ABOUT ARMACELL

As the inventors of flexible elastomeric foams for equipment insulation purposes, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. By enabling energy efficiency for equipment we validate our global leadership in flexible technical foams. We grow by providing valuable solutions offering reliable, certified performance. Our high-calibre employees make all the difference in generating added value for customers.

HALLEY VI ANTARCTIC RESEARCH STATION

Toughest possible weather conditions

Snow, ice, gale-force winds and temperatures down to –55°C: Conditions at Halley VI can hardly get any tougher. A crack in the ice shelf means the entire station has to be moved 23 km across the ice. This complex exercise requires new pipework, and Armallex equipment insulation materials are being relied on to prevent the pipes from freezing.

If you would like to see more of our projects, please turn to the WHERE chapter.
WHAT MAKES ARMACELL DIFFERENT

Our Advanced Insulation business focuses on insulation materials for technical equipment and other industrial applications. Typical applications are in heating, ventilation and air conditioning (HVAC), plumbing, refrigeration, oil and gas, commercial and residential construction, and acoustics. Our Engineered Foams business develops high-performance foams that are used in high-tech and lightweight applications, e.g. in the wind energy, automotive, transport, sports and leisure industries.
SOLUTIONS. ENABLING ENERGY EFFICIENCY.

// Facts and figures
Headquartered in Luxembourg with regional head offices in EMEA (Münster, Germany), the AMERICAS (Chapel Hill, North Carolina) and APAC (Singapore), Armacell is a global leader in flexible foams for the equipment insulation market and a leading provider of engineered foams. Now one of the world’s best known global brands for flexible technical insulation, Armacell generated total net sales of €558.6 million in 2016. Some 3,000 employees work at 25 production and administrative facilities in 16 countries on four continents. Armacell has 450 sales offices around the world, and the company’s international character is underpinned by 70 employee nationalities. A total of 410 active patents in approximately 60 patent families testify to the innovative skills of Armacell. For example, Armacell’s patented technology for recycling PET bottles to produce green foam is still unique in the industry.

// Technical leadership
Armacell’s product portfolio consists of flexible insulation products and mechanical equipment for the energy distribution market [Advanced Insulation] and technical foams for use in a broad range of end-user markets [Engineered Foams]. Ever since the invention of flexible closed-cell elastomeric foam insulation in 1954, Armacell has underlined its technical leadership in the insulation industry with a series of pioneering inventions. Today, with effective equipment insulation, a key factor in tackling global warming through a reduction in CO₂ emissions, Armacell can claim to be a global leader in energy efficiency. Armacell’s equipment insulation materials and mechanical equipment have a proven worldwide record as energy-efficient solutions that offer superior long-term thermal and acoustic efficiency at a lower overall installed cost.

»Armacell stands out from the competition through its reliable, high-quality thermal insulation solutions and innovative technology.«
Gu Shengqiang, General Manager, Zuocheng New Material Co. Ltd., China

140 x more energy saved in an Armaflex lifetime than required to manufacture it
410 active patents in different patent families
50,000 PET bottles recycled into foam for one wind turbine
ArmaFORM: Innovative and environmentally friendly PET-based foams used as structural core material in composite sandwich construction

Armaduct DL: Simpler and faster insulation installation, especially for lining HVAC air duct systems, through a combination of excellent thermal and acoustic insulation properties

Aerogel: Excellent insulation and temperature resistance at half the material thickness from silica aerogel blankets

INNOVATIVE PRODUCTS AND SOLUTIONS
Armacell has many innovative products and solutions. This is only a small selection of the recent achievements:

Ultima: A flexible elastomeric insulation specifically designed for HVAC systems, and the first to achieve a Euroclass B1/s1,d0 rating

ArmaComfort: Highly effective, easy-to-install noise control materials with very thin wall thicknesses; acoustic solutions are a key pillar of Armacell’s product portfolio

ArmaFORM: Innovative and environmentally friendly PET-based foams used as structural core material in composite sandwich construction

Armaduct DL: Simpler and faster insulation installation, especially for lining HVAC air duct systems, through a combination of excellent thermal and acoustic insulation properties

Aerogel: Excellent insulation and temperature resistance at half the material thickness from silica aerogel blankets
INVESTING IN QUALITY

// High-tech products

Closed cell structure: Minimises moisture penetration to ensure long-term corrosion protection.

High water resistance: Enables stable thermal conductivity to guarantee that the surface temperature remains above the dew point even after many years of operation.

Low thermal conductivity: High energy-saving performance through premium materials and approximately 100 different recipes in mixing.

Fire and smoke performance: First flexible technical insulation with ultra-low smoke density – ten times less smoke development than standard elastomeric products (Armaflex Ultima).

Sound attenuation: High noise absorption properties across the entire relevant frequency range for acoustic applications (ArmaSound).

// Prioritising research and development

Armacell’s ongoing record of product innovations results from a continuous commitment to research and development (R&D), with approximately €9 million p.a. invested in R&D projects across the Group. Some 152 new patents granted in ten different patent families in 2016 are evidence of the success of Armacell’s investment in R&D, which is directed at improving existing products or bringing innovations to market. The focus is on three areas: product R&D, testing and laboratory work, and process technology.

The product testing facility in Germany conducts around 10,000 tests a year to maintain Armacell’s high quality standards and the regional R&D work conducted in the AMERICAS and APAC also strongly contributes to Armacell’s innovative record.

// Focused on quality

Our World Class Armacell Mindset program (WAM) sets standards for manufacturing and operations and ensures the ongoing, systematic optimisation of structures and processes – with the goal of achieving the highest possible quality standards combined with ultra-efficient production. That strengthens Armacell’s industry leadership and financial operating performance, as well as improving workplace safety – as is evidenced by an 83% reduction in accidents with more than one day of lost time from 2012 to 2016.

At Armacell Benelux in Thimister, Belgium, two production lines manufacture the company’s green foam product entirely from recycled PET bottles – in a unique, patented process.

2.5/sec.
recycled PET bottle consumption on each foaming line
Simplified Manufacturing Process

1 Mixing Silo: Raw material, 20 to 25 ingredients
2 Kneader and Compounder: Kneading of mixed raw material and strip cutting
3 Extruder: Strip feeding and extrusion of tubes or sheets
4 Oven: Expansion, cooling and curing
5 Cooling Line: Final cooling of tubes or sheets
6 Packaging and Logistics: Cutting, labelling and packaging
GLOBAL. PASSIONATE.
CUSTOMER-CENTRIC.

// Globally diverse
Nearly 3,000 employees, 25 sites, 16 countries, four continents: Armacell is a truly global group with an internationally diverse workforce comprising nine nationalities in the Executive Management Team and 70 different nationalities amongst staff worldwide. Dedicated and professionally-minded employees with an entrepreneurial spirit are Armacell’s greatest asset; yet despite this diversity they all share a common set of core values: customer experience, commitment, empowerment and accountability, integrity and sustainability.

// Core values
At Armacell our customer-focused culture creates a much-valued customer experience. We are committed to developing and motivating our employees, nurturing their talents and furthering new skills. Our employees are empowered with operational responsibility on the basis of mutual respect and trust. And integrity for us means that ethical and responsible conduct determines the way we do business – with a focus on sustainable growth. A Code of Conduct based on these five core values is the benchmark against which all our business activities are evaluated. This Code describes how these values are put into practice and defines the rules for our daily work – to the benefit of all our stakeholders and customers.

// Employee development
As an employer whose focus is on the well-being of all our employees, we offer a wide range of opportunities for further education and vocational training as part of our corporate responsibility towards our people. And we do our best to create a positive working atmosphere at all our sites.

17% increase in workforce in 2016
70 nationalities working at Armacell worldwide
2,870 employees on 31 December 2016
»Armacell is still relatively small in size but a globally operating, multinational company. This allows me to gain a macro-view of organisational structure and learn to work in an international company.«

Charis Mah, Human Resources, Singapore

With approximately 3,000 employees around the world, Armacell is a global company where every individual makes a difference.
IT MOTIVATES ME TO SEE HOW MY COLLEAGUES ADAPT IDEAS, TURN ONE INTO THEIR OWN PROJECT AND ARE COMPLETELY PASSIONATE ABOUT IT.«

Thomas Kessel, General Manager, PET Foam Division, Belgium

ENGAGING TO GET BETTER.

Getting better every day
The passion seen in the PET foam team is evident throughout the Armacell Group, not least in the learning culture that motivates people to develop their skills in measures such as the World Class Armacell Mindset programme (WAM). WAM Manufacturing, for example, helps to maintain consistently high standards and sustain the implementation of improved processes; WAM Sales & Marketing Excellence focuses on generating added value for customers. The common denominator in these first two WAM programmes is the desire of all the employees involved to get better and better every day.

Training courses
The skills Armacell employees acquire are passed on to schools, insulation contractors, specifiers, engineers and installers in practical seminars all over the world. In Germany, for example, Armacell supports industry-wide vocational training courses for apprentice insulators. In Kosovo and Macedonia, the technical seminars organised for customers have met with a very positive response. These seminars and training courses help to ensure reliable installation of Armacell products and enable committed employees to pass on the core values for which our company stands.

