

HDPE sheathed stay cable strands

Queensferry Crossing (Scotland)

Extend the life-time of your cable stayed bridges and structures

Benefits

1

100 year
service-life

2

Short-time delivery of
large volumes

3

Marked-to-length master
strands for easier
installation

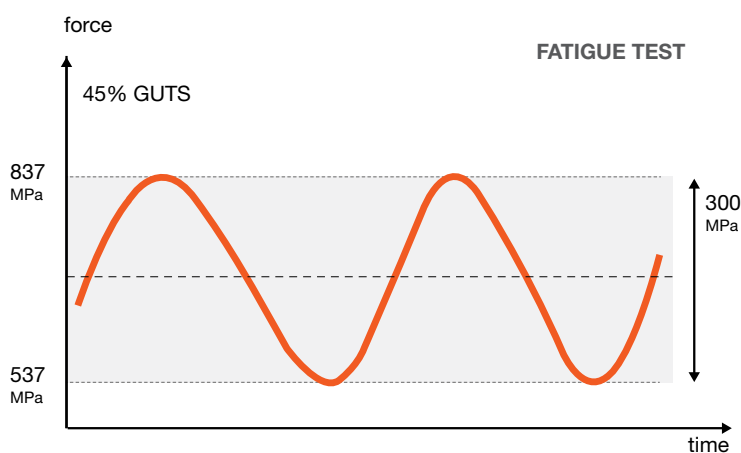
Increase the safety and long-term reliability of your stay cable structure with Bekaert's highly ductile, high tensile strands. These robust, seven wire strands comply with the international breaking load and fatigue standards.

Bekaert cable stay strands consist of waxed galvanized or Bezinal® 3000 coated steel wires which are tightly extruded with an HDPE sheath. To assure that these strands meet your most demanding specifications, production is closely monitored by advanced on-line measuring devices.

Robust fatigue resistance

Bekaert HDPE extruded cable stay strands comply with stringent fatigue requirements.

Their performance is measured by applying the Fib and PTI recommendations for stay cable design testing. Our strands successfully pass the pull-pull fatigue test of 2 000 000 cycles (see the figure), leading to more durable stay cables. As a result you'll be able to reduce total cost of ownership as well as increase the safety of your cable stayed structures. Our strands have successfully passed the multistrand fatigue tests at laboratories in Braunschweig, Bochum, Munchen, Vienna and CTL.



HIGH SERVICE FLEXIBILITY

Bekaert production facility includes high-end production machinery including brand-new extruding and stranding equipment. Our advanced machine park allows us to increase our production capacity to meet even the largest projects. To further reduce time, money and waste, Bekaert is able to supply volumes up to 4,5 tons per coil. Master strands are supplied in pieces marked to exact lengths for your installation convenience.

Our global presence means that your products are manufactured to strict international standards of safety and quality. Our local support means that we are at your service at all times. In the event of a question or concern, a trained professional will respond to you as soon as possible. Whatever your application, we will work closely with you. Together, we will create a lasting solution that answers your needs.

Super high tensile

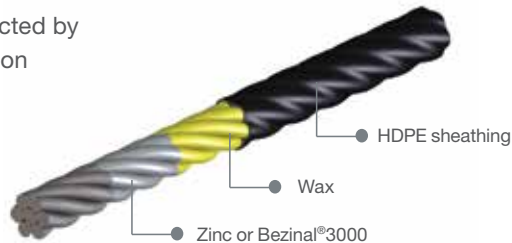
Bekaert's super high tensile wire for cables stay bridges is based on a strong track record in deep water mooring. With tensile strengths up to 2 200 MPa and high ductility, these wires feature excellent breaking load and fatigue properties.

Strands that support a 100 year bridge life

Bekaert's HDPE sheathed strands are designed and produced to meet the 100 year design life of cable stay bridges. To meet the required lifetime, the strands combine advanced corrosion protection with excellent mechanical properties;

Multilayer corrosion protection

The strands are protected by three layers of corrosion protective coatings;



➤ BEZINAL®3000

For applications in which a long service-life is crucial Bekaert offers and recommends the advanced zinc aluminum coating Bezinal®3000 (95% Zn + 5% Al). This coating complies with NFA 35-035 (190 – 350 g/m²) and offers superior corrosion and cathodic protection.

Strands made of wires coated with Bezinal® 3000 last up to 4 times longer than galvanized strands when exposed to pollution or marine environments. Higher coat weights and zinc coatings are available on request.

Salt Spray Test according to:

- DIN SS 50021
- ASTM B117
- ISO 9227

Conditions:

- 100% Relative humidity
- 35°C
- 5% NaCl

➤ WAX

Covering the metallic coating is a top quality wax coating that has been specifically designed for stay cables. The coating is completely water resistant, features high mechanical stability, and offers excellent corrosion resistance.

