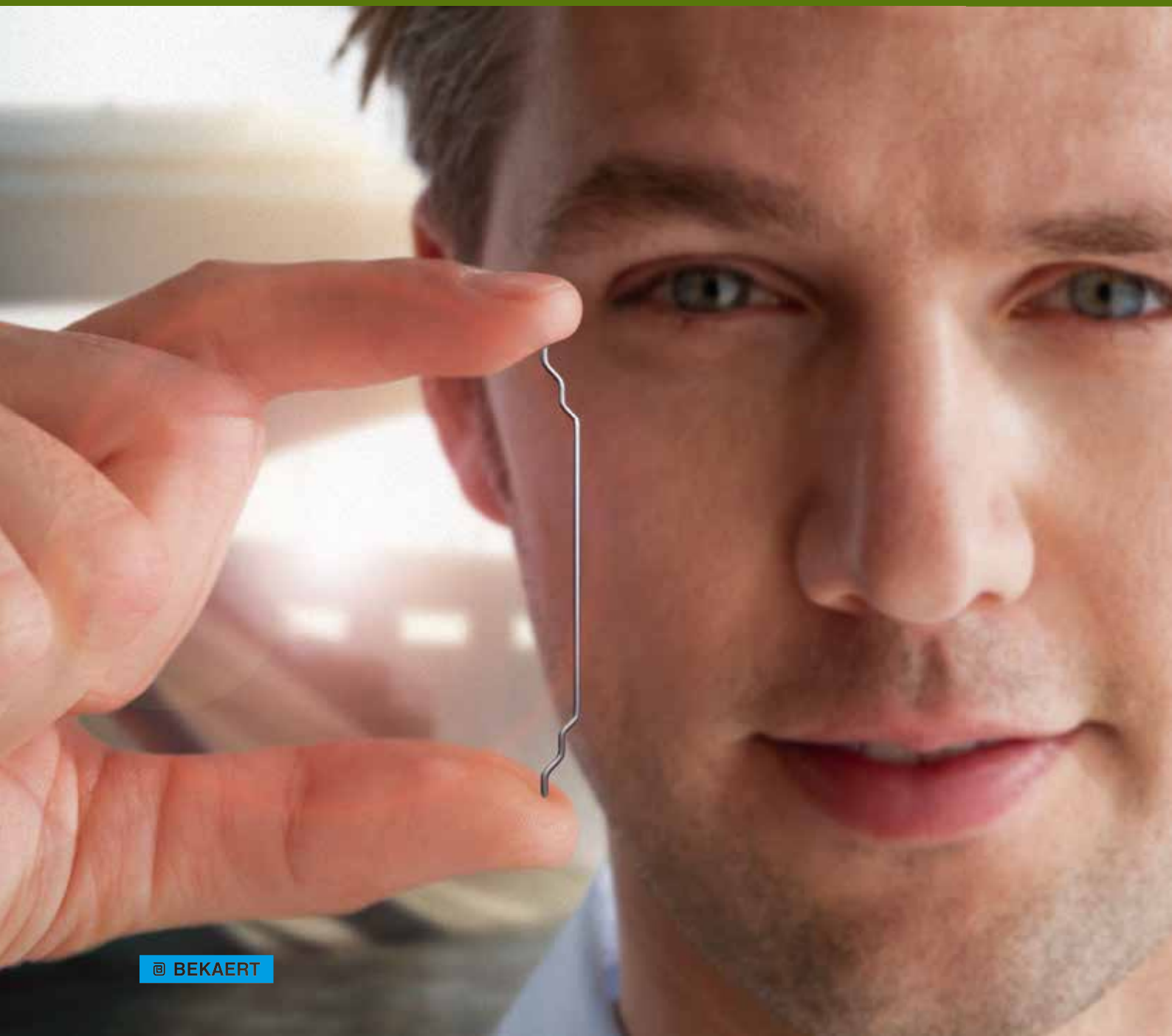


# Dramix<sup>®</sup> Steel Fibres

 **BEKAERT**

better together

**Simplify your factory, Diversify, Produce cheaper**



 **BEKAERT**



A photograph of a modern bridge with a curved concrete structure and a wooden deck, spanning a body of water. The bridge features a series of curved concrete arches and a wooden deck. The water is visible in the foreground, and the sky is in the background.