Customer focus
Services launched in 2016 reflect our commitment to enhancing the customer experience. The ArmaPlus Key provides customers during the design and specification phase with direct online access to all the relevant information about Armacell products. The ArmWin app was elected Product of the Year in the Apps for Engineers category by the US publication “Consulting Specifying Engineer Magazine 2016”, and a new blog launched by Armacell US is proving a valuable educational resource for all those who make, use or install products made with expanded foam materials.
I’m part of very exciting and inspiring development projects and really believe in our systems and solutions because our work is tailored to the needs of the oil and gas industry around the world.«

Nadine Wessel, Engineered Systems, Germany

»With Armacell I have the responsibility and am trusted to drive results by researching new technologies and opportunities to implement them in new product concepts and ideas.«

Kartik Patel, Process Technology, USA

»Our top management is committed to budgeting for the training and education of its employees and making Armacell a company that provides time and opportunities for individual development.«

Lani Liu, Controlling, Singapore

»Listening to customers and meeting their needs with the best-fitting products of the best quality: That’s what I work for every day and what makes Armacell a great service provider.«

Florian Kötter, Research & Development, Germany

»We care a great deal about continuously improving our products, guaranteeing quality standards and introducing competitive solutions into the market.«

Omar Martinez, Sheetline & Lamination, USA
// Planet health, human well-being
Urbanisation, the globalisation of food supplies, energy efficiency, acoustic comfort, lightweighting: five megatrends impacting on the health of our planet and its inhabitants – and all areas where Armacell’s energy-saving or noise- and vibration-reducing solutions are making a key difference.
Equipment insulation is an international growth market driven by urbanisation and the need for enhanced energy efficiency. In emerging economies, the booming infrastructure market is driving the demand for insulation materials. In mature economies, rising energy prices, stricter legislation, technological innovation and the associated substitution of legacy products are the motors of growth. With the demand for energy expected to rise by a third by 2035, effective insulation is a key factor in tackling climate change, as it is one of the simplest, fastest and most cost-effective means of improving energy efficiency. No other investment to tackle climate change pays off so quickly. The more urbanised societies become, the more people suffer from excessive noise and vibration – a stress our acoustic solutions can alleviate. And with around a third of food produced for human consumption lost along the food chain, effectively insulated cool chains not only prevent massive energy losses but also greatly reduce food waste. Last but not least, the lightweighting trend is driven by the desire for enhanced energy efficiency, e.g. reducing the weight of man-made machines to save energy.

// Making a difference worldwide
With a diverse range of products and markets that is unique in the industry, Armacell already supplies the products and solutions for around half the equipment insulation projects worldwide. In meeting the challenges of these megatrends, our product solutions stand out for functionality and ease of installation at low marginal cost – in facilities as varied as the Empire State Building, the International Space Station and the 35 trillion cubic feet Gorgon natural gas project in Western Australia.

> 70% of greenhouse gas emissions generated in cities

1/3 of global energy used in buildings

2050
Two out of three humans live in cities

»Over many years, we have built and maintained a trustful relationship with Armacell. With this partner we share common values, complement each other and move forward together.«
Bernard Vercaemst, CEO, IPCOM N.V., Belgium
EQUIPMENT VERTICALS

38% HVAC 23% HEATING & PLUMBING 9% TRANSPORTATION 8% REFRIGERATION 5% OIL & GAS 5% WINDMILL BLADES 4% SPORTS & LEISURE 3% CONSTRUCTION 3% SOLAR 2% OTHER

Source: company estimates
END MARKETS

Equipment insulation is our contribution to mastering the challenge of global climate change. Insulation is the most effective technology for enabling and enhancing energy efficiency of technical equipment when producing, transporting and storing energy in a non-electrical way. The five global megatrends outlined earlier together with our diversification across equipment verticals and end markets make our business resilient. Our equipment insulation solutions make a difference around the world every day.
Thermal, acoustic and thermal-acoustic insulation and mechanical protection solutions of certified quality for major onshore and offshore construction and maintenance projects; superior condensation control and protection against corrosion under insulation.

Insulation products primarily applied to heating and plumbing equipment as well as small HVAC ducts and systems, hot and cold water systems, acoustic and vibration solutions.

Mainly used in parts or components that require impact cushioning, flotation properties or lightness (e.g. wrestling mats and helmet paddings) as well as under sports turfs and floor underlays.

Insulation products used for duct systems in ships and trains; lightweight insulating materials with thermal and acoustic properties used in composite panels in trains, trucks and trailers.

Insulation solutions for the aerospace, medical, solar and other industries.
INSULATION IN ACTION. ICONIC PROJECTS.

// Wide-ranging applications
Armacell’s industry-leading position in the flexible foam insulation market is reflected in the use of its products in a wide range of iconic projects the world over – from a famous highlight like the legendary Empire State Building in New York or the eye-catching Paralympic Centre in Brazil to the mobile Halley VI Research Station in the icy waters of the Antarctic and the AIDA cruise liners that sail the Seven Seas.

// Where performance counts
Armacell products make a decisive difference in equipment insulation performance, especially in infrastructural engineering projects or demanding conditions. But it is not just high-quality performance that counts. The diversity of products Armacell offers and the breadth of markets covered give the company a unique standing in the industry – and make it the first port of call for iconic or challenging projects. Armacell’s comprehensive range of insulation products, systems and solutions is backed by the outstanding expertise and experience of its insulation specialists. In close collaboration with architects, engineers, specifiers and contractors Armacell’s specialists come up with customised solutions to each and every insulation challenge – as these projects prove.

»We chose Armacell because of their powerful product portfolio, industry leadership and strong sales coverage.«
Mike Eggers, Strategic Sourcing Director, Distribution International, Inc., USA

RUSSIAN ORTHODOX CATHEDRAL
Paris, France

Armacell provided PET foam core material to produce the five spectacular gilded domes of the recently inaugurated Russian Orthodox Cathedral in Paris. Two properties of this insulation material – its weight-reducing structural core and benchmark insulation performance – played a key role in enabling the architect Jean-Michel Wilmotte to realise an iconic design combining tradition and modernity.
PET FOAM CORE

Lightweight Polyethylene Terephthalate (PET) foams offer superior mechanical and tensile strength, residual flexibility as well as excellent fatigue properties in combination with low thermal conductivity and sound attenuation properties.

100% made of recycled PET bottles and 100% recyclable
INSULATION IN ACTION

AIDA CRUISE SHIP
Trusted insulation solutions on luxury liners

Over the years, the Meyer Werft in Papenburg, Germany, has built 37 luxury liners for discerning customers all over the world. When it comes to the insulation of chilled water and refrigeration pipes, the shipyard only trusts in Armacell products. AF/Armaflex and Armafix AF pipe hangers reliably prevent condensation and energy loss.

BRAZILIAN PARALYMPIC CENTRE
Thermal insulation in a hot, humid climate

The challenge in constructing the Paralympic Centre for the 2016 Olympic Games in São Paulo, Brazil, was to deliver long-lasting thermal equipment insulation in a hot and humid climate. Armacell provided the AF/Armaflex closed-cell insulation for the chilled water system in the complex because it prevents condensation and enables long-lasting energy savings.

ARMAFIX AF PIPE HANGERS
Pipe support systems that convince with a self-adhesive closure solution for easy bonding, a built-in vapour barrier and strong mechanical resistance parameters.

3
steps for a quick and simple professional installation

AF/ARMAFLEX CLOSED-CELL INSULATION
The unique closed-microcell structure makes this professional flexible insulation solution easy to install and combines built-in antimicrobial protection with excellent fire performance.

40
years of unrivalled reliable condensation control
DA NANG INTERNATIONAL AIRPORT
Energy-saving HVAC ducting system

Da Nang International Airport is one of Vietnam’s three largest airports and the venue for the APAC Summit from June to July 2017. The Airport has been expanded in preparation for this Summit and Armacell was chosen to supply Armaflex MC sheets and tubes for the HVAC ducting and central piping systems. This energy-saving, low-VOC product is dust-, fibre- and formaldehyde-free to eliminate air-stream pollution and Greenguard® GOLD-certified to meet the most stringent indoor air-quality requirements.

BP CLAIR RIDGE PLATFORM
Preventing corrosion under insulation

Armacell Engineered Systems has insulated the process pipes on the BP Clair Ridge processing platform, which will help to develop the largest undeveloped hydrocarbon resource on the UK Continental Shelf. The inclement conditions off the Shetland Islands mean process pipes need first-class thermal and acoustic (FEF) insulation to keep them at the right temperature and avoid corrosion under insulation. Armacell’s multi-layer insulation systems delivered the goods for BP.

ARMAFLEX MC
This flexible insulation foam based on closed-microcell structures and built-in condensation control offers advantageous thermal conductivity and is easy to install.

ZERO
CUI (corrosion under insulation) on copper and steel pipes

ARMACELL ENGINEERED SYSTEMS
The multi-layer insulation system designed for BP Clair Ridge keeps process pipes at specified temperatures, optimises site safety and prevents CUI (corrosion under insulation).

