RUBBER REINFORCEMENT

Bekaert’s Rubber Reinforcement business unit develops, manufactures and supplies tire cord and bead wire for the tire sector. In serving the equipment market, the product portfolio includes hose reinforcement wire and conveyor belt reinforcement products.

To serve customers worldwide, the business unit has a global presence with manufacturing plants in EMEA, US, Brazil, India, Indonesia, and China. In 2020, Bekaert starts the construction of a new manufacturing plant in Vietnam.

MARKET LEADERSHIP

Global market leadership in the tire cord market 30%

GROWTH DRIVERS
- Tire rim size
- Mileage driven
- Innovation
- Sustainability
- CAGR tire markets

LOCAL SERVICE THROUGH OUR GLOBAL FOOTPRINT
- 14,249 employees
- 23 manufacturing plants
- 2.1 billion in combined revenue

OUR AMBITION
be the undisputed technology and quality leader in our market

Economic environment and growth indicators

Automotive markets weakened in 2019 and led to a clear drop in new vehicle production volumes globally. OEM vehicle demand is, however, not the main growth indicator for the tire and tire cord business.

The global radial tire production counted 1.8 billion units in 2019, stable from last year and composed of 12% truck radial tires and 88% passenger radial tires. The CAGR over the past 10 years (including the flat growth of 2019) was +2.7% and the future annual growth rate is projected to remain in the range of 2-3%, over the coming years.

DID YOU KNOW?
While driving, your car’s contact patch with the road equals the size of 4 beverage coasters. Safe driving starts with good tire grip!

SUSTAINABLE TIRES
ST/UT tire cord products of Bekaert save 1.5 billion kg of CO2 exhaust per year
Bekaert’s TAW® coated steel cord excludes the need for cobalt in rubber compounds for tires
Based on available market data, we estimate that the share of replacement tire sales was close to 80% of the total tire sales in 2019 (versus 75% in normalized OEM market circumstances). This was partly driven by lower OEM sales and partly because of a trade-off effect toward higher replacement tire sales, which comes with an ageing vehicle fleet.

The main growth drivers in tire markets are the total mileage driven (for passenger vehicle tires) and freight transport indicators (for truck tires). The increasing tire rim size and the environmentally driven shift to ever thinner and stronger tire cord constructions are additional growth drivers for Bekaert’s steel cord products.

Our performance in 2019

Bekaert’s Rubber Reinforcement business achieved 2.4% sales growth, driven by higher volumes. The business unit achieved 10% volume growth in China as a result of increased market share and strong demand, particularly in the first half of the year. Sales were about stable in EMEA and North America but fell short in Indonesia and India.

Significant wire rod price decreases led to inventory valuation corrections at year-end and drove underlying EBIT below the level of 2018 to € 172 million, at a margin of 8.7%. The profitability improved significantly in Asia, but declined in EMEA and in the US.

Reported EBIT was € 155 million, slightly above last year. EBIT was impacted by one-off elements in both 2018 (€ -25 million – mainly related to the closure of the Figline plant in Italy) and 2019 (€ -18 million – mainly due to the footprint change in the US).

Underlying EBITDA was € 295 million with a margin on sales of 14.8%. ROCE improved from 12.9% to 13.2% as a result of actions to reduce the capital employed.

Capital expenditure (PP&E) amounted to € 42 million and included investments in all continents. The purchase of land use rights in Vietnam amounted to € 13 million.

Actions to realize our ambitions

Operational excellence

Bekaert has implemented actions to resolve the start-up issues and inefficiencies encountered in production plants with significant expansion programs in recent years. This particularly applied to the Rubber Reinforcement plants in Slovakia, Romania and India. The implemented actions started to show results in the course of 2019 and are expected to deliver more benefits in 2020 and beyond.

“Tires with a rim size above 17” use twice the amount of tire cord compared with 13” tires.”

“Truck tires use more than 10 times the volume of tire cord that is used in a standard rim passenger tire.”
Investing in innovation

Tire makers are advancing innovation in tire design to set or follow new demand and technology trends. These include: tire diversification in line with the increasing range of vehicle variants; the constant improvements in grip, rolling and wear resistance; the search for renewable and recycled raw materials; and game-changing innovations like smart tires and futuristic design concepts.