**use fibres  
to free  
your sense  
of creativity**





# Discover a world of concrete innovation

07 New reinforcement possibilities  
08 Dramix® 5D NEW  
09 Product range  
10 Automatic doser  
11 Conditioning  
12 Mechanical characteristics

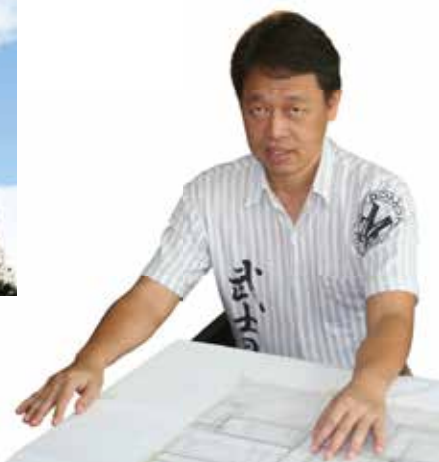
13 Which fibers for which applications  
14-15 Modular housing  
16 Where to find us



“

“Dramix® is positive proof that advanced technology does make a difference. It enables us to innovate and create with concrete, reinforcing even the most demanding structures. At the same time, it allows us to work faster and save costs – both crucial factors in our business.”

M. Jumrus Kongsiri  
Owner of J Plus Engineering Consulting Co., Ltd & Registered  
Engineer  
Bangkok, Thailand







# Steel fibres creating new levels of concrete reinforcement



**With its brand new range of Dramix® products, Bekaert is taking steel fibre reinforcement to a whole new level. Stronger, safer, and more durable. And even more convenient to use. But most of all, opening up a new world of possibilities for you to create with concrete.**

## **An updated and expanded range**

Bekaert has redesigned and expanded its Dramix® range of steel fibres for concrete reinforcement. The existing range of steel fibres has been rebranded as the 3D series. It remains widely recognized as the best solution currently on the market when it comes to performance and cost-efficiency. However, with the introduction of two brand new fibre series in the Dramix® range, Bekaert is again leading the way and taking steel fibre reinforcement to the next level.

## **Unique shapes, unique capabilities**

The unique shape of the new Dramix® 5D and 4D fibres already speaks for itself. Engineered to perfection, the new Dramix® steel fibres offer previously unavailable levels of anchorage, tensile strength and ductility, guaranteeing maximum performance. At the same time, they enable the building industry to use steel fibre reinforcement in a wide range of new applications. Whatever your project, Dramix® provides you with the best possible solution.

## **Years of research and innovation**

As a pioneer in the field, Bekaert decided to use all of its know-how and expertise to take steel fibre reinforcement one step further. Because at Bekaert we believe steel fibres are now more than ever the future of concrete reinforcement.

Reduce or completely eliminate  
your traditional reinforcing bars



### Unseen levels of performance

The Dramix® 5D series provides you with the ultimate in performance, thanks to a unique combination of a perfectly shaped hook, a high ductility wire, and extreme tensile strength.

#### > Heavier loads, longer spans

Its outstanding performance in concrete makes the 5D the perfect solution for structural applications, including foundation slabs, rafts, and even suspended structures.

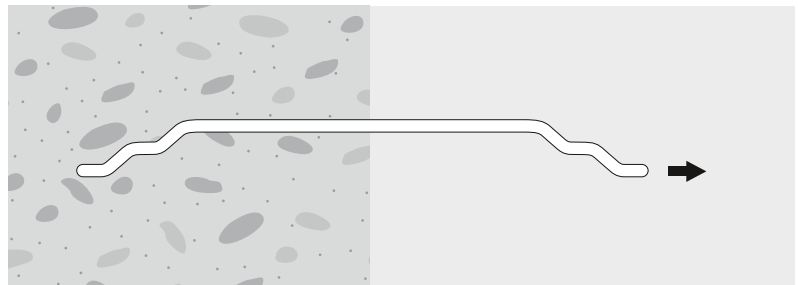
#### > For the most demanding conditions

The 5D offers excellent performance throughout the years – even in the most demanding applications and in the most difficult circumstances.

#### > No limits to your creativity

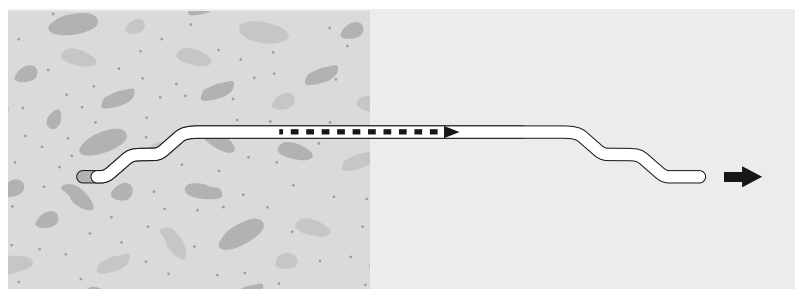
Because of its unique features and capabilities, the 5D series pushes back the boundaries of what was thought possible with steel fibre reinforcement. Now the only limit to create with concrete is your own imagination.