+125°C
to ambient is the temperature range at BP Clair Ridge

More information about our projects on our website
www.armacell.com
LETTER FROM THE CEO

Dear Friends of the Company,

The rise of Armacell from a regional company to a truly global player is a success story in human and economic terms. Although our international group is still relatively small in terms of size, we have a strong business model and can adapt to market volatility as well as technological or geopolitical change. Headquartered in Luxembourg, Armacell is making significant progress on an extraordinary journey that I am delighted and privileged to be part of.

Strong Business Model

We create genuine value for our customers, value them as partners, and are committed to developing equipment insulation solutions tailored to their requirements. The outcome is added value for end-users and, most significantly, energy savings and a longer working life for their critical equipment. Our strong business model is at the centre of five global megatrends: energy efficiency, urbanisation, food supply globalisation, acoustic comfort and lightweighting.

Armacell consequently drives energy efficiency through the substitution of existing insulation material, which increases the demand for its innovative high-tech solutions and systems. The infrastructure boom in countries such as China or India is boosting the demand for high-performing equipment insulation products, whereas in industrialised countries, less efficient legacy insulation materials are being replaced by flexible high-tech solutions. Increasing urbanisation leads to a concentration of equipment generating stressful noise and vibration levels, creating a growing demand for our
acoustic attenuation products. Generally speaking, energy efficiency and equipment performance are crucial factors in tackling climate change. Both effective cool chain-based refrigerated transportation and the lightweighting trend on mobile equipment prevent massive energy losses.

The strength of our business model attracted Blackstone, one of the world’s leading investment firms, and KIRKBI, the investment company of the Danish Kirk Kristiansen family, to become our new majority shareholders in early 2016. The addition of substantial external growth from multiple acquisitions reinforced our growth trajectory and the successful debt repricings further optimised our capital structure. The repricing transactions in September 2016 and March 2017 have reduced our interest costs by more than 30%. The fact that both issuances were significantly oversubscribed demonstrates the long-term attractiveness of Armacell.

»Although Armacell is a relatively small international group, we have a strong business model.«

Highly relevant products
The global megatrend of urbanisation exemplifies the relevance of our equipment insulation solutions. The infrastructure investments being made in cities in years to come will be both low-carbon and climate-resilient. We offer solutions to make the transportation of energy more efficient and therefore reduce greenhouse gas emissions. The wide variety of our innovative solutions addressing all relevant energy saving, energy efficiency and safety aspects of modern equipment makes me optimistic about the future of our company.

Successful year
I am pleased to report that 2016 was a good year for Armacell. Our consolidated revenues of €558.6 million were up from €540.2 million in 2015, and our average workforce rose from 2,448 to 2,870 employees. This underlines our position as a leading global manufacturer of high-performance flexible foam for equipment insulation and a leading provider of engineered foams as components for larger equipment.

We have a strong market position in the growing flexible equipment insulation market segment across all regions. Our Advanced Insulation division operates in: Europe, the Middle East and Africa (EMEA), the Americas (AMERICAS) and Asia Pacific (APAC). Our exposure to a wide range of end-markets and applications provides a broad spectrum of growth opportunities and improves our resilience through economic cycles.

EMEA contributed €200 million to our Group revenues, up 0.4% on 2015. We performed strongly in Scandinavia, Russia and most of the EU but growth was negatively influenced by geopolitical tensions, a volatile year in the energy markets and FX headwind (devaluation of the pound sterling and the Russian ruble). The revenue contribution from the AMERICAS was €113 million, up 9% on 2015 – our investment in the sales network paying off. APAC delivered €119 million to our Group revenues, an increase of 5.5% on 2015. We performed particularly well in China and India, and our Engineered Systems (Oil and Gas) unit substantially outperformed their growth plan.
Our Engineered Foams division, split into Component Foams and PET foams, contributed €127 million to Group revenues, a figure that was up 1.7% on 2015. Whereas our Component Foams unit achieved modest growth in a difficult economic environment, we strengthened our leading market position in supplying PET core foams to wind turbine blade manufacturers and in the transportation market while increasingly discovering new applications in the broader infrastructure market.

»Our exposure to a wide range of end-markets and applications provides a broad spectrum of growth opportunities.«

**Focused internationalisation strategy**

In pursuit of our consolidating mergers and acquisitions strategy, we acquired the Brazilian company Polipex Indústria e Comércio Ltda., a leading manufacturer of extruded polyethylene (PE) insulation foams specialising in producing and selling insulation products for technical equipment to the Latin American market. We also established Armacell Jios Aerogels Ltd., a joint venture with JIOS Aerogel Ltd., South Korea, to develop and manufacture high-tech silica aerogel blankets, a segment with considerable market potential. Early in 2017, we acquired the insulation business of Nomaco, a leading US manufacturer of extruded polyethylene insulation foams, and Danmat Iso Systems, a leading provider in the Scandinavian region focused on integrated cladding solutions.

On behalf of the Executive Management Team and Management Board, I would like to express my gratitude to our customers worldwide for the loyalty and confidence they continue to place in Armacell and its products. Furthermore, I would like to thank all our employees for their engagement, commitment and ongoing contribution to our success, as well as our Supervisory Board Members for their valuable support.

In 2017, we will continue to focus on expanding our market position, globally marketing our pioneering technologies and delivering on our international growth strategy. At the same time, we will continue to focus on our desire to be a good corporate citizen by taking a proactive, socially responsible role in our local communities, and by reducing the environmental footprint of our products and manufacturing facilities. As an undisputed global leader in our industry, we can truly make a difference around the world.

Yours sincerely,

Patrick Mathieu
President and CEO
Armacell Group
At Armacell we focus on creating sustainable value for our highly diversified global customer base. We see this as an obligation derived from our global leadership in flexible foams for insulating technical equipment and engineered foams. We have a long track record of growth, superior profitability, cash generation and deleveraging orchestrated by a highly experienced management team who have positioned Armacell to outperform.

1. **Growing Markets**
   By enabling energy efficiency for equipment we have become the global leader in flexible technical foams. In an estimated €12 billion equipment insulation industry (for hot, cold and ambient temperatures), flexible foams have captured 10% of the market and there is ample room for Armacell to grow at an estimated organic growth rate of 5 to 8% p.a.

2. **Strong Business Model**
   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 provide a vast spectrum of growth opportunities and make us resilient through economic cycles.

3. **Global Presence**
   Armacell is a truly global company with 25 manufacturing facilities in 16 countries and sales offices in many more. With additional external growth of 5 to 8% p.a. Armacell will continue to pursue its mergers and acquisitions strategy in 2017 and beyond.

4. **Leading the Field**
   Our world-class standards coupled with our pioneering technologies protect our market leadership. Armacell grows by providing energy-efficient solutions offering reliable, certified performance and extended lifetime. By continuously extending our materials base, temperature range and application horizon we are aiming to increased our addressable market size from €6 billion today to €15 billion in future.

5. **Financial Strength**
   With best-in-class cash flow metrics and an optimised capital structure, our financial strategy drives dynamic growth. We have a low capex intensity and high cash conversion with sufficiently flexible financing pillars to enable us to adapt to changing market conditions. Armacell’s continuous efforts to achieve world class ensure optimal usage of raw materials, natural resources and energy, thereby safeguarding maximum operational efficiency and lowest production costs.

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**Enabling Energy Efficiency for Equipment**
**EXECUTIVE MANAGEMENT TEAM**

Our executive team comprises ten international senior managers representing nine nationalities and a diverse set of skills. They work hand in hand to drive future growth based on our culture of innovation, commitment and entrepreneurship.

Jan Bir  
(Germany)  
Chief Legal & Compliance Officer

Jan Bir is responsible for all legal and compliance affairs within the Armacell Group. He manages the legal aspects of our business, ensuring that all our operations comply with applicable laws and internal regulations.

Andrew Stearns  
(UK)  
Vice President APAC & Chief Marketing Officer

Through his deep understanding of the nuances of the various markets in Asia and internationally, Andrew Stearns focuses on strengthening a positive, customer-focused culture where our clients value and appreciate the Armacell experience.

Keith A. Norwood  
(USA)  
Vice President AMERICAS

Masterminding the integration of Armacell’s largest acquisition to date (i.e. Nomaco’s insulation business in the USA), Keith Norwood pursues a sustainable and value-driven approach, aiming to deliver high-quality and innovative product solutions.

Wendy Lim  
(Singapore)  
Chief Human Resources Officer

Wendy Lim fosters the talents of 3,000 employees in 16 different countries, thus contributing to Armacell’s global growth. She has more than 15 years of extensive international HR experience in various markets.

Dr Max Padberg  
(Germany)  
Chief Financial Officer

Dr Max Padberg plays a central role in the development of Armacell’s strategic choices, helping the company to optimise its capital structure, manage financial resources, tax and risks, and ensure most efficient capital utilisation. He is also responsible for controlling, accounting and IT.
Patrick Mathieu
(Luxembourg)
Chief Executive Officer

With over 30 years of experience in the building and insulation materials sectors, Patrick Mathieu sets Armacell’s strategy and vision, which make the company one of the global leaders in energy efficiency around the world.

Norman Rafael
(Switzerland)
Vice President Corporate Development

Norman Rafael develops and implements the external growth strategy of Armacell and leads the dialog with possible takeover candidates as well as with international investors. He has extensive experience in business development, investing, capital markets and communications.

