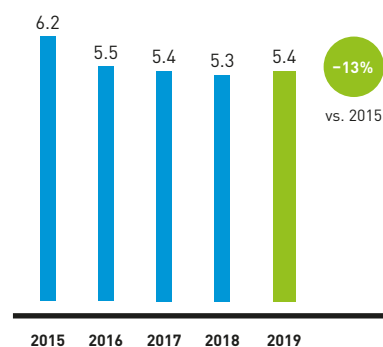
WATER CONSUMPTION* in l



ENERGY CONSUMPTION* in MJ



CO₂ EMISSIONS* in kg



* per metric ton of finished goods

FOSTERING COMMUNITIES



Donating time and energy around the world

In well over a hundred countries that Armacell operates in, our employees are working to improve the quality of life in their local communities. Through their volunteering activities, which the company facilitates and encourages, Armacell employees are primarily helping and caring for children and the elderly or supporting cancer charities.

Global Armacell Day

2,000

Armacell employees worldwide engaged in charity activities

Community involvement

100+

countries we do business in and support local communities

UN Global Compact (UNGC)

10

principles of the UNGC we follow to support local communities



Serving the underprivileged at the General Social Welfare Centre in Cheonan, South Korea.

Building homes for those in need – in the USA, Armacell partnered with Habitat for Humanity.



Helping children – the ArmaRunners supported the Polish Fundacja Everest foundation.

FINANCIAL RESULTS

- // Net sales and adjusted EBITDA at all-time high
 - // Adjusted EBITDA margin reached a record 20.7%
 - // Significant strategic investments over the past years contributed positively to 2019 financial results
 - // Expansion of the Group's competitive position across all regions, confirming position as technology leader
 - // Multi-material and multi-product company with diversified and resilient global business model
 - // Rating agencies confirmed corporate and instrument ratings post acquisition by PAI Partners and KIRKBI
 - // 2019 characterised by record cash flow and substantial reduction of leverage
- 

KEY FINANCIAL FIGURES

in € million	2015	2016	2017 ⁹	2018	2019 ¹⁰
Income statement¹					
Net sales	540.2	558.6	600.3	610.3	644.4
Adjusted EBITDA ²	95.5	100.4	103.8	106.0	133.5
Adjusted EBITDA margin	17.7%	18.0%	17.3%	17.4%	20.7%
Adjusted EBITA ³	78.8	82.4	84.8	86.4	102.7
Adjusted EBITA margin	14.6%	14.8%	14.1%	14.2%	15.9%
Non-recurring items	12.4	11.9	5.8	19.6	9.8
EBIT	40.7	37.4	43.8	28.6	56.0
Cash flow¹					
Adjusted cash flow from operating activities ⁴	73.1	83.7	83.9	94.3	129.1
Investments (excluding acquisitions and license agreement)	28.4	25.7	41.0	46.0	44.3
Adjusted free cash flow ⁵	45.5	58.0	43.4	48.9	85.6
Balance sheet¹					
Current assets	187.6	191.0	210.5	252.8	265.2
Non-current assets	564.8	981.3	966.0	978.9	1,020.6
Current liabilities ⁶	106.4	145.8	132.4	184.6	1,272.7
Non-current liabilities and equity ⁷	646.0	1,026.5	1,044.1	1,047.1	13.1
Net debt – excluding shareholder loans¹					
Economic equity ⁸	96.7	306.5	276.4	253.4	249.5
Net debt	391.6	552.6	603.5	623.3	621.4

NOTES

¹ Consolidated financial statements for 2016 were prepared for Armacell Holdco and included ten months of Armacell Group activities in 2016.

² Adjusted for non-recurring items.

³ Adjusted for non-recurring items and asset impairments.

⁴ Adjusted for non-recurring items, depreciation and interest expenses on lease.

⁵ Adjusted for depreciation and lease interest expenses.

