

 **BEKAERT**

better together

## Heatable textiles



Flexible and durable solutions for heatable textiles

## Bekaert in a nutshell

- Customers in over 120 countries and in diverse markets and sectors
- A world market and technology leader in steel wire transformation and coatings
- High investments in research and development
- An international team of R&D specialists
- 27 000 employees worldwide
- Listed on Euronext® Brussels (BEKB)
- Headquarters in Belgium
- Founded in 1880
- Combined sales in 2012: € 4.4 billion
- Consolidated sales in 2012: € 3.5 billion



## Imagine what we can do for you

Are you looking for a heatable solution that has the highest durability without compromising the workability and the comfort in case of usage in clothing? Bekaert's steel based fiber bundles can do the job. You can choose from a whole product range with different grades of electrical resistance and construction. Our high corrosion resistant heating cables deliver warmth without sacrificing convenience.

## Working with you

Co-creation is an important part of our way of working. We want to think with you to take your ideas from a thought to a product. We do not believe in a "one size fits all" cable for all our customers and all different heating applications. For each situation, Bekaert creates a customized solution. Your benefit? Our filaments ensure a safe, reliable solution that heats exactly where you want it.

## Your partner in innovation

Making cables is our expertise. But we can go past that ... We have the ability to help you designing the heating element you need, consisting of different kinds of fiber filaments. In addition, we can go beyond the heating cable and integrate a semi finished solution to bring you closer to what you require. Together, we can discover new ways in which Bekaert heating cables can be used for you.

## A global partner, close to you

For 130 years now, customers in more than 120 countries have continued to work with Bekaert. Working with us means you can count on local contacts that speak your language and are close to your business. Our presence in just about every sector is a unique strength, both for Bekaert and for our customers.

# Provide for the future with our heating cables

Bekaert's stainless steel fibers for heatable textiles have a consistent quality, an outstanding lifetime and superior corrosion resistance. Choosing Bekaert is choosing for more than just heating. We offer a much higher flexibility and durability than copper or carbon, as well as more comfort.

You can choose our heating cables in different alloys depending on the electrical resistance and the corrosion resistance you need. Our aim is to deliver a tailored cable solution with a superior lifetime and is soft and easy to process. They can be installed close to the surface of the object to reduce the warm-up time.

Complex heating systems are made simple and efficient by using our cable solutions. Our cables can be integrated in small circuits to enhance the warmth proximity with a freedom of design.

The role of our cables is to ensure efficient and higher quality to your end product. We can insulate our filaments individually to guarantee a secure heating and to prevent hot spots in the material. An overall extrusion coating increases further durability and corrosion resistance and offers of course the needed electrical insulation. Our tailored cable constructions, consisting of fiber bundles or filament constructions, can offer you the needed flexibility to design the heating element of the future. Different base materials and combinations of constructions are possible to offer the best solution for each customer.

## Heatable textiles: your source of heat in everyday life

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One of the basic needs of human people is warmth. For lack of natural warmth, especially in winter time and in the colder parts of the world, people have to turn to generated warmth.



## Automotive

Bekaert is market leader for continuous stainless steel fiber bundles in the car seat heating industry for many years and build up a strong reputation for its products and quality. Our customers prefer our Bekaert Bekinox® VN products because of their extreme durability and high corrosion resistant properties. The softness of our Bekinox® VN guarantees easy processability and a high seat comfort.

In other automotive applications such as the emerging projects related to use Diesel Exhaust Fluid (AdBlue®) and for example battery heaters we also are a key player in the development of these new applications.



## Consumer goods

Our fiber-based heating cables can also be integrated in textiles such as clothing, gloves, shoes, blankets and sleeping bags to provide safe and comfortable heating. In the same type of applications, our steel filament cables secure their position, still being stronger and with a higher resistance than copper. It is clear that, together with you, the number of possible applications is huge. When you least expect it, you can find our products: panel heaters used in households for extra heating during colder mid-seasons and even the hot meals in hospitals stay warm thanks to the dish heater containing electrical cables. We are constantly looking to discover new boundaries of our heating cables.



## A world of possibilities

In our fast moving world, would you be surprised if you could hang heatable wallpaper? What a relief it would be, if planes could take off on time on a runway permanently kept clear of snow. Imagine roofs and solar panels without snow. Even local heating on particular parts of the body, can be today's reality.

Or maybe you have another idea? Count on Bekaert to create new solutions for your company. We have the willingness to explore your previously uncharted markets. We have the contact people to think with you and we have the engineering know-how to make it work. Our experience in heatable textiles means we can tailor a solution for you, one that meets the balance between flexibility in design, durability, corrosion resistance (washability) and comfort. You can rely on Bekaert to help you bring a new idea into reality.

## Global presence to support your business

Your need for worldwide service is met just around the corner.

The close proximity of our warehouses and plants to your production sites results in a constant supply of heatable textiles, fast deliveries and minimal inventory held in your sites. Our strategic presence in different regions guarantees a flexible and just-in-time supply, even at the last-minute.

Furthermore, you can count on our local sales and service teams for technical commercial support. Dedicated account managers work closely with you on your project and can advise you about how our heatable textiles can fulfill your needs.