The 5D series replaces structural steel solutions.



#### Non-deformable hook

The improved hook of the 5D fibres is non-deformable, providing perfect anchorage, and keeping the fibres firmly in place inside the concrete.



#### Ductile wire

The ductile wire of the 5D series elongates while the hook remains firmly in place, enhancing both the strength and the ductility of the concrete.

isotropic reinforcement  
that fits to all frames



# Established Productions



Applications produced with DRAMIX steel fibres :

also available :

Helical staircases, gutters,  
tanks, floaters...

## use simple sustainable sturdy equipment, fully integrated in your production cycle

For more than 20 years, BEKAERT has been providing or installing fibre dosers to allow an accurate and automated introduction of the DRAMIX fibres in the concrete, whether self-compacting or not.

This equipment is sustainable because it is simple, and allows the use of DRAMIX fibers, whether packaged in simple bags, or BigBags (see sidebar)



The doser's capacity goes from 150 upto 3000 L which allows a net weight of 50kg to 1200kg (100->2400 lb)

We can introduce you to partners able to study the setting and even install the doser in a perfect professional way



automation and traceability  
of your reinforcement

## A full range for all your reinforcement needs

**5D**  
Dramix®  
NOUVEAUTÉ



**4D**  
Dramix®  
NOUVEAUTÉ



**3D**  
Dramix®



Since its introduction, Bekaert has continuously expanded its Dramix® range with numerous varieties of steel fibres—all in order to meet your exact project requirements. Innovative packaging and delivery methods continually enhanced usability, saving time on the construction site, while at the same time enabling exact dosage and automation. Today, Bekaert provides you with a full range for all your reinforcement needs.

**Coatings:** bright or galvanized.

Different **length/diameter (l/d) ratios** are available in all Dramix® series.

**Glued bundles** (available for all Dramix® series) avoid fibre-balling during mixing and ensure that the fibres are evenly spread throughout the concrete mix. For most basic applications, the lower l/d ratios of the 3D series are available in loose form.

**Packaging.** Dramix® is available in different types of packaging, from 10 kg and 20 kg bags to big bags for large-scale usage. Bekaert also developed the Dramix® Booster automatic dosing equipment enabling you to automate the dosing process using premeasured volumes in water-soluble 250 g bags.

### At your service!

Not sure which type of Dramix® best suits your project?  
Let us know, we'll help you find out!





# Designed for durability

## Anchorage strength

The hooked ends of Dramix® 3D ensure the desired fibre pull-out. This is the mechanism which actually generates the renowned concrete ductility and post-crack strength.

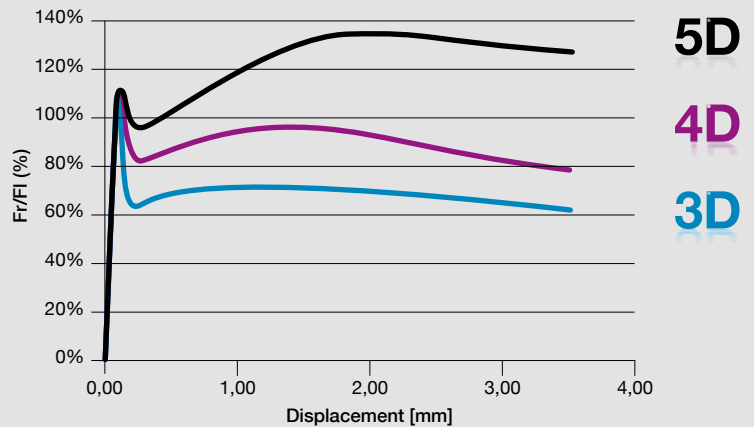
The improved anchorage of Dramix® 4D utilizes the same principle but translates it to greater steel strengths.

Dramix® 5D, in contrast, is shaped to form the perfect anchor; the pull-out mechanism is replaced by fibre elongation.