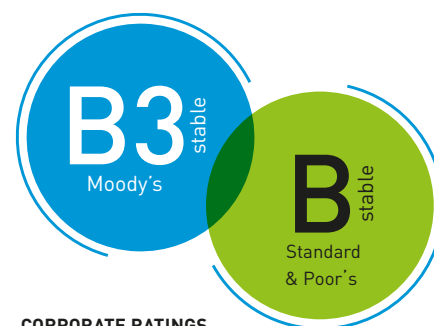
⁶ Includes borrowings and liabilities due to shareholder due in short notice following the change of Group ownership.

⁷ Non-current liabilities decreased following the change of presentation of borrowings and liabilities due to shareholders (see also note 8).

⁸ Includes shareholder loans.

⁹ Adjusted for expenses related to closure of operation.

¹⁰ IFRS 16 applied since 1 January 2019.



REPORTING STRUCTURE

On 4 December 2019, private equity funds managed by PAI Partners and KIRKBI Invest A/S agreed to acquire Armacell International S.A. The transaction closed on 28 February 2020.

The financial figures for 2019 include 12 months of the operating activities of the Armacell International S.A. (Armacell or Armacell Group).

Armacell operates two main businesses: Advanced Insulation and Engineered Foams.

ADVANCED INSULATION

The Advanced Insulation (AI) division provides flexible foam insulation solutions for the insulation of technical equipment utilised for the transport of energy. Typical applications include heating, ventilation and air conditioning (HVAC), heating and plumbing (H&P), refrigeration, industrial, energy, commercial and residential infrastructure as well as acoustics.

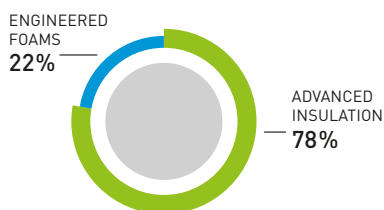
This principal value creation of the AI division is the co-design of energy-efficient installations and is managed across three regions: Europe, the Middle East and Africa (EMEA), North and South America (AMERICAS), and Asia Pacific (APAC).

ENGINEERED FOAMS

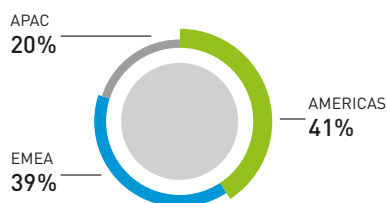
The Engineered Foams (EF) division develops and produces custom-made high-performance and lightweight foams used across a broad range of end markets, including wind energy, transportation, infrastructure, industrial and sports and leisure.

Consisting of environmentally friendly structural PET foam cores and component foam solutions, i.e. engineered elastomeric and polyethylene foams as well as cross-linked polyolefin foams, the principal value creation of the EF division is the customisation of physical properties of semi-finished and finished components sold to converters and OEMs.

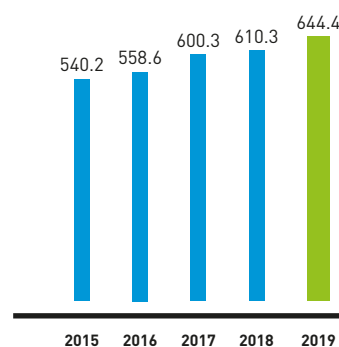
NET SALES BY BUSINESS DIVISION



NET SALES BY REGION



NET SALES in € million



OUTLOOK

As of January 2020, the IMF World Economic Outlook predicted the global economy to grow by 3.3% in 2020 following 2.9% of growth in 2019. Over the next few years, the world economy was expected to expand at a more moderate pace than in previous years. U.S. GDP growth was predicted to slow to 2.0% in 2020 from 2.3% in 2019. Growth in the eurozone was forecast at 1.3% for 2020. Growth in Asia's emerging and developing markets was expected to increase from 5.6% in 2019 to 5.8% in 2020.

OUTLOOK GDP growth in %

	2019	2020	2021
Global Economy	2.9	3.3	3.4
Brazil	1.2	2.2	2.3
Canada	1.5	1.8	1.8
China	6.1	6.0	5.8
Euro Area	1.2	1.3	1.4
India	4.8	5.8	6.5
Russia	1.1	1.9	2.0
USA	2.3	2.0	1.7
Middle East & North Africa	0.8	2.8	3.2

Source: IMF World Economic Outlook, January 2020

The IMF outlook may be affected by the trade war between China and the USA, possible conflicts in the Middle East and the Persian Gulf, the UK exiting the trade zone of the EU, and a softening of the U.S. dollar.