Bekaert develops tire cord solutions that help tire makers develop their new tire designs. All new trends, including tires for electric and autonomous vehicles, sustainable materials, and airless tire concepts, use steel tire cord. Bekaert spearheads innovation with ever lighter and stronger rubber reinforcement products and with coating technologies that make the addition of cobalt to the rubber compounds redundant.

Investing in future growth

Bekaert is building a new rubber reinforcement plant in Vietnam to serve both regional and export markets. The production start-up is scheduled at the beginning of 2021.

Post-balance sheet date, Bekaert acquired the (20%) shares previously held by Continental Global Holding Netherlands BV in Bekaert Slatina in Romania.
Bekaert’s Steel Wire Solutions business unit develops, manufactures and supplies a very broad range of steel wire products and solutions for customers in construction markets, consumer goods and agriculture, energy, utilities and mining, and the industrial sector in general.

To serve customers worldwide, the business unit has a global presence with manufacturing plants in EMEA, US, Latin America and Asia and a sales and distribution network worldwide.

DIVERSIFIED PORTFOLIO

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<th>GROWTH DRIVERS</th>
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OUR AMBITION
solidify our business through footprint optimization, technology leadership and strategic partnering in growth markets

DID YOU KNOW?
Every year, more than 1 billion bottles of sparkling wines are uncorked by removing the muselet (cork cage) made of Bekaert steel wire

In 1881, Leo Leander Bekaert acquired a first patent for a newly designed barbed wire crown. Today, Moto® barbed wire is still one of the strongest agricultural fencing brands

PART OF YOUR LIFE!
Toasting bread in the morning, using a soap pump in the shower, a grill in the oven, driving your car, opening a fence, using electricity and data transmission all day long, uncorking champagne at a party, or taking a rest on an innerspring mattress... do you ever realize how present Bekaert’s steel wire solutions are in your life?

Economic environment and growth indicators

The extended diversity of sectors, geographies, and competitive landscapes in which the business unit Steel Wire Solutions is active makes it impossible to identify the economic evolutions and growth indicators that fit all. When focusing on our main markets, the following indicators are key in evaluating the business climate in 2019 and the growth drivers in the coming years:
The construction markets of Bekaert Steel Wire Solutions are largely tied to developments in public infrastructure, which are driven by government spending. Bekaert has a good presence via global customers in bridge construction works and a very strong market position in the construction markets in Latin America. Limited public spending in Peru and Ecuador continued to weigh on the demand for Bekaert’s construction products in 2019. Demand in Chile and Brazil held up well throughout the year.

Agriculture is the second-largest sector for the business unit and uses both the traditional product offering of fencing systems and tensioning wire, as well as advanced solutions in horticulture and aquaculture applications. Demand from agricultural markets in the US has been weak for several years and was increasingly affected in 2019 due to trade barriers. In Latin America, another high-consumption region in this sector, Bekaert’s strong market position and leading product brands enabled continued good business in most countries in the first half of 2019. Political turmoil and social protest across the region impacted demand particularly in the last quarter of the year.

Our performance in 2019

The business unit Steel Wire Solutions reported a sales decrease of -3.3% compared with last year. The positive effects of price-mix (+3.7%) and currency movements (+0.8%) partially offset the impact from passed-on wire rod price decreases (-2.6%) and lower volumes (-5.2%).

The economic uncertainty affecting the automotive, other industrial and agricultural market demand drove sales down in EMEA, North America, and South East Asia. The business climate in Latin America further worsened due to significant protest actions across the region in the last quarter of 2019. The steel wire activities in India and China delivered robust growth.

Underlying EBIT was € 51 million, 11% lower than last year and resulting in a margin on sales of 3.4%. Several factors accounted for the profit decline: the low volumes in North America, South East Asia and some business areas in EMEA; the structurally weak performance of a number of plants, which drove the decision to close two production plants; and the sharp wire rod price decreases and obsolete inventories led to inventory valuation corrections at year-end.

In 2019, we also started to see the benefits from recent profit restoration programs and we expect to see further margin improvement in 2020.

The one-off items related to the plant closures and various restructuring programs totaled € 25 million and are driving the decline in reported EBIT.