Guillerme Huguen
(France)
Vice President EMEA

With over 20 years of experience in industrial management, Guillerme Huguen is deeply familiar with the nature of the business, market trends and raw material prices, thus ensuring that customers appreciate Armacell as a trustful partner.

Roberto Mengoli
(Italy)
Chief Technology Officer

Roberto Mengoli has been in charge of global technology since 2013. Together with his team, he strives to make Armacell world class, thus implementing highest possible quality and safety standards by systematically optimising structures and processes throughout the company.

Bart Janssen
(Belgium)
Vice President Engineered Foams

Bart Janssen drives and implements the strategic development of our PET and Component Foams business on a global basis. Furthermore, he is always on the lookout for innovative products solutions dedicated to green applications.
Global presence, local focus

The successor company to Armstrong World Industries’ insulation products business was founded in 2000 following a management buyout. A truly global company, Armacell is managed from its corporate headquarters in Luxembourg and regional head offices in Germany, the USA and Singapore. Four product development centres spread around the world ensure a steady supply of leading-edge innovations to meet market requirements. Armacell’s products are customised at a local level to ensure customers’ expectations and requirements are met in any given region.

Armacell follows a strategy of internationalisation with 25 manufacturing plants, including Münster, in 16 countries on four continents. With its worldwide production facilities, Armacell has long been a pioneer in exploring new geographical markets and is focused on further growth in emerging markets. In countries where Armacell does not have its own manufacturing facilities, sales offices and distributors extend the Group’s reach to form a comprehensive sales network.
EXPANSION

The mergers and acquisitions (M&A) strategy Armacell pursues is based on a global three-pillar strategy: new geographies, new technologies and new design capabilities. The transactions completed in 2016 and early 2017 have reinforced Armacell’s market and technology leadership and provided Armacell’s employees with a platform to grow the company and their own skill sets.

1. POLIPEX, BRAZIL
   In October 2016, Armacell acquired 100% of the shares in PoliPex Indústria e Comércio Ltda., a leading Brazilian manufacturer of extruded polyethylene (PE) insulation foams. In Latin America, this extended Armacell’s product portfolio into PE insulation foams, added substantial know-how in this technology, boosted both sales coverage and customer service levels, and significantly increased the manufacturing footprint.

2. ARMACELL JIOS AEROGELS, SOUTH KOREA
   In November 2016, Armacell and Jios Aerogel Ltd., South Korea, announced the establishment of a high-tech joint venture for the development and manufacturing of silica aerogel blankets. The innovative technology behind this joint venture increases the application temperature range of Armacell’s insulation solutions from 125°C to nearly 400°C and establishes the world’s second global provider of high-tech aerogel blankets to the oil and gas, marine and industrial sectors.

3. NOMACO – INSULATION BUSINESS, USA
   In January 2017, Armacell acquired the insulation business of Nomaco, a leading US manufacturer of extruded polyethylene (PE) insulation foams. This acquisition significantly increases Armacell’s North American PE manufacturing footprint, extends its PE product portfolio in North America and increases regional sales coverage and customer service levels.

4. DANMAT, DENMARK
   In March 2017, Armacell announced the acquisition of Danmat Iso Systems A/S, a leading provider in Scandinavia of integrated cladding solutions, including PVC elbows, PVC foil, polyurethane insulation caps, PVC ribbons and pipe support. The acquisition strengthens Armacell’s presence in Northern Europe and enables production of customised solutions at the manufacturing facility in Ølstykke.
CORPORATE RESPONSIBILITY

COMMITMENT

In all its business activities Armacell is committed to living out its corporate responsibility towards its employees, the environment and the communities it operates in. Back in 2006, Armacell joined the UN Global Compact initiative, the world’s most important business network for sustainable globalisation, and, in 2011, Armacell adopted a specific Code of Conduct that obliges all employees worldwide to act ethically.

ETHICS AND INTEGRITY
The Armacell Code of Conduct outlines the responsibilities of all Armacell employees to the company, to each other, and to all our stakeholders. The Code builds on Armacell’s basic corporate values (Customer Experience, Commitment, Empowerment and Accountability, Integrity and Sustainability), describes how these values are to be put into practice, defines rules for everyday work and provides an ethical benchmark against which all business activities are to be evaluated.

ANTI-CORRUPTION
Armacell is committed to integrity. It is part of our Code of Conduct to comply with applicable laws and to implement appropriate measures to assist us with this. A key priority in our compliance efforts is the prevention of bribery and corruption. At Armacell, we are committed to operating our business with integrity, fairness and transparency. We operate a zero tolerance policy to the giving or receiving of bribes or any other corrupt practices. Such conduct is prohibited for all Armacell personnel as well as anyone else acting for or on behalf of Armacell. A reinforced global Anti-Corruption Policy introduced in early 2017 reflects our high standards in this area.

SANCTIONS POLICY
Complying with economic, trade and financial sanctions is part of our business ethics. Sanctions safeguard values like human rights, the fight against terrorism and the non-proliferation of nuclear weapons, and we identify with each of these values. A global Sanctions Policy introduced in 2016 helps our employees to navigate through the international sanctions system and to avoid unethical business transactions.
OUR PEOPLE

At Armacell we firmly believe that our employees are our most valuable asset. That is why we are committed to motivating them, developing their talents and furthering their skills by offering a wide variety of training opportunities. We do our best to create a positive working environment and, in turn, expect our employees to perform to the best of their ability in an atmosphere of mutual respect, trust and reliability.

AWARDS
In recognition of our employees’ engagement we launched our A.R.M.A. Way Award scheme in 2013 to further support our efforts to manage our activities in the A.R.M.A. Way and encourage even stronger teamwork. The awards are presented to winning teams in the following four categories:

- **APPRECIATE** our customers
- **RAISE** our efficiency
- **MANAGE** our cash
- **ACT** to empower our employees

In 2016 an impressive 168 applications were received in these four categories and the winning teams from Poland, India and the USA were a true reflection of Armacell’s global presence.

**GENDER DIVERSITY**
- **Female** 21%
- **Male** 79%

**GEOGRAPHICAL BREAKDOWN**
- **APAC** 23%
- **Americas** 26%
- **EMEA** 51%

**EMPLOYEES ON 31.12.**

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2,448</strong></td>
<td><strong>2,870</strong></td>
<td>+17%</td>
</tr>
</tbody>
</table>

**6.5 years average length of employment**
EVENTS

The Global Armacell Day is an annual gathering of the worldwide Armacell family. First staged in 2015 to celebrate Armacell’s 15th anniversary, the Global Armacell Day is a way of thanking all employees for their commitment and contributions – no matter where an individual employee happens to be working. In China, for example, the local team showed their appreciation of the non-Armacell employees working in the factory, e.g. security guards, cleaners and maintenance workers.

TRAINING

Besides initial vocational training courses, Armacell is firmly committed to further training and educational measures for its global workforce, e.g. through more than 1,000 different initiatives worldwide. A group-wide leadership training programme running since 2013 has seen 590 managers attending and 80% of them have already completed all three steps of this programme. Some training measures are tailored to specific local needs. In APAC, for example, Armacell employees at specific plants are given anti-drug training by local policemen to enhance their awareness of drug-related problems.

TOP 5 COUNTRIES in % of total workforce

- Germany: 23%
- USA: 22%
- China: 12%
- Poland: 7%
- India: 6%
- Other Countries: 30%
HEALTH, SAFETY AND THE ENVIRONMENT

At Armacell we are focused on sustainable, profitable growth through the development and manufacturing of our products to ensure a positive impact on our communities, people and the environment. Our commitment to protect the environment has been an integral part of our business strategy and philosophy since our foundation. We were, for example, the first manufacturer of flexible technical insulation materials to publish environmental product declarations (EPD), and to carry out an eco-balance analysis (lifecycle assessment). Moreover, we have been a supporting member of the UN Global Compact for more than a decade and are also a supporting member of the European Alliance of Companies for Energy Efficiency in Buildings (EuroACE) and Renovate Europe, an EU-wide campaign with the aim of reducing the energy demand of the EU’s building stock by 80% by 2050.

HEALTH AND SAFETY FACTS AND FIGURES
The high priority given to health and safety at Armacell is reflected in many ways. Group-wide, our safety statistics point to a very positive trend between 2014 and 2016.
HEALTH AND SAFETY

In the year under review there were just twelve lost-time accidents (LTAs) in the entire Group. This improvement is primarily due to the successful implementation of the World Class Armadell Mindset (WAM) Safety Pillar launched in 2014 and the unstinting efforts of our workforce, as these examples show. In 2016, the Armadell plant in Mebane, North Carolina, first earned a SHARP Safety Award for its manufacturing facility and then received the Gold Theodore H. Brodie Distinguished Safety Award in the Associates (Manufacturers) Category. This Safety Award is the only national award for outstanding safety performance in the US mechanical insulation industry. In March 2016, Armadell’s Atlanta plant surpassed 1,000,000 Safe Work Hours after more than 13 years of incident-free work. And in Poland nearly 100 employees attended Safety Day, a safety and first aid training event organised in all the countries Armadell operates in. The strong commitment to the WAM program drove some sites close to the WAM Bronze status by the end of 2016.