The magnitude of the Covid-19 effect and its implications on the global economy will become fully visible in the second half of 2020, and may lead to significant declines of GDP growth rates across the globe.

In OECD countries and a number of emerging markets, a growing public awareness of climate change is driving the increasing use of renewable energies and enhanced energy efficiency. For example, the European Union has committed itself to reducing CO₂ emissions by 80–95% by 2050 compared to 1990 levels.

Armacell views renewed environmental consciousness and sustainability as a secular trend with a long-term, positive impact on our business. Insulation materials are regarded as the most efficient way to save energy. As a result, Armacell grew well above market growth rates in recent years and is expecting to benefit from this continuing trend. Changing energy policies and regulatory frameworks enhance Armacell's opportunities to grow market segment shares across its business.

Following a period of strengthening raw material prices over the last two years, Armacell anticipates a flat price development for most of 2020. Historically, we have been successful at implementing price increases across our business to mitigate accreting raw material and freight costs. At Armacell, we continue to rigorously monitor potential pricing fluctuations in order to proactively respond with the appropriate measures. The current trading environment may see a prolonged period of commodity price moderation in 2020, which may be subject to stronger volatility once businesses ramp up in the second half.

Continuous operational improvement programs throughout the Group are set to further enhance manufacturing performance. Following the implementation of the marketing and sales excellence plan (WAM Sales & Marketing), the Group targets to outperform market growth by participating in its base market growth, substituting legacy material and entering new geographies, new markets and product applications, both organically and through external growth (M&A).

// CONSTRUCTION

In Europe, the process of infrastructure development will be instrumental to future growth, with new strategic projects as well as with upgrades and maintenance of the existing network. In the USA, the construction sector exhibited a healthy improvement, albeit some home builders were pressured with a shortage of construction workers and higher material prices. In Asia, infrastructure projects remain the engine of the region's construction growth, and are expected to grow at a lighter pace going forward.

// TRANSPORTATION

In the medium term, the transportation industry expects the current trends towards lightweighting, electrification and sound attenuation to accelerate. Fuel efficiency standards are driving the requirement for lightweight platforms and components. The absence of combustion engines in electrical vehicles (EVs) increased the demand for additional noise insulation by a factor of three to five in value terms.

// WIND

In 2019, the wind market installed 60.4 GW of new capacity reaching a total installed wind capacity of 650.6 GW at the end of the year. GWEC forecasts new installations at approximately 65 GW for 2020 (including a full year Covid-19 effect of approximately minus 15%). The main volume is expected from mature regions in Europe and the USA, with significant growth forecast from the developing markets in China, Southeast Asia and the global offshore market.

In addition to the growth initiatives implemented in the Advanced Insulation business aimed at strengthening our position as a global leader in advanced material technologies, the Group foresees multiple growth opportunities in the Engineered Foams business division. While the substitution rate of legacy materials by PET continues to accelerate, Armacell will continue to broaden its customer base and its applications in the technical foams market, with a focus on the transportation and the industrial market segments.

Driven by our Innovation team, Armacell strives to strengthen its position as the technology leader and identify cross-regional opportunities for innovative products and technologies. New product recipes allow the replacement of raw materials and should reduce price dependencies significantly. In addition, Armacell is investing in new technologies to expand the temperature range of its products, enlarge its product portfolio and provide its customers with one-stop shop opportunities. These efforts will be accompanied by further productivity improvements.

Armacell expects greater diversification of group sales, enlargement of the addressable market and continued cost improvements.

GROUP PERFORMANCE

NET SALES AND PROFIT

In 2019, Armacell achieved **net sales** of €644.4 million, an increase of 5.6% vs. 2018 (€610.3 million). This performance was driven by price and volume growth in the Advanced Insulation business as well as by the fast-growing global PET business. Net sales of €225.2 million were generated by Advanced Insulation EMEA (2018: €210.4 million), €162.7 million by Advanced Insulation AMERICAS (2018: €157.8 million), €114.3 million by Advanced Insulation APAC (2018: €110.6 million) and €142.2 million by Engineered Foams (2018: €131.5 million).