Capital expenditure (PP&E) was € 28 million and mainly included investments in Slovakia, China, the US and Chile.

Actions to realize our ambitions

Footprint adjustments and turnaround programs

To restore profitability and react to the deteriorating market conditions in certain markets, we have decided to close the production facilities in Shelbyville (Kentucky, US) and Ipoh (Malaysia). Where we do see possibilities for a successful turnaround, we invest in new markets, in production capacity, and in team capabilities. Examples of such profit restoration programs where we have started to see the benefits in the course of 2019 are Qingdao (China), Bradford (UK), and Prolco (Colombia).
Turning around business activities in China and Colombia

Bekaert Qingdao in China improved its operational capabilities with new technologies and investments. They succeeded in significantly improving the product quality and mix and in growing volumes to much higher levels. Doing so, the team turned the plant profitable and realized good margins in 2019.

Proalco-Bekaert in Colombia had been suffering from weak competitiveness and margins in the past years. The turnaround actions implemented in 2019 have proven to be very successful. The new management team engaged all employees in implementing the Bekaert Manufacturing System, hereby realizing major cost savings and better standardization. In addition, several actions were implemented to improve the product mix of the plant. In 2019 Proalco-Bekaert achieved strong margin growth and brought down the working capital to less than 3% on sales at year-end.

Downstream integration in growth markets

The business unit sees downstream integration and strategic alliances as an opportunity to grow good margin business activities in promising markets. A first partnership was concluded at the end of 2019 with the creation of the AGRO-Bekaert joint venture.

Bekaert and AGRO International establish joint venture to produce mattress spring systems in Colombia

To expand beyond our core, we have established a joint venture with AGRO, a world leading manufacturer of high quality innersprings, to develop and produce high-end steel wire mattress spring systems in Colombia. Where Bekaert will contribute steel wire technology and regional market expertise, AGRO brings in steel spring technology and sectorial market know-how. AGRO-Bekaert Colombia SAS will start operations in the 2nd quarter of 2020 and will co-develop, manufacture and promote superior value solutions for mattress and upholstery manufacturers in Colombia, Central America and the Caribbean. Experience and expertise come together in a brand new production site in Barranquilla, Colombia, to make this ambition real.
Winds of change in energy markets

Renewable energy trends create opportunities for the armoring wire portfolio of Bekaert Steel Wire Solutions.

A-magnetic armoring wire helps reduce wind power energy losses

Submarine power cables transfer electricity from offshore wind farms to land. Bekaert’s a-magnetic armoring wire with galvanized stainless steel lowers the total cost of ownership by reducing energy losses and heat dissipation, and offering a predictable and reliable coating lifetime.

Thanks to its low permeability, stainless steel reduces energy losses in the armoring that otherwise occur by the cable’s magnetic field. This increases the cable’s efficiency without having to change the cable design, as is the case with other armoring solutions. In addition, a-magnetic armoring helps reduce the need for insulation materials to prevent heat dissipation, which is a technical and environmental concern for HVAC cable manufacturers. Finally, the heavy zinc layer protects the wire against pitting and crevice corrosion.
SPECIALTY BUSINESSES

The business unit Specialty Businesses comprises four sub-segments that serve different markets. These sub-segments are: Building Products; Fiber Technologies: Combustion Technology; and Sawing Wire. The characteristics they all have in common are their high-end product portfolio and advanced technologies, and their continuous search for lightweight solutions and environmentally-friendly applications.

Building Products develops and manufactures products that reinforce concrete, masonry, plasterwork and asphalt. Fiber Technologies offers high-end products for filtration, heat-resistant textiles, electroconductive textiles, the safe discharge of static energy, and sensor technologies. Combustion Technologies targets heating markets with environmentally-friendly gas burners and residential and commercial heat exchangers. Sawing wire develops and produces core wire and diamond wire for photovoltaic and semiconductor wafer markets.

TECHNOLOGY LEADERSHIP

Our market share in steel fibers for concrete reinforcement and in thin metal fiber markets

GROWTH DRIVERS

- technology
- infrastructure spending
- sustainability trends
- lightweight solutions

LOCAL SERVICE THROUGH OUR GLOBAL FOOTPRINT

- 1,492 employees
- 11 manufacturing plants
- 414 million in revenue

OUR AMBITION

expand our leading positions in growth markets and push the boundaries of application opportunities

DID YOU KNOW?