## Wire strength

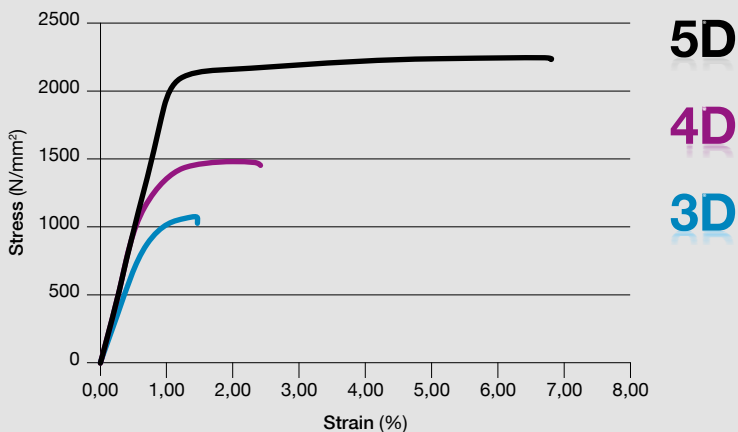
The tensile strength of a steel fibre has to increase in parallel with the strength of its anchorage. Only in this way can the fibre resist the forces acting upon it. Otherwise it would snap, causing the concrete to become brittle. On the other hand, a stronger wire cannot be fully utilized with an ordinary anchor design. Therefore the tensile strength of a fibre has to be perfectly aligned with its anchorage system and its diameter. Dramix® 3D, 4D, and 5D are each designed to capitalize on the wire strength to the maximum degree.

## Steel fibre concrete strength 3D-4D-5D



The different Dramix® series have been engineered to offer optimal concrete strength for different applications. The performance level of the 5D series was only thought possible with traditional reinforcement methods.

## Tensile curves 3D-4D-5D wire qualities



The tensile strength of the 5D, 4D, and 3D series offers different performance levels for different applications. The 5D series combines extreme tensile strength with a very specific elongation capacity, providing previously unseen levels of ductility.

## Wire ductility

Wire ductility and concrete ductility are two different aspects. Dramix® 3D and 4D create concrete ductility by the slow deformation of the hook during the pull-out process, and not by the ductility of the wire itself. This is different for the

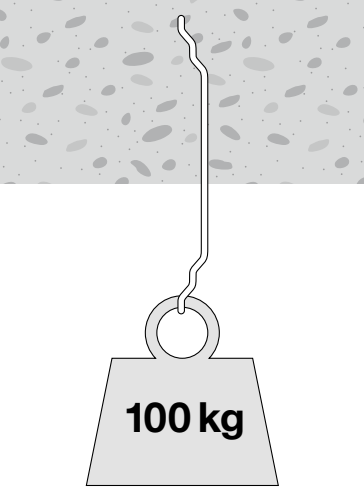
Dramix® 5D. Due to the “perfect anchor” design, the fibre cannot be pulled out and does not move in the concrete. Instead the wire is elongated, providing the ductility on the same principle as classic reinforcement steel. This is only possible with a superior and exceptional quality of ductile steel wire.

shrink your moulds,  
and lighten your elements

# 10 new applications with steel fibres

Bekaert has dramatically expanded its range of high-performance Dramix® steel fibres. We can now offer a specific fibre type for any concrete reinforcement application, from common applications such as floors and foundations to the most demanding structures, including rafts and piled supported floors.

The 5D fibre has the capacity to hold up to 100 kilos, thanks to a smart combination of improved anchorage and precisely engineered wire qualities.



diversify your productions

5D 4D 3D

Buildings and others		5D	4D	3D
Firewalls, pre-walls	NEW			
Civil engineering structures	NEW			
Electric Cabins	NEW			
RailWay supports				
Secondary Reinforcement				
Prefabricated piles	NEW			
Floater				
Sandwich Walls	NEW			
Modular Houses	NEW			

**CHALLENGE US!**  
 Has your project not been mentioned? We know how it can be done better with Dramix®. Ask your Dramix® specialist for more information.