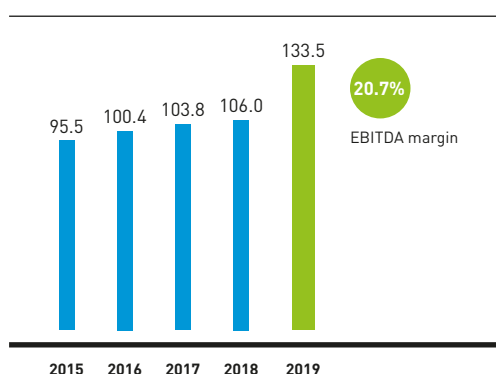
EBITDA excluding unusual items grew to €133.5 million (2018: €106.0 million). All businesses contributed to this positive development, and the adjusted EBITDA margin reached 20.7% (2018: 17.4%). The adoption of IFRS 16 added €12.0 million to the adjusted EBITDA figure in 2019. Unusual items decreased compared to prior year and were €9.8 million (2018: €19.6 million), mainly relating to restructuring, buyout and geographical footprint charges. Adjusted **EBITA** was €102.7 million (2018: €86.4 million) with an EBITA margin of 15.9% (2018: 14.2%).

INVESTMENTS AND CASH FLOW

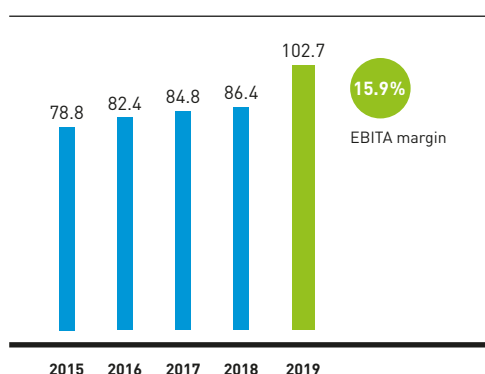
In 2019, Armacell continued to generate strong operational cash flow and at year-end maintained a **cash balance** of €74.5 million (2018: €57.9 million). Besides the cash on hand and cash flow, the most important source of liquidity available was the revolving credit facility with a total volume of €100 million. This facility was drawn by €0.6 million (2018: €26.6 million) at year-end 2019.

In the reporting period, the adjusted **cash flow** from operating activities amounted to €141.1 million before income tax (2018: €94.3 million). Cash outflows were primarily related to significant investments into our properties, plants and equipment. The majority of the investing activities is related to investments into the new ArmaGel™ production line in South Korea and to the extension of new PET production lines in China.

ADJUSTED EBITDA in € million



ADJUSTED EBITA in € million



BALANCE SHEET

As of 31 December 2019, total **assets** were €1,285.8 million (2018: €1,231.7 million).

Non-current assets equated to €1,020.6 million (2018: €979.0 million) and included intangible assets of €252.7 million (2018: €282.7 million), property, plant and equipment of €279.5 (2018: €215.4 million) as well as goodwill of €479.2 million (2018: €470.5 million). Other intangible assets principally include customer lists, know-how, patents, trademarks and brands. With the adoption of IFRS 16, property, plant and equipment values increased versus prior year. Additional non-current assets were derivatives assets, deferred tax assets and other non-current financial assets. Current assets amounted to €265.2 million (2018: €252.7 million) and mainly consisted of trade receivables of €79.3 million (2018: €93.3 million), inventories including finished goods of €76.8 million (2018: €75.4 million) and cash and cash equivalents of €74.5 million (2018: €57.9 million).

As of 31 December 2019, non-current **liabilities**, excluding liabilities due to shareholders, equated to €236.3 million (2018: €793.7 million). The decrease versus the previous year is mainly due to the change of presentation of borrowings following the acquisition by PAI Partners and KIRKBI. The first lien debt is due at short notice. Non-current liabilities mainly consist of provisions for pensions and similar obligations of €105.5 million (2018: €83.8 million) and of lease liabilities of €39.8 million (2018: Nil).