»Last year 16 out of 23 sites recorded zero accidents with greater than one day lost.«

Roberto Mengoli, Chief Technology Officer, Armadell Group

ENVIRONMENTAL KPI’S

The WAM Environmental Pillar was launched in 2016 and the figures for 2015 and 2016 generally point to a positive trend, which will be reinforced as we intensify our efforts in these fields.

<table>
<thead>
<tr>
<th>WATER CONSUMPTION* in l</th>
<th>ENERGY CONSUMPTION* in MJ</th>
<th>CO₂ EMISSIONS* in kg</th>
<th>TOTAL WASTE GENERATED* in kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.2</td>
<td>35.17</td>
<td>5.9</td>
<td>0.71</td>
</tr>
<tr>
<td>11.2</td>
<td>32.90</td>
<td>5.3</td>
<td>0.67</td>
</tr>
<tr>
<td>~8%</td>
<td>~6%</td>
<td>~10%</td>
<td>~6%</td>
</tr>
</tbody>
</table>

* per metric ton of finished goods
ENVIRONMENT

The insulation of technical equipment in industry and buildings is one of the simplest and most efficient ways of saving energy and reducing CO₂ emissions. As a global leader in flexible foam for the equipment insulation market as well as a leading provider of engineered foam products that have been installed around the globe, Armacell makes a considerable contribution to abating greenhouse gas emissions.

In addition, Armacell practices proactive environmental protection, one of the main pillars of the company’s corporate philosophy and an integral part of the business strategy. Our environmental guidelines oblige all Armacell employees worldwide to aim to protect the environment and conserve natural resources.

To use resources as efficiently as possible, Armacell is constantly searching for ways to reduce raw material use, energy consumption and waste. More and more generated scrap is being recycled and intelligent systems have been developed to utilise production waste. For example, the Eco-Cycle project was launched in EMEA in early 2017. The majority of locations are certified in accordance with the international environmental standard ISO 14001; all European plants have already been certified. Armacell is also a founder member of the European Industrial Insulation Foundation (EiiF), whose purpose is to promote the use of optimised insulation systems in industrial plants.

Environmental Protection Guidelines

Our environmental policy is based on the following principles:

- **Manufacturing products** that pose no risk to the environment when used as intended by customers and consumers
- **Supplying information** on the correct storage, use and disposal of our products
- **Conserving natural resources** by using raw materials and energy responsibly
- **Using environment-friendly technology** in research and production in order to increase workplace safety and protect our communities and the environment
- **Avoiding and reducing waste** as well as using recycling and environment-friendly disposal systems
- **Reducing risks** to soil, air and water to the greatest extent possible
- **Preparing** for potential dangerous situations in order to protect both people and the environment
Armacell employees make a difference – all over the world. Given our Group’s global footprint, we see it as our responsibility to support citizenship projects in our local communities. By emphasising the social dimension of our corporate responsibility, Armacell and its employees are walking the talk in communities where the company operates.

HELPING CHILDREN
A key focus of Armacell’s social activities is on needy children in local communities. For example, support is given to a variety of World Vision projects, e.g. to help orphans in Sri Lanka who lost their parents in the 2004 tsunami. On the Global Armacell Day children from a local primary school in Singapore were treated to a fun afternoon at an indoor play gym. In Poland the ArmaFit programme sponsored a kids’ football tournament as well as supporting local kindergartens to encourage a healthy and active lifestyle. In Germany employees regularly support a children’s charity by donating clothes in a project known as “The Little Prince”. And in the USA Armacell supported the Toys for Tots programme that distributes new toys to less fortunate children during the holidays. In all these cases the Armacell employees were encouraged by the noticeable difference they were making to the children’s lives.
Supporting Local Communities

Armacell and its employees are keen to support the communities it operates in. Here are a few examples of the kind of support provided. After torrential thunderstorms and flash floods caused widespread devastation in West Virginia, local Armacell employees stepped in with donations and advanced clean-up efforts for flood victims. In South Korea employees visited a facility for the physically challenged to repair old insulation installations and clean the living quarters. On the Global Armacell Day in India employees helped orphans at a local centre and donated a considerable sum to help set up a vocational training centre. Just some of the Armacell projects from around the world which have made a real difference to people in need.

Donating Money and Time

Volunteering time and donating money are two practical ways in which Armacell and its employees play an active part in their local communities, as these examples show. Besides regular donations to organisations such as the European Leukodystrophies Association in France, Armacell worked with a charity organisation to purchase tea leaves from poor farmers in Yunnan, China, who otherwise might have had problems selling their crop. The profit the charity organisation made from this transaction was donated to a fund that supports volunteer teachers in schools located in remote parts of China. In Thailand Armacell supported the International Day of Disabled People. In Germany employees regularly collect money at their Christmas party to donate it to a specific charity. And in Durham, USA, employees sponsored and staffed a Family Fun Day for children undergoing blood and bone marrow transplants at the local hospital.
Following record results in 2015, Armacell increases its 2016 revenues by 3.4% (4.9% currency adjusted)

Sales growth generated across all business units and in all regions

2016 adjusted EBITDA increases by 5.1%; adjusted EBITA rises by 4.7%

Successful debt repricing optimises capital structure put in place as part of the LBO

The integration of recent acquisitions is on track

6th consecutive year of EBITDA margin increase, today at 18%
## FINANCIAL KEY FIGURES

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Income statement</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net sales</td>
<td>425.3</td>
<td>415.7</td>
<td>452.2</td>
<td>540.2</td>
<td>558.6</td>
</tr>
<tr>
<td>Adjusted EBITDA&lt;sup&gt;2&lt;/sup&gt;</td>
<td>63.5</td>
<td>64.9</td>
<td>71.2</td>
<td>95.5</td>
<td>100.4</td>
</tr>
<tr>
<td>EBITDA margin</td>
<td>14.9%</td>
<td>15.6%</td>
<td>15.7%</td>
<td>17.7%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Adjusted EBITA&lt;sup&gt;3&lt;/sup&gt;</td>
<td>50.2</td>
<td>51.7</td>
<td>56.1</td>
<td>78.8</td>
<td>82.5</td>
</tr>
<tr>
<td>EBITA margin</td>
<td>11.8%</td>
<td>12.4%</td>
<td>12.4%</td>
<td>14.6%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Non-recurring items</td>
<td>7.0</td>
<td>24.0*</td>
<td>12.5</td>
<td>12.4</td>
<td>11.9</td>
</tr>
<tr>
<td>EBIT</td>
<td>26.3</td>
<td>10.6</td>
<td>21.7</td>
<td>40.7</td>
<td>40.7</td>
</tr>
<tr>
<td><strong>Cash flow</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted cash flow from operating activities&lt;sup&gt;4&lt;/sup&gt;</td>
<td>62.7</td>
<td>54.5</td>
<td>56.3</td>
<td>73.1</td>
<td>83.7</td>
</tr>
<tr>
<td>Investments (excluding acquisitions)</td>
<td>18.8</td>
<td>16.3</td>
<td>20.6</td>
<td>28.4</td>
<td>25.7</td>
</tr>
<tr>
<td>Adjusted free cash flow</td>
<td>44.3</td>
<td>38.9</td>
<td>33.2</td>
<td>45.5</td>
<td>58.0</td>
</tr>
<tr>
<td><strong>Balance sheet</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current assets</td>
<td>163.0</td>
<td>124.1</td>
<td>159.1</td>
<td>187.6</td>
<td>191.0</td>
</tr>
<tr>
<td>Non-current assets</td>
<td>335.8</td>
<td>498.9</td>
<td>514.4</td>
<td>564.8</td>
<td>981.3</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>72.0</td>
<td>81.4</td>
<td>118.3</td>
<td>106.4</td>
<td>145.8</td>
</tr>
<tr>
<td>Non-current liabilities and equity</td>
<td>426.8</td>
<td>541.7</td>
<td>555.1</td>
<td>646.0</td>
<td>1,026.5</td>
</tr>
<tr>
<td><strong>Net debt – excluding shareholder loans</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic equity&lt;sup&gt;5&lt;/sup&gt;</td>
<td>57.0</td>
<td>122.4</td>
<td>93.1</td>
<td>96.7</td>
<td>306.5</td>
</tr>
<tr>
<td>Net debt</td>
<td>220.0</td>
<td>295.5</td>
<td>321.5</td>
<td>391.6</td>
<td>552.6</td>
</tr>
<tr>
<td>Net debt/EBITDA</td>
<td>3.5x</td>
<td>4.6x</td>
<td>4.5x</td>
<td>4.1x</td>
<td>5.5x</td>
</tr>
</tbody>
</table>

Due to a change of shareholders of the Armacell Group as of 2 July 2013, the financial data presented for 2011, 2012, the first half of 2013, and the second half of 2013 come from the Audited Combined Financial Statements for the respective periods reflecting the combined results of operations and financial position of the operational Armacell Group and are comparable to the 2014 financial data from the Audited Consolidated Financial Statements of Armacell International S.A. Luxembourg.

The 2013 financial data presented here is the result of the sum of the Audited Combined Financial Statements for the first half of 2013 and the Audited Combined Financial Statements for the second half of 2013.