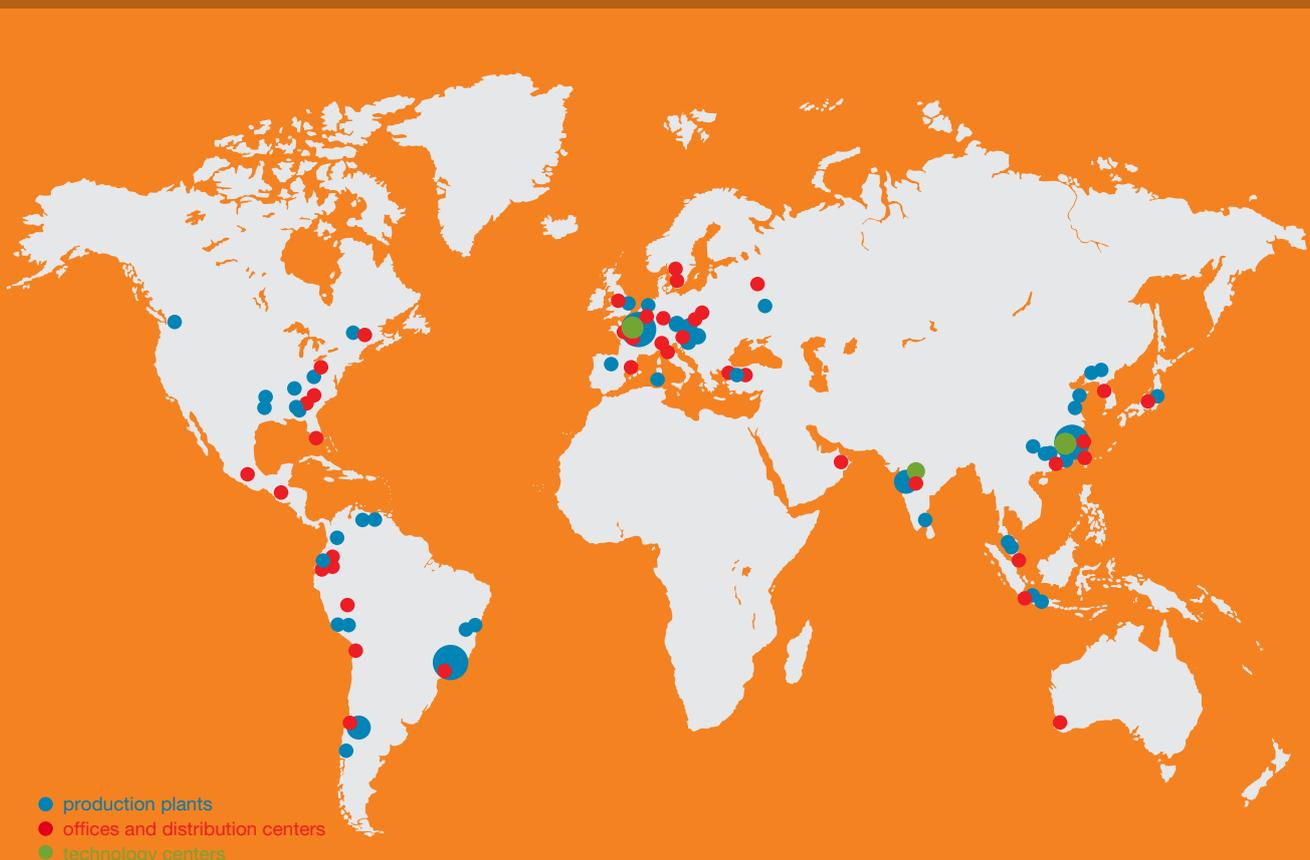
## Developing for tomorrow

Being at the forefront of technological evolution is one of our key pillars.

We attach particular importance to co-development, starting from highly specific problems or business situations because, to us, innovation is a continuous improvement process.

Our technology centers are equipped with lab facilities for both fundamental and applied research. This allows us to develop solutions that are customized for your business, so that you benefit from shorter development cycles and consistently reliable product quality.

At Bekaert, R&D goes beyond product development. We can assist you to reach new markets with products in innovative applications.



# Product portfolio based on your needs

When you partner with Bekaert, you can rely on a diversified product portfolio, combined with innovation and operational excellence.

Bekaert steel filament cables are engineered to your needs. We control the quality of products made for you from the wire rod to the heating cable. We focus on making cables and insulating them. But there is room for more. We can apply embroidery techniques for particular cases or develop special applications.

Starting from your requirements regarding electrical resistance, corrosion protection, lifetime and insulation, we can tailor a cable to your needs.

On the one hand, we offer Bekaert Bekinox<sup>®</sup> VN/HT stainless steel fiber bundles; having a very precise electrical resistance and a superior lifetime which results in a high flex life. On the other hand, we supply the Bekaert Bekiflex<sup>®</sup> range of tailored steel cable constructions with different resistance ranges depending on the steel alloy.

## Total Quality Management

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Maintaining a high level of quality is a continuous process. That is why our quality procedures are regularly evaluated and why we use the feedback of our customers to do so. Our extensive quality control and defect filtering offers a consistency warranty while eliminating excessive waste and safeguarding the quality of your product. Choosing Bekaert is choosing for a high performance product supported by Total Quality Management.



## How can your company benefit from Bekaert heatable textiles?

### Building close partnerships

We want to work with you to better understand your needs.

It's a pre-condition for building close partnerships that result in solutions that work for your company. With control over the entire production process, the fibers can be developed with the product properties you need. We have the ability to draw wire in ultra-fine diameters and to find unique coatings. We can tailor our product to offer you specific electro-conductive and heat resistant characteristics. Your results are oxidation resistance and stress-free performance.

If you want to find out how our high quality fibers, filaments and yarns can work for you too, we are happy to advise.

Please contact your local Bekaert specialist.

[www.bekaert.com](http://www.bekaert.com)

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