Current liabilities increased compared to the previous year to €800.1 million (2018: €184.6 million), excluding liabilities to shareholders. These included borrowings amounting to €627.8 million (2018: €46.0 million). The short-term liquidity ratio is at 19.2% (2018: 81.9%) in relation to cash and cash equivalents and trade receivables of in total €153.2 million (2018: €151.3 million). The decrease versus prior year results from a change of presentation of borrowings following the change of ownership.

As of 31 December 2019, economic **equity capital**, including the preferred equity certificates of Armacell shareholders, amounted to €249.4 million (2018: €253.4 million). The share capital was €17.9 million, unchanged from year-end 2018. The subscription of 321,982,359 preferred equity certificates, each with a par value of €1, was utilised to finance the acquisition of Armacell Group. The yield on these preferred equity certificates is 10.5% p.a. The economic equity ratio is 19.4% (2018: 20.5%).

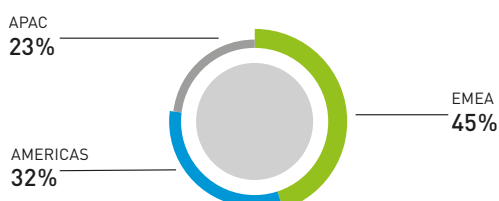
In total, €6.2 million of our first lien term loan was repaid in 2019.

BUSINESS PERFORMANCE

ADVANCED INSULATION

Armacell's Advanced Insulation (AI) division increased its net sales to €502.2 million in 2019 (2018: €478.8 million). AI generated 78% of Armacell's total net sales in 2019.

ADVANCED INSULATION NET SALES BY REGION



Advanced Insulation EMEA

The European economy grew by 1.2% in 2019 with Germany, France, the UK and Italy recording growth rates below 1.4% and the Nordic countries above 1.5%. Europe's emerging countries grew by 1.8% in 2019 with Turkey recovering from recession in the second half of 2019.

Net sales of Advanced Insulation EMEA increased by 7.0% to €225.2 million in 2019 (2018: €210.4 million). Excluding the effects of FX, the growth rate was 7.1%. Armacell's top-line growth rate was hence well above the growth rate of GDP and the wider construction market in the region. This strong performance was principally driven by volume and price increases with a strong development in North and Central Europe as well as on the Iberian Peninsula offsetting softer net sales in Turkey and the Middle East.

Advanced Insulation

502.2

€ million net sales

KEY FIGURES – AI EMEA

in € million	2017	2018	2019
Net sales	205.0	210.4	225.2

Advanced Insulation AMERICAS

The U.S. economy grew by 2.3% in 2019. Despite trade-related uncertainty, employment and consumption continued to be robust, buoyed by policy stimulus. Canada saw a growth rate of 1.5% in 2019. Central and South America achieved moderate growth rates, while economies such as Argentina, Chile and Venezuela witnessed either economic contraction or political unrest.

Net sales of Advanced Insulation AMERICAS rose to €162.7 million in 2019, an increase of 3.1% (2018: €157.8 million). Excluding the effects from a recovering U.S. Dollar, the region's growth was flat for the year driven by strong volumes in the U.S. HVAC, OEM and distributor channels and increased sales prices passing on higher material costs.

KEY FIGURES – AI AMERICAS

in € million	2017	2018	2019
Net sales	151.2	157.8	162.7

Advanced Insulation APAC

Emerging and Developing Asia Pacific remained the main engine of the world economy. GDP in China (6.1%), India (4.8%) and the ASEAN market (4.7%) were the key drivers of growth for the emerging and developing countries. Japan's GDP growth increased from 0.3% in 2018 to 1.0% in 2019, and South Korea's economy grew by 2.0% in 2019.

Net trade sales in APAC increased by 3.4% to €114.3 million (2018: €110.6 million) as a result of a favourable currency development and strong volume growth in China, Indonesia and Japan compensating for lower sales in some ASEAN countries.

KEY FIGURES – AI APAC

in € million	2017	2018	2019
Net sales	117.4	110.6	114.3

ENGINEERED FOAMS

Net sales from Armacell's Engineered Foams (EF) division increased by 8.1% to €142.2 million in 2019 (2018: €131.5 million). The majority of this growth was driven by a strong performance in the PET business based on double-digit volume growth in the wind markets in AMERICAS, APAC and EMEA. Excluding the effects from FX, EF growth was 4.2%.