- Dramix® steel fibers use 50% of the steel weight of traditional concrete reinforcement solutions and reduce the thickness of concrete slabs up to 15%
- From 4 meters of wire rod, we draw a 1μ thick fiber long enough to span the globe

NEW PRODUCTS AND APPLICATIONS

- Murfor® Compact masonry reinforcement
- Fortilux® asphalt reinforcement
- Aluminum heat exchangers
- Thin metal fibers for smart glass and (RFID) textiles, hydraulic fluid filtration, sensor technologies, and composite reinforcement
Economic environment and growth indicators

Building Products represents the largest part of the business unit's sales. Demand for Bekkaert's Dramix® steel fibers for concrete reinforcement was strong throughout the year. The recently launched Murfor® Compact masonry reinforcement and Fortiflx® asphalt reinforcement generated steady growth from a still limited - start-up - production basis.

The Fiber Technologies activities saw a demand drop in diesel particulate filter media due to the slowdown in automotive OEM, offset by increased business in other sectors. The sudden stop of subsidies supporting the coal-to-gas conversion program in China affected demand for gas burners and heat exchangers in the country. The sawing wire market remained very competitive.

Our performance in 2019

The business unit Specialty Businesses reported about stable sales, with significant differences between the respective activity platforms.

Building products achieved +6% revenue growth in 2019. The organic growth (+5%) was equally driven by strong volumes and a positive price-mix and currency movements added +1%. Fiber technologies reported stable sales for the year after a strong fourth quarter and the combustion activities ended the year 4% below the revenue of 2018. Sales of (diamond) sawing wire were limited.

Underlying EBIT doubled to € 52 million at a margin of 12.2%, mainly driven by a strong underlying performance of the building products activities and reduced losses in the sawing wire business. Reported EBIT included one-off elements (€ -18 million) that are mainly related to the closure of the Belgian building products plant and to losses generated by social actions in the Belgian sites of the business unit.

Actions to realize our ambitions

Expanding our footprint and market territory

Building Products is targeting new regions with its latest generation of products, including Murfor® Compact for masonry reinforcement, Fortiflx® asphalt reinforcement and Dramix® 4D and 5D steel fibers for concrete reinforcement.

We are ramping up production capacity in the Czech Republic and India. Those two locations will, together with Indonesia, act as global export hubs next to a number of smaller production units that address local market needs in, e.g., China, Russia and the US.

Accelerating growth in underground applications

With the buy-out of Maccaferri's 50% stake in Bekaert-Maccaferri Underground Solutions, Bekkaert confirmed its ambition to grow faster in the tunneling market and other underground applications of Dramix® steel fibers for concrete reinforcement.
Pushing the boundaries of strength in lightweight materials

Fiber Technologies has developed innovative thin metal fibers to reinforce composite materials. Lightweight composite materials are usually prone to explosive and unexpected breaking, which is a current struggle for the composite industry. Adding metal fibers creates a composite material that absorbs more energy, is stronger and electrically conductive. This promising technology brings advantages to segments where impact resistance, durability and safety are essential, without compromising on weight. Bekaert is targeting applications in sports, aerospace and automotive.
BRIDON-BEKAERT ROPES GROUP

As a truly global ropes and advanced cords solution provider, Bridon-Bekaert Ropes Group is committed to be the leading innovator and supplier of the best performing ropes and A-Cords for its customers worldwide. The unique combination of technologies in steel wire ropes, synthetic ropes and advanced cords (A-Cords) enables strong differentiation in high-end markets.

BBRG-ropes has a leading position in a very wide range of sectors, including surface and underground mining, offshore and onshore oil & gas, crane & industrial, fishing & marine, and structures.

The A-Cords business of BBRG develops and supplies fine steel cords for elevator and timing belts used in construction and equipment markets respectively, and window regulator and heating cords for the automotive sector.