* The increase in the amount of non-recurring items in 2013 was impacted by transaction costs associated with the change in shareholders of the Armacell Group.

1 With the sale of Armacell to Blackstone and KIRKBI in February 2016, consolidated financial statements are prepared on the level of Armacell Holdco and include ten months of activities of the Armacell Group. To provide comparable numbers, the income statement and cash flow are related to Armacell International S.A. while the balance sheet is based on consolidated Armacell Holdco financials to reflect the full financing at Group level [see page 38].

2 Adjusted EBITDA is the result before amortisation, depreciation, interest and taxes adjusted by non-recurring items.

3 Adjusted EBITA is the result before amortisation, interest and taxes adjusted by non-recurring items.

4 For the calculation of the adjusted cash flow, the impact of the non-recurring items and acquisitions are excluded.

5 Economic equity includes shareholder loan.
BUSINESS STRUCTURE AND POSITIONING

On 29 February 2016, Armacell International S.A. was acquired by Blackstone and KIRKBI via Armacell Bidco Luxembourg S.à r.l, which is a subsidiary of Armacell Holdco Luxembourg S.à r.l. For this reason, on a consolidated basis Armacell Holdco and Armacell Bidco, the acquiring companies, have only included ten months of activities associated with the Armacell Group in the full fiscal year under review. In order to provide comparable numbers for 2015 and 2016, this annual report exhibits the consolidated financials of Armacell International S.A., which represent all the operating activities of the Armacell Group (Armacell).

Armacell has two divisions, Advanced Insulation and Engineered Foams.

ADVANCED INSULATION
Armacell’s Advanced Insulation division develops flexible foam products for insulating mechanical equipment in markets where energy distribution is required, e.g. commercial and residential construction, industrial applications as well as the oil and gas industry. The products are predominantly used to enhance energy efficiency by reducing temperature losses and environmental impacts when transporting non-electrical hot or cold energy. Armacell’s Advanced Insulation products and solutions are used in both initial equipment installations and refurbishments.

The typical applications include heating, ventilation and air conditioning (HVAC), heating and plumbing (H&P), refrigeration, solar as well as accessories and acoustics.

The division is managed via three regions: Europe, the Middle East and Africa (EMEA), North and South America (AMERICAS), and Asia Pacific (APAC).

ENGINEERED FOAMS
The Engineered Foams division develops and produces custom-made high-performance foams used across a broad range of end markets, including wind energy, automotive, transportation, safety, and sports and leisure. This division addresses the needs of specific markets and applications where weight and mechanical and tensile strength are of critical importance. The Engineered Foams division is the competence centre for innovative and environmentally friendly structural PET foam cores. As a pioneer in the field of PET technology, Armacell was the first manufacturer to succeed in foaming high quality, bottle-grade PET on an industrial scale and qualifying PET foams for the composite industry.

RESEARCH AND DEVELOPMENT
Research and development (R&D) is one of the Group’s most important strategic fields of activity. In 1954 Armacell invented and brought to market...
OWNERSHIP STRUCTURE
Blackstone, one of the world’s leading investment firms, is the majority shareholder of Armacell. KIRKBI, the holding and investment company of the Kirk Kristiansen family, together with the senior management team of Armacell hold the remainder of the shares.

CORPORATE GOVERNANCE
Supervisory Board
- Lionel Assant (Chairman)
- Jürgen Pinker
- Natacha Jamar
- Adrian Kalt
- Jean-Carlos Angulo

Audit Committee
- Jürgen Pinker (Chairman)
- Jean-Carlos Angulo
- Adrian Kalt

Nomination and Remuneration Committee
- Lionel Assant (Chairman)
- Jean-Carlos Angulo
- Adrian Kalt

About Blackstone
With over US$360 billion in assets under management, Blackstone is one of the world’s leading investment firms. Blackstone seeks to create positive economic impact and long-term value for its investors, the companies it invests in, and the communities in which it works. The asset management businesses includes investment vehicles focused on private equity, real estate, public debt and equity, non-investment grade credit, real assets and secondary funds, all on a global basis.

About KIRKBI
KIRKBI is the holding and investment company of the Danish Kirk Kristiansen family. In addition to a broad investment portfolio, the company’s strategic activities include the majority shareholding in the LEGO Group, a significant shareholding in Merlin Entertainments plc and investments in renewable energy. KIRKBI has a long-term investment profile and is a responsible investor with a high ethical standard.
In 2016, global economic growth slowed to 3.1% (2015: 3.2%) driven by declining growth rates in advanced economies. Weaker-than-expected growth in the USA and the UK’s vote to leave the European Union (“Brexit”) mainly triggered this development.

While growth in emerging Asian economies continued to be strong, African economies and some economies in the Middle East experienced a slowdown due to challenging economic and political conditions. In the second half of 2016, political instability negatively affected the Turkish economy. Brazil and Russia continued to face challenging macroeconomic conditions. These were partly offset by a recovery of commodity prices in Q4 2016, which have recently strengthened the outlook for these countries.

In 2016, the European Union (EU) grew by 1.7% (2015: 2.0%). The key drivers of growth were Germany, the UK, Spain and France. Central and Northern Europe again exhibited stable growth rates with Sweden contributing most to the positive momentum. Growth in the UK and Eastern Europe slowed down in 2016, although growth rates in Eastern Europe were substantially higher than in the EU as a whole.

Moderate oil prices, the continuing strength of the US dollar against the euro and quantitative easing by the European Central Bank (ECB) boosted demand and output. Unemployment rates across most European countries decreased although still hovering around historically high levels.

With growth down from 2.6% in 2015 to 1.6% in 2016, the US economy finished the year weaker than had been expected at the beginning of the year. Hence, the expected tightening of US monetary policy was delayed to the end of 2016. During the first nine months of 2016, the US dollar was weaker against the euro but strengthened following the presidential election in November 2016.

After five consecutive years of declining economic growth in emerging market economies, growth accelerated to 4.1% in 2016 (2015: 4.0%). The rebalanced Chinese economy grew by 6.7% in 2016 (2015: 6.8%). India maintained its strong economic growth trajectory for 2016 at 6.8%, the same figure as in 2015. Growth in the ASEAN countries was similarly stable at 4.9% year-over-year.

Source: IMF World Economic Outlook (October 2016 and update April 2017, estimates)
GLOBAL TRENDS
The flexible equipment insulation market has proven resilient to cyclical fluctuations and generally robust in an increasingly volatile macroeconomic environment. This is due to five megatrends that are strongly driving market growth:

- **Energy efficiency**
  Nowadays, technical equipment is recognised as the second-most important source of energy losses. This is leading to increasing and tighter regulation across applications and key end markets alike, a trend that is further boosted by an environment of volatile energy prices and a focus on total cost of installation. This is driving the demand for state-of-the-art equipment insulation and thus the substitution of legacy insulation material.

- **Urbanisation**
  The concentration of energy production and sources is leading to higher and more stringent requirements with respect to energy distribution and, in turn, fuelling the growing demand for high-performance insulation products.

- **Food supply globalisation**
  The increase in the global supply of fresh foods to developed countries is driving the expansion and growth of the global cold chain. The level of distribution and refrigeration has become more sophisticated with rising quantities and shorter turnaround times. This is again driving demand for lightweight, cost-effective end-to-end insulation solutions.

- **Acoustic comfort**
  Growing global noise levels have resulted in generally lower tolerance of noise and vibration. To this extent, public authorities are predicting rising health concerns and starting to pass noise pollution regulations. The diversity of situations arising in future is driving the demand for and growth of Armacell’s customised acoustic solutions and system.

- **Lightweighting**
  The trend to ever-lighter materials and end products is mainly driven by the desire for enhanced energy efficiency, e.g. reducing the weight of man-made machines to save energy.

Armacell’s strong business model is at the centre of five global megatrends.
GROUP FINANCIAL PERFORMANCE

REVENUE AND PROFIT
In 2016, Armacell’s net sales rose by 3.4% to the record level of €558.6 million (2015: €540.2 million). Adjusted for negative currency impacts of €8 million, top-line growth amounted to 4.9%. This positive development was driven by both business divisions and all regions. Armacell’s EBITDA before unusual items increased to €100.4 million in 2016. This represents an increase of 5.1% compared to the previous year (2015: €95.5 million). The EBITDA margin rose to 18.0% from 17.7% in 2015. Currency translation effects had a negative impact on EBITDA of €1.6 million in 2016.

In 2016, the total adjustments for unusual items amounted to €11.9 million (2015: €12.4 million). The largest proportion of these one-off effects related to expenses with respect to the change of ownership to Blackstone and KIRKBI in late February 2016. In addition, the costs for corporate acquisitions, expansion of the Group’s international footprint as well as refinancing and restructuring expenses are included in this figure. Excluding unusual items, EBITA increased to €82.5 million, up from €78.8 million in 2015, or an increase of 4.7%. The EBITA margin increased to 14.8% (2015: 14.6%).