KEY FIGURES – EF

in € million	2017	2018	2019
Net sales	126.7	131.5	142.2

Component Foams

Component Foams grew moderately mainly due to the investments to recalibrate and optimise the U.S. manufacturing footprint. Net sales grew by 1.0% to €90.3 million in 2019 from €89.4 million in 2018.

PET

Net sales from Armacell's PET business increased by 23.4% from €42.1 million in 2018 to €52.0 million in 2019. This strong growth was driven by the number of applications combining lightweighting and other performance parameters such as insulation, tensile strength, torsion stiffness, etc. in the wind, transportation and so-called general industry destination end markets. The increasing awareness of the benefits recycled PET (rPET) foams offer is reflected in the stronger net sales figures for each of these markets in almost every region around the world.

Europe remains the leading region with the USA and APAC catching up steadily. Demand in China is growing strongly, mainly in the wind market with China accounting for approximately one third of the wind turbines installed globally.

Apart from the fact that Armacell is approved by the majority of the global leaders in blade manufacturing, incremental diversification was generated in other destination end markets by adding new applications in transportation, infrastructure and general industry.

The expansion of Armacell's China manufacturing footprint with the addition of a PET slicing line in 2019 and a foaming line and warehouse in 2020 in Panyu, close to Shanghai, will further strengthen the PET business in APAC. Additional investments are in implementation to expand our PET hub in Thimister, Belgium in the years 2021 and 2022.

Engineered Foams

142.2

€ million net sales

CORPORATE GOVERNANCE

RISK MANAGEMENT

Armacell is exposed to various risks that are part and parcel of the entrepreneurial nature of its business. The potential sources of risk are continually monitored to identify and mitigate possible risks as early as possible.

Competition

There are significant barriers to entry in the flexible insulation and technical foam markets, particularly in view of the initial investment, process technology, know-how and intellectual property required, as well as the necessary penetration of distribution channels. The risk that new competitors may enter these mature high-end markets and gain material market shares is considered limited.

// INNOVATION

Armacell strategically invests in innovation to mitigate the risk of margin deterioration due to direct product competition. The Group's technology platform is one of its main competitive advantages, and through strong innovation efforts, Armacell expects further sales and profitable growth opportunities. Two factors are driving this growth: advancements in existing products and the launch of new products with characteristics that bring customers added value. Lighter and thinner, Armacell products – combining thermal and acoustic properties – allow customers to substitute other legacy materials and achieve a lower overall cost.

Armacell offers products developed with the latest technologies in premium segments and is in a position to continuously optimise its production costs. Nevertheless, Armacell is equipped to absorb ongoing price pressure and mitigates this risk through manufacturing cost optimisation and a clear focus on its customers' price, quality, availability and service requirements.

Strategy and business model

Armacell's insulation business depends to a certain degree on the performance of the equipment market in infrastructure and other industries. As Armacell operates in businesses that benefit from more stringent environmental laws, more industry-specific opportunities than risks are expected to emerge. Although stricter environmental protection requirements may necessitate plant modernisation measures in future, these regulations will also drive the demand for insulation products and positively impact the Group's earnings.

Demand in Europe, North and South America, and Asia plays an important role for Armacell's business. Product sales to the infrastructure and construction industry are sensitive to the general level of economic activity and taxation. Armacell is highly diversified across geographies and destination end markets. There are very limited risks arising from any potential over-concentration on individual markets.

Material risks relating to corporate strategy are considered low as Armacell is focused on diversified stable and long-term customer relationships. The top ten customers account for approximately 17% of net sales.

To mitigate risks, Armacell has introduced appropriate measures to align production capacity to the expected demand requirements. Armacell is continuously exploring and developing new and promising market opportunities, such as aerogel-based insulation, acoustic systems and solutions, accessories and the rPET foam core market for wind turbines or in lightweight transportation and industrial applications.