# High potential diversification : Modular Housing



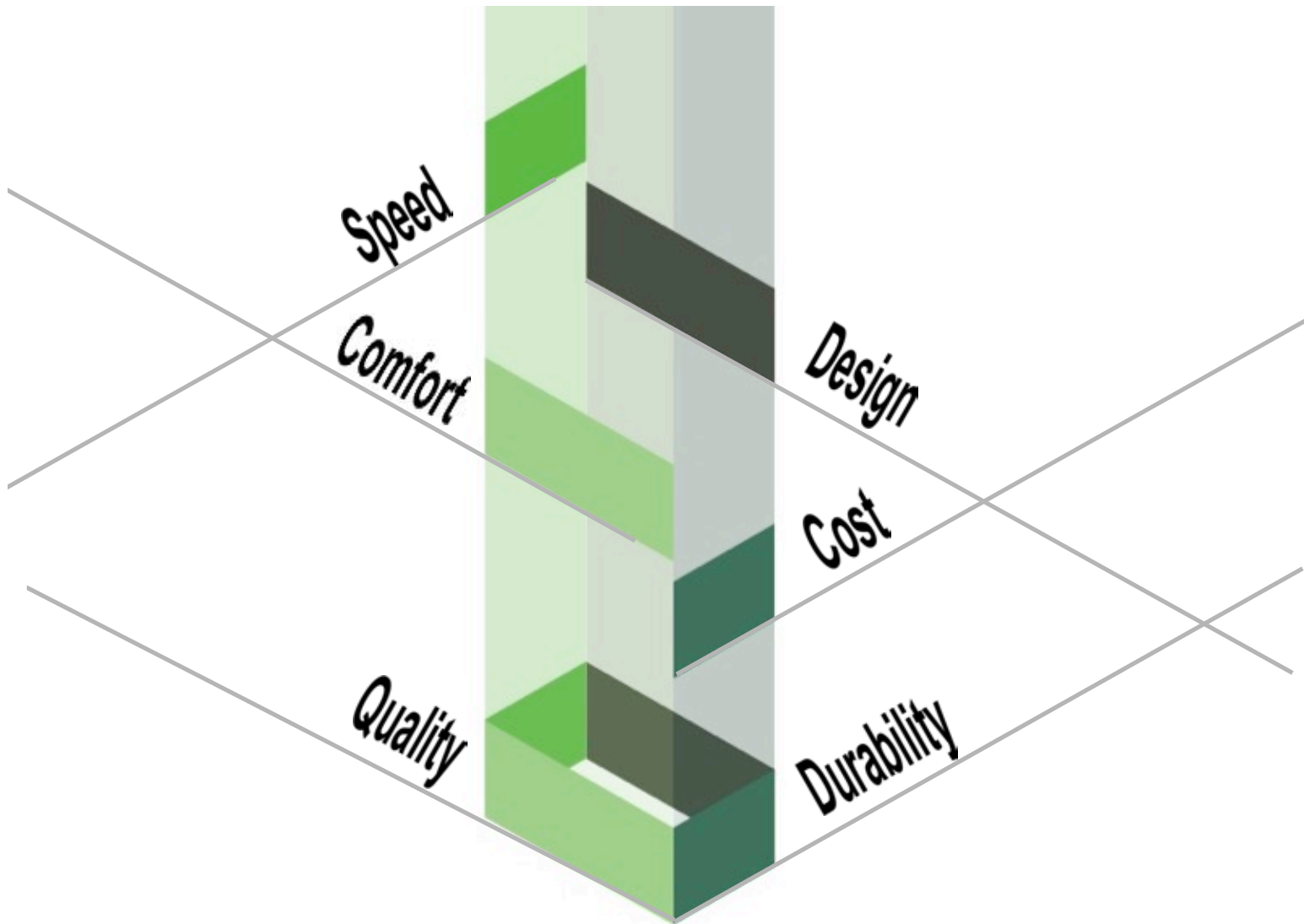
**CUBIK HOME**  
CONCRETE MODULAR HOUSING



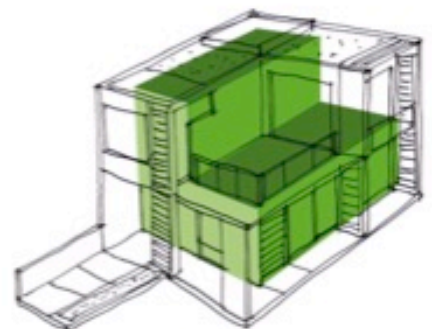
[www.cubik-home.com](http://www.cubik-home.com)



# Circular Economy



## Multiple possibilities



**Bekaert Building Products is part of the worldwide Bekaert Group. We provide building professionals around the world with innovative, high-performance, and durable reinforcement systems. Over the years, we have built up a solid reputation in the**

construction and civil engineering world with our solutions for masonry, plastering, asphalt, and concrete. That should come as no surprise, since our solutions fit the needs of the modern building world in which speed, cost-efficiency, safety, and sustainability are crucial.

#### **Always close to you**

Bekaert Building Products has production plants and sales offices all over the world. This means you can always count on fast delivery, extensive support, and professional advice. Anytime, anywhere.

 **BEKAERT**

better together



Bekaert ([www.bekaert.com](http://www.bekaert.com)) is a global technological and market leader in advanced solutions based on metal transformation and coatings, and the world's largest independent manufacturer of drawn steel wire products.

Bekaert (Euronext Brussels: BEKB) is a global company with headquarters in Belgium, employing 28 000 people worldwide. Serving customers in 120 countries, Bekaert pursues sustainable profitable growth in all its activities and generated € 4.6 billion combined sales in 2011.

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