INVESTMENTS AND CASH FLOW
In 2016, Armacell generated strong cash flows, with those from operating activities after income tax amounting to €83.7 million. Cash outflows of €25.7 million in 2016 were related to the purchase of property, plant and equipment and intangible assets. The CAPEX ratio (defined as capital expenditure for property, plant and equipment over net sales) amounted to 4.6% and was impacted by the new PET line in Canada and CAPEX for the completion of the plant in Russia. Armacell’s cash flow conversion rate for 2016 (defined as adjusted EBITDA minus CAPEX over adjusted EBITDA) was 74.4%. Armacell International S.A. reported a cash conversion rate of 70.3% for 2015.

BALANCE SHEET
The change in ownership in late February 2016 and the related and subsequent financing transactions mean that the balance sheet of Armacell Holdco cannot be compared with those of Armacell International S.A. The same holds true for the 2015 balance sheet figures of Armacell Holdco. To reflect the full impact of the financing, the balance sheet is presented based on consolidated Armacell Holdco, which includes Armacell International S.A.

Armacell delivers record results in 2016.
To finance the change in ownership, a first lien, second lien and revolving credit facility were raised. These funds financed the leveraged buy-out (LBO) and paid back the existing first and second lien debt and replaced Armacell’s existing revolving credit facility of US$100 million. In September 2016, Armacell repriced its first lien debt and partially repaid its second lien debt. As part of the transaction, the margin on the first lien debt was reduced to Euribor +450 bps (previously Euribor +525 bps) and approx. €45 million of second lien debt was shifted into the first lien debt. In February 2017, Armacell considerably improved both the financing structure and decreased interest costs again via a second repricing transaction. In total, the company raised €622 million of first lien debt, increasing the existing first lien debt by €140 million. The newly raised funds fully repaid the existing second lien debt as well as some drawings made under the revolving credit facility for acquisitions. The margin on the first lien debt was again substantially reduced to Euribor +350 bps and the margin on the revolving credit facility was decreased to Euribor +325 bps. Overall, this transaction resulted in cash interest savings of approx. €9 million per year. Together with the repricing completed in September 2016, Armacell realised savings of approx. €15 million on annual interest costs compared to the buyout financing terms achieved in February 2016.

Economic equity capital, including the preferred equity certificates of the shareholders of Armacell, amounted to €306.5 million as of 31 December 2016. The share capital was raised to €17.9 million following the change in the shareholder structure in February 2016. The subscription of 321,982,359 preferred equity certificates, each with a par value of €1.00, were utilised to finance the acquisition of the Armacell Group. The preferred equity certificates have a term of 29 years, with an option for early repayment. The economic equity ratio amounts to 26.1%.

Non-current liabilities, excluding the liabilities due to shareholders, amounted to €719.9 million at the end of 2016. These primarily consisted of non-current borrowings of €545.8 million, provisions for pensions and similar obligations of €91.7 million and deferred tax liabilities of €78.9 million. Current liabilities were €145.8 million, which included current borrowings of €30.0 million. The net debt of Armacell Holdco at year-end 2016 was €552.6 million.

The total assets of the Group were €1,172.3 million as of 31 December 2016. Non-current assets amounted to €981.3 million, comprising other intangible assets of €325.1 million, property, plant and equipment of €188.4 million as well as goodwill of €460.8 million. Other intangible assets mainly consisted of customer lists, know-how, patents, trademarks and brands. Additional non-current assets in 2016 were derivative assets, deferred tax assets and other non-current financial assets. Current assets totalled €191.0 million. Inventories, mainly consisting of finished goods, amounted to €63.3 million and trade receivables to €79.3 million, while cash and cash equivalents were €35.4 million.
ADVANCED INSULATION

In fiscal 2016, revenues in Armacell’s Advanced Insulation division increased by 3.9% to €432.1 million (2015: €415.8 million). Armacell grew its net trade sales in spite of the demanding economic and market conditions. As in 2015, 77% of Group sales were generated in the Advanced Insulation division in the year under review.

Advanced Insulation EMEA
The European economy grew by 1.7% in 2016, the second highest rate since 2010. All countries in Europe grew from 2015 to 2016, with Ireland (+4.9%), Sweden (+3.6%), Eastern European countries (+3.3%) and Spain (+3.1%) the strongest performers. Germany, Europe’s largest economy, grew by 1.9%. Following strong growth rates in recent years, the UK’s growth rate fell to 1.8% in 2016. While most European markets were supported by the expanding monetary policy of the central banks as well as by lower oil and commodity prices, Norway’s growth rate fell to 0.8%. Turkey and the Middle East and North Africa region reported growth rates of approx. 3.3% and 3.2%, respectively.

Against this economic backdrop, Armacell recorded net sales of €200.0 million, an increase of 0.4% on 2015 (€199.2 million). The revenue growth was negatively affected by a currency impact of approx. €4.2 million due to the weakening of the sterling against the euro following the vote to exit the EU (“Brexit”), and by unfavourable currency developments in Russia and Turkey. Adjusted for these adverse currency developments, net sales growth in 2016 would have been 3.9% – more than double the respective growth in GDP. This growth was driven by organic market growth and market share gains in several European countries, which in some countries more than offset lower product prices than in 2015.

**KEY FIGURES FOR ADVANCED INSULATION EMEA**

<table>
<thead>
<tr>
<th>in € million</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
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<tbody>
<tr>
<td>Revenues</td>
<td>175.0</td>
<td>199.2</td>
<td>200.0</td>
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</table>
Advanced Insulation AMERICAS

The US economy exhibited a weaker-than-expected first half year in 2016, with GDP growth approx. 1.6% for the full year (2015: 2.6%). Growth was driven by a combination of factors: increased personal consumption due to a sound labour market and expanding payrolls, an improved residential housing market, investments in domestic infrastructure and higher governmental expenditures. The negative influences on overall growth were prolonged inventory corrections, lower investments in the energy sector and policy uncertainty prior to the presidential election.

According to the United States Census Bureau (USCB), US non-residential construction activities were approx. 4.6% higher in 2016 than in 2015. The key drivers were investments in office buildings, commercial, healthcare, lodging and recreational space, which more than offset the weaker growth rates in the transportation, manufacturing and religious segments. In 2016, residential construction activities increased by 3.6% on 2015. The net trade sales of Advanced Insulation AMERICAS increased to €112.9 million, 9.0% up on 2015. This was boosted by the carry-over effect of the first full-year consolidation of Canada-based ITP in 2016 as well as by the organic growth of the US market and incremental growth from implementation of the Group’s demand creation program.

In Brazil, the construction industry was adversely affected by the weak economy with GDP declining by 3.3% from 2015 to 2016. The key drivers of this negative development were delayed or terminated investments in oil, gas, petrochemical and mining projects associated with local corruption scandals.

The domestic construction market declined by 5.0% according to the Brazilian Chamber of the Construction Industry. Following the devaluation of the Brazilian real against the US dollar and the euro in 2015, the currency recovered by 21.6% and 25.5%, respectively, in 2016. During the year under review, Armacell expanded its Latin American business across the continent and is now present in most countries. Besides Brazil, Argentina and Colombia are the largest contributors to the business, while Argentina, Ecuador and Uruguay are exhibiting the strongest growth. This partly compensated for the weak Brazilian construction market. Overall, Armacell increased its domestic distribution network and customer service levels, particularly in HVAC applications. Despite the challenging economic environment in Latin America, net sales only fell by 0.6%. Adjusted for adverse currency effects, the South American business would have grown by 3.1%. The acquisition of PoliPex in October 2016 reinforced this development, with the addition of some 80 employees, a manufacturing plant in Florianópolis and additional distribution centres in South and Northeast Brazil.

### KEY FIGURES FOR ADVANCED INSULATION AMERICAS

<table>
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<tr>
<th>in € million</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<tbody>
<tr>
<td>Revenues</td>
<td>98.7</td>
<td>103.6</td>
<td>112.9</td>
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</table>

77% of revenues generated by Advanced Insulation.
**Advanced Insulation APAC**

In 2016, overall economic growth for the emerging and developing countries in the APAC region increased moderately whereas APAC’s developed countries displayed a mixed picture. Economic growth picked up in Australia and South Korea but weakened in Hong Kong, Singapore and Japan.

China’s GDP growth rates fell from 6.9% in 2015 to 6.7% in 2016 as the domestic economy rebalanced. The construction sector exhibited a shift from government-financed initiatives to privately funded commercial and industrial projects. Growth in the residential sector focused on general urbanisation, slowing year-over-year with vacant property levels still high. The anti-corruption initiative continued to impact governmental projects and caused delays in their execution. The ASEAN market was again characterised by sound GDP growth of 4.9% in 2016. Japan’s GDP growth slowed to 0.6% in 2016 while growth in South Korea and Australia picked up compared to recent years. Following the change in leadership in India in 2014 and lower energy and commodity prices, the domestic economy developed strongly with GDP growth of 6.8% in 2016 and an even stronger outlook of 7.2% for 2017. Net trade sales in APAC grew by 5.5% to €119.2 million, backed by good volume growth following significant investments in the local sales force and the strong development of oil and gas-related project business, which is bundled in our Engineered Systems business within APAC Advanced Insulation. Excluding the negative currency development in some markets versus the euro the net trade sales growth would have equated to 9.2% year-on-year.

In Greater China, Armacell maintained its strong market position and consecutively gained market shares in India despite keen competition. The Indian business was strengthened through a combination of increased project generation and conversions and a broader product offering achieved by leveraging the strong distribution network. In 2016, the South Korean business grew over and against 2015 despite the devaluation of the Korean won, whereas net sales in Australia were lower than in 2015.