Operating performance

Armacell margins have proved resilient in recent years. Raw material price pressures are managed through the ongoing multiple-sourcing optimisation of recipes and cost initiatives. Armacell product prices can be increased at relatively short notice to pass on higher raw material costs. Competing products generally depend on similar raw materials. Armacell continuously invests to optimise its performance and improve the Group's long-term competitiveness in order to absorb potentially adverse price volatility in its raw materials.

Information technology

In line with most manufacturing peers, Armacell is exposed to risks arising from digital disruption relating to the information technology infrastructure. The continuity and safety of operations and information are managed by an IT Steering Committee, which pilots the central and local IT departments and ensures the compliance of our infrastructure and processes with Group policies and best risk management practices.

Financials

Armacell faces the typical liquidity risks of private equity financing: moderate interest charges and comparatively low equity ratios. Besides its partially drawn revolving credit facility, the Group can optionally access new financing sources for acquisitions or similar investments in the business. Armacell has implemented strong liquidity monitoring tools and the financial risks from customer receivables are considered to be low.

Armacell operates globally and its trading results are affected by foreign exchange rate volatility. The reported results are impacted by two different kinds of risk. Transactional risk arises from transactions denominated in currencies other than the functional currency of the subsidiary. In general, Armacell does not hedge its transactional exposure as the business is, to a large extent, naturally hedged as local sourcing and selling activities are usually in the same currency.

Translational risk arises upon consolidation of the Group results and relates to exposure from translating the financial statements of subsidiaries that use currencies other than the euro. Less than 30% of net sales are generated by entities with the euro as their functional currency, while the U.S. dollar accounts for about one third. Other relevant foreign currencies within the Group are the CNY, GBP, HKD and CAD.

The Group is exposed to interest rate risks from bank loans, mainly with variable interest rates. In 2019, our main source of financing was a €609.6 million term loan with an interest rate of Euribor+350bp. In addition, Armacell had access to a revolving credit facility of €100 million with an interest rate of Euribor+325bp. The Group hedges variable interest rate exposure with euro interest rate swaps that expire in 2020. The euro interest rate swap represents approximately 8% of the euro-denominated debt.

Since the change of Group shareholder structure on 28 February 2020, Armacell's main financing is based on a €710 million senior secured term loan with an interest rate of Euribor+350bp. In addition, Armacell has access to a revolving credit facility of €110 million with an interest rate of Euribor+300bp. All previously syndicated financial arrangements were replaced by the current financing facilities.

GROUP MANAGEMENT

The decision-making bodies of Armacell International S.A. consist of the individuals listed below. Responsible for the long-term success of the Group, they set the strategic goals, establish standards, and ensure compliance.

Supervisory Board

- Matthieu Paillat (Chairman)
- Laurent Rivoire
- Philipp Meyer
- Adrian Kalt
- Jacob Chris Lassen

Management Board

- Please refer to pages 28–29

Executive Management Team

- Please refer to pages 28–29

OWNERSHIP STRUCTURE

Since 28 February 2020, equity funds managed by PAI Partners have been Armacell's majority shareholder. The remaining shares are held by the holding and investment company KIRKBI and Armacell's senior management team.



About PAI Partners

PAI Partners is a leading European private equity firm with offices in Paris, London, Luxembourg, Madrid, Milan, Munich, New York and Stockholm.

PAI manages €13.6 billion of dedicated buyout funds. Since 1994, the company has completed 71 transactions in 11 countries, representing over €50 billion in transaction value. PAI Partners is characterised by its industrial approach to ownership combined with its sector-based organisation. PAI Partners provide the companies it owns with the financial and strategic support required to pursue their development and enhance strategic value creation.

www.paipartners.com

About KIRKBI

KIRKBI is the Kirk Kristiansen family's private holding and investment company founded to promote a sustainable future for the family ownership of the LEGO brand through generations. KIRKBI's strategic activities include 75% ownership of the LEGO Group, 50% ownership of Merlin Entertainments and investments in renewable energy. The company's investment activities also

include significant long-term investments in companies such as ISS, Nilfisk, Landis+Gyr and Falck as well as real estate investments in Denmark, Switzerland, Germany and the UK.



www.kirkbi.com

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