➤ HDPE SHEATHING

The final coating, an HDPE sheath, consists of pure PE that has been tightly extruded around the strand. The standard wall thickness of the sheath is 1.5mm, though thicker sizes can be produced upon request.



St. Lawrence Corridor (Canada)

PROJECT HIGHLIGHTS

Bekaert has a long track record in providing wire, strand and cable solutions for a wide range engineering structures, including cable stayed bridges. Some biggest and most recent projects that used Bekaert's HDPE sheathed stay cable strands are:

- Queensferry Crossing (Scotland)
- Balang bridge (Indonesia)
- St. Lawrence Corridor (Canada)



Minimum hours exposure salt spray before appearance of 5% DBR (Dark Brown Rust)

Bezinal® 3000 2500 hrs

Bezinal 1500 hrs

Zinc 400 hrs

● Minimum coat weight 190gr/m² - end drawn wire

Master strand

Our state-of-the-art laser based measuring line is periodically calibrated to meet very narrow tolerances. This allows us to produce reference strands with precision tolerances up to 0.005% (equals 5 mm tolerance on 100 m of strand)

Product specification

Nominal diameter	15,20 or 15,70 mm
HDPE wall thickness	1,5 mm (+0,5)
Body mass (inclusive HDPE coating)	1,20/1,30 kg/m
Nominal section	140 / 150 mm ²
Tensile strength	1860 Mpa
Breaking load	260 / 279 kN
Elongation at break	≥ 4.5%
Max. relaxation at 1000 hours, 20°C	< 2,5% (initial tension 0,7 F _{ma})
Elastic modulus	195 GPa + 5%
Coating	Bezinal® 3000 or galvanized redrawn acc.to NFA35-035 190-350 g/m ²
Fatigue resistance	meets NF A35-035 and ISO15630-3 > 2 000 000 cycles

This table describes standard specifications. For other specifications contact your Bekaert sales representative.

Constant quality control

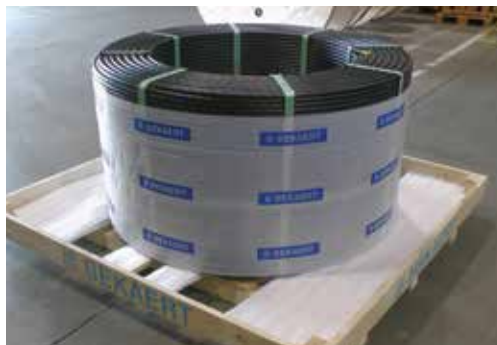
As all process operations such as wire drawing, galvanization, stranding, extrusion and packaging are carried out in-house; Bekaert can ensure continuous high quality control even for the most demanding specifications.

To meet high quality standards, following automated operations are executed online:

- Online surface defect control
- Wax presence
- Diameter, length, HDPE thickness, surface defects and HDPE centricity
- Final HDPE surface control
- Online metallic coating layer monitoring

Packaging

- Wooden drums (recommended weight: 2,8 tons)
- Coils on a palette (carries 2 - 4, 5 tons)
- Tailor made sizes on request



Why choose Bekaert?

Advanced testing facilities

Our R&D facilities are able to apply a wide variety of tests to investigate the quality, corrosion resistance and service life of our products in different applications and environments. In addition to the standard tests, our labs can also develop specific tests on request and perform outdoor exposure testing.

Our experience, your success

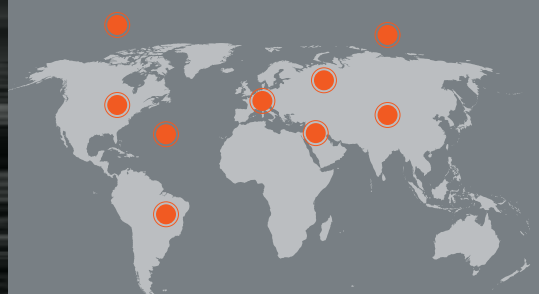
Because of the wide variety of industries we work in, we can incorporate the skills we have developed across our platforms to discover new products or solutions for you.

Customer-driven innovation

Together with customers and independent research partners, we are able to create new solutions that keep up with the industries' evolving needs. Our in-house engineering department develops machinery, testing and process equipment to bring those new products to reality.

Your strategic partner

We are always near. With production facilities at strategic locations across the globe we operate in over 120 countries. This means the products and service we offer to you are consistent, world-wide.



Bekaert is a world market and technology leader in steel wire transformation and coating technologies.

To be the preferred supplier of steel wire products and solutions, we consistently deliver superior value to our customers worldwide. Bekaert (Euronext Brussels: BEKB) was established in 1880 and is a global company with approximately 30 000 employees worldwide.

Contact us

More
Information?

For more information about our products contact us at Bekaert Hlohovec a.s.

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