THE WORLD'S PREMIER ROPES AND ADVANCED CORDS SOLUTION PROVIDER

GROWTH DRIVERS
- technology
- oil & gas investments
- mining activity
- infrastructure spending

LOCAL SERVICE THROUGH OUR GLOBAL FOOTPRINT
- 2,200 employees
- 17 manufacturing plants
- 489 million in revenue

OUR AMBITION
be the leading innovator and provider of the best performing ropes and a-cords globally

DID YOU KNOW?
Our high-performance ropes challenge temperatures as low as -60 degrees Celsius to mine ores & minerals at extreme depths.

STEERING FOR GOLD
The steering system of the 2019 winning car in the Australian solar race was equipped with a lightweight a-cord developed by Bridon-Bekaert Ropes Group.

The 185 meter diameter ferris wheel in Singapore uses our ropes to let passengers enjoy the skyline.
Economic environment and growth indicators

2019 saw continued challenging market dynamics in BBRG’s core ropes sectors. The oil extraction companies remained in balance sheet repair mode with rather limited capital expenditure. Mining markets returned to modest growth in a transformed competitive and operating landscape, which also applied to the crane & industrial sector.

Weak automotive OEM activity affected demand for regulator and hoisting cords in the A-Cords business, while demand from hoisting and timing belt markets held up well.

In ropes markets, BBRG is a market and technology leader competing with four other global players and a very high number of local and regional players. Growth drivers for the ropes business of BBRG are: the activity levels and investments in mining and oil & gas; the technology shift to smart mining solutions and high-performance and long-lifetime steel; synthetic and hybrid ropes; and value creation to customers driven by a reduction in total cost of ownership and excellence in servicing.

In advanced cords (A-Cords) markets, BBRG is a market and technology leader in elevator and timing belt markets. Co-creation, continuous innovation, and investments in construction and industrial markets are considered the main growth drivers for the business.

Our performance in 2019

Bridon-Bekaert Ropes Group (BBRG) achieved 6.5% top line growth, which stemmed from solid organic growth (+4.2%) and favorable currency movements (+1.2%). The organic growth was the result of an improved product- and price-mix in ropes and firm sales growth in advanced cords (A-Cords).

The ropes business of BBRG booked solid sales growth in oil & gas, mining, and crane & industrial applications. In fishing and marine markets, sales volumes were about stable compared to last year. The project business applications reported lower sales than the previous year due to a slow start in construction markets at the beginning of 2019.

The ropes activities made significant progress in enhancing the business mix by focusing on quality business and by reducing their presence in the lower margin segments. This strategy accounted for a volume decrease of 8% compared with last year, while increasing revenues and margins.

The A-Cords activities saw continued strong demand in timing belt markets and an uplift in hoisting applications in the second half of the year.

Underlying EBIT and EBITDA improved significantly as a result of successful profit restoration actions. Reported EBIT was € 9 million and included € -3 million in one-offs. The EBITDA margin more than doubled from last year to reach 8.1%.

BBRG invested € 14 million in PP&E, most of which in the A-Cords platform and in the ropes plants in the UK and the US.
Actions to realize our ambitions

**Profit restoration**

Profit restoration is a key priority for Bridon-Bekaert Ropes Group. The actions implemented in 2019 have started to show their effect in the margins. The business unit will continue to improve its business mix by better segmentation and further innovation. Cost-efficiency actions, scale improvement and footprint optimization will add to the profitability of the business in coming years.

**Ropes 360**

To develop its potential as a total solution provider, Bridon-Bekaert Ropes Group has created Ropes 360 services. Through Ropes 360, we support and advise our customers throughout the lifecycle of the ropes, maximizing the safety of their operations and the ropes’ operational life and hence, reducing the cost.

Our dedicated rope technicians and engineers offer complete solutions from rope installation, over rope inspection to post-retirement feedback. This enables our customers to avoid the high costs associated with equipment downtime. The Ropes 360 model acts as an infinite continuous improvement cycle: the more we know, the better we can develop high-quality ropes and services in support of our customers.

**Largest crane in the world uses Bridon-Bekaert Ropes**

BBRG has supplied the ropes used for the world’s largest landside crane, designed and operated by Sarens. The crane can lift 5,000 tons thanks to a maximum load moment of 260,000 tons and addresses a demand from construction clients to transport and lift pro-assembled large and heavy modules.