**KEY FIGURES FOR ADVANCED INSULATION APAC**

<table>
<thead>
<tr>
<th>in € million</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
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<tbody>
<tr>
<td>Revenues</td>
<td>82.1</td>
<td>113.0</td>
<td>119.2</td>
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**ENGINEERED FOAMS**

Armacell’s Engineered Foams business is split between Component Foams and PET foams. Component foam solutions, i.e. engineered elastomeric and polyethylene foams as well as cross-linked polyolefin foams, are characterised by low weight and high mechanical resistance as well as by additional functionalities, such as water sealing, acoustic absorption or shock attenuation. PET foams are the core material in composite sandwich panel structures and are currently mainly used in wind turbine equipment. In recent years, Armacell has expanded into applications where added value is generated by the acoustic and vibration absorption, mechanical resistance and lightweight properties of its PET foams.

Engineered Foams achieved net sales of €126.5 million in 2016, up 1.7% from 2015. This increase was supported by the carry-over impact of the first full-year consolidation of Canada-based ITP and driven by volume growth in the US market. After a very strong volume performance in 2015, revenue from the PET business fell in 2016, mainly due to passing on lower raw material costs to customers and lower volumes in the wind energy market.
Component Foams

Component Foams generally displayed modest growth rates in a challenging economic and competitive environment, but again exceeded overall GDP growth in the US market. The main driver for the sound performance was once again the steady development of the automotive industry and safety solutions as well as the demand for sports and leisure equipment.

PET

Armacell strengthened its leading market position in supplying PET core foams to wind blade manufacturers, a market which, after strong growth in 2015, saw a consolidation in 2016 with lower overall demand and a shift of growth from the developed countries to emerging economies led by China. Since the cost of energy remains the key driver of this industry, Armacell is constantly working to optimise its cost base and product quality. To this extent, 2015 was considered to be the breakthrough year for PET core foam manufactured from recycled PET flakes. In 2016, the majority of the volume produced originated from recycled PET instead of virgin PET.

In addition to the strong position in the wind market, Armacell strengthened its position in the transportation market, mainly in the field of composite panels for lightweight trucks and increased its presence in leisure boat applications.

PET is increasingly discovering a growing number of applications in the automotive and infrastructure market where, in similar fashion to the wind and transportation markets, lightweight design and structural performance are the key drivers of new applications. Both engineers and architects are starting to notice the benefits of PET as a convincing alternative to existing materials. To this extent, legacy products are gradually being substituted, above all in new infrastructure projects and transportation applications.

Up to the end of 2016, Armacell had produced this foam in Europe and served the global market. In January 2017, the manufacturing footprint was expanded with a new production line in Brampton, Canada, to serve the North American markets and its customers. Key PET product developments in the recent past include a portfolio expansion to include higher and lower density foams in order to address additional high-value applications.

In € million

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<tr>
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<th>2014</th>
<th>2015</th>
<th>2016</th>
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</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>94.6</td>
<td>124.4</td>
<td>126.5</td>
</tr>
</tbody>
</table>

23% of revenues generated by Engineered Foams.
According to International Monetary Fund forecasts, global GDP is expected to pick up from 3.1% in 2016 to 3.5% in 2017 and 3.6% in 2018. Factors impacting the global outlook include uncertainties about the policy stance of the new US administration, rebalancing in China, a protracted decline in the terms of trade as well as geopolitical tensions in the Middle East. Growth is projected almost entirely from emerging markets and developing economies, which mainly reflects two factors: the gradual normalisation of macroeconomic conditions in several countries that had suffered from deep recessions, and the increasing influence of fast-growing countries in the global economy. Higher commodity prices and easing inflation are supporting the recovery in Brazil, Russia and in other commodity-producing countries. Nevertheless, short-term supply restrictions may limit the positive impact of higher oil prices on production. In India, continuing strong growth is expected for the next two years, backed by the implementation of key structural reforms and strong public sector wage growth.

Demand for technical insulation materials correlates with the cycles of a variety of end markets that the Group is active in and to a lesser degree with increases or decreases in commercial and residential construction activities. Following the global economic crisis, construction activity has generally recovered and is expected to gradually improve in the near future. In most countries, growth rates higher than those of GDP are forecast for the equipment insulation market.

In Europe, total construction output is expected to increase by 2.1% and 2.2% in 2017 and 2018, respectively, (2016: 2.0%). Residential construction is forecast to grow by 2.8% in 2017. For European countries, non-residential construction activity is generally expected to be broadly in line with projected GDP growth in the coming years.

The outlook for the US economy in 2017 is favourable, with private sector confidence reaching its highest level since the crisis. GDP is forecast to rise by 2.3% in 2017 and 2.5% in 2018. US construction activity is also seen to be picking up in 2017. Firming residential construction will continue to drive the sector, mainly through a strengthening of single-family housing starts. A new infrastructure spending bill introduced by the Trump administration may also boost civil engineering projects. The outlook for non-residential starts is mixed, with the manufacturing sector possibly benefiting from new US policies in the short-term while medical-related sectors could be affected by higher levels of uncertainty.

In Asia Pacific, growth rates in the insulation equipment business are predicted to remain well above the 6% level, with ASEAN economies the main drivers. Sentiment is generally improving for the emerging and developing economies. This reflects reduced concerns about China’s near-term prospects following policy support for growth, mildly favourable macroeconomic news in particular from India, recovering commodity prices and expectations of lower interest rates among the more advanced APAC economies.

Forecasts for the wind energy industry generally remain intact and positive towards 2020. However, decreasing growth rates are expected over the next two to three years after the wind energy market reached record levels in 2015 with an estimated 63 GW of newly-installed capacity worldwide. The magnitude and duration of such a correction will depend on several factors, such as recent global warming initiatives and related renewable investment programmes, the development of oil and gas prices as well as on-going stock market volatility. The majority of installed wind capacity is located in Europe. Here, decreasing demand in the short- and mid-term may be compensated by an increase in new installations in North America and China.

Despite several uncertainties in the political, economic and financial market environment, Armacell is expecting continued growth in revenues, EBITDA and EBITA in 2017. Strategic acquisitions, increasingly diversified Group sales, an enlarged addressable market and continuous cost improvement initiatives form a strong basis for Group prosperity. The implementation of the global improvement programmes across the entire Group is set to further enhance manufacturing performance. Raw material prices are expected to be higher in 2017 than in 2016, and sales price adjustments to compensate for this trend are being demanded from customers. Armacell has introduced appropriate measures to align production capacity to the expected demand requirements.

Moreover, Armacell is constantly evaluating its routes to market as well as exploring and developing new and promising market opportunities, e.g. in the global oil and gas industry, acoustic systems and solutions, the PET core foam market for wind turbines or lightweight automotive and transportation applications. These initiatives are being accompanied by an explicit external growth strategy that featured two acquisitions in Turkey and Canada in early 2015, the acquisitions of PoliPex in Brazil and the insulation business of Nomaco in the USA and the joint venture with Jios in South Korea in 2016 as well as the acquisition of Danmat Iso Systems in Denmark in March 2017. The acquisitions of PoliPex and of Nomaco roughly doubled the business volumes in Latin and North America, respectively. Both companies have added a well-recognised portfolio of PE products to Armacell’s existing range.

At the end of March 2017, Armacell successfully completed its second debt repricing. The Group raised €622 million of first lien debt, increasing the existing first lien debt by €140 million. The newly raised funds will repay both the existing second lien debt in full as well as the drawings under the revolving credit facility for recent acquisitions. Together with the repricing undertaken in September 2016, interest costs have been reduced by over 30%, i.e. by approx. €15 million per year as compared to February 2016.

With its marketing and sales excellence plan implemented and on the basis of the further improved capital structure, Armacell is aiming to again outperform the market in 2017 by participating in base market growth, substituting legacy material and entering new geographies, new markets and product applications both organically and via strategic acquisitions.
MAKING A DIFFERENCE 
AROUND THE WORLD
MAKING A DIFFERENCE AROUND THE WORLD
1860
Thomas M. Armstrong founds a workshop to produce bottle corks in Pittsburgh, USA.

1954
Invention of Armaflex, the first highly flexible rubber insulation material.

2000
Armacell starts as a stand-alone company, emerging from the successful insulation products division of Armstrong World Industries.

2016
The investment firms Blackstone and KIRKBI acquire Armacell.

RESULTS

€558.6m
Total Net Sales

€100.4m
Adjusted EBITDA

€82.5m
Adjusted EBITA

2,870
Employees
BUSINESSES

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Revenues</th>
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<tbody>
<tr>
<td>77%</td>
<td>€432.1m</td>
</tr>
<tr>
<td>23%</td>
<td>€126.5m</td>
</tr>
</tbody>
</table>

PRESENCE

1. CORPORATE HEADQUARTERS
LUXEMBOURG

3. REGIONAL HEAD OFFICES
GERMANY – USA – SINGAPORE

25. MANUFACTURING FACILITIES
16 COUNTRIES – 4 CONTINENTS

450+. SALES AND ADMINISTRATION OFFICES