

# Dramix<sup>®</sup>

 **BEKAERT**

better together

**Green – galvanized steel fibres**



**Environment-friendly reinforcement for concrete**



# What is Dramix® Green?

**Dramix® Green is the NEW galvanized steel fibre type for reinforcing concrete elements with high aesthetic requirements.**

## **Why are these steel fibres bundled together?**

Like almost all Dramix® fibre types, this type is also delivered in glued strips app. 2-3 cm wide. You need this to mix these highly effective steel fibres throughout the concrete. But with our new galvanized steel fibre type it is the glue that makes the real difference: The glue keeps the bundles of galvanized fibres together until they are fully dispersed throughout the cement matrix. With the new developed composition of the glue it is proven that no adverse chemical reaction between fibres and Cr<sup>6+</sup>-free cement takes place! Not only that, this glue is environment-friendly – that's why we call these fibres Dramix® Green.

## **Why does Dramix® have hooked ends?**

All Dramix® fibres are designed with this shape because it offers the best anchorage of each single fibre in the concrete. In case of failure in concrete under stress, the hooked ends slowly deform during pull-out and provide excellent residual flexural strength behaviour. Together with a minimum tensile strength of 1000 N/mm<sup>2</sup> and a Young's Modulus of 210 000 N/mm<sup>2</sup> for the steel wire itself, the anchorage plays an important role in crack control and durability of your concrete products.

## **How can you benefit from Bekaert's commitment to produce high quality controlled Dramix® steel wire fibres?**

Dramix® fibres are made from prime quality hard drawn steel wire. To produce a premium performance steel fibre concrete consistently it is important to use steel fibres with the same high quality in each one. With Dramix® Green you can rest easy, because you know that Bekaert delivers a reinforcement, which is produced and controlled in accordance with the high standard set by Bekaert specifications (available on request). Quality is assured by clear, defined control procedures and external audits. Daily checks on tensile strength, diameter, length, glue and packaging are as much a part of our routine as the production itself.

## **Which Dramix® Green type does Bekaert recommend?**

Dramix® Green are available in performance classes 80 and 65 and at different lengths between 40 and 60 mm. These performance-class figures describe the ratio between length and diameter (l/d) of a fibre. The higher the l/d-ratio the more effective the fibres perform in your concrete elements. The right fibre type depends on the performance of your fibre concrete, the thickness of the final element, the maximum size of the aggregate you use, your production requirements (or the needs of the jobsite) and last, but not least, the most economic solution.

**We are eager to understand your situation and processes. We see this as a pre-condition for building close partnerships that result in solutions that work for your company.**



Glued strips of Dramix® Green



Automatic dosing of Dramix® Green into the mix.



Dramix® steel fibre reinforced concrete is well known throughout the world. Use them in industrial floors, jointless floors, floors on piles, liquid tight floors or heavy duty pavements in industrial areas. For residential construction design rafts, footings, cellar walls or structural screeds in steel fibre concrete. All kinds of pre-cast elements such as walls, septic tanks, sewerage pipes, garages or transformer cabins benefit from Dramix® steel fibres. Tunnelling projects, in sprayed concrete, final lining or in segmental linings all make use of steel fibre concrete. Dramix® can also be found in areas of structures such as slope stabilisation, dams and even underwater concrete: Whenever better crack control, increased ductility, superior load-bearing capacity and last but not least simple handling and fast installation are required, Dramix® steel fibres have established their position as standard material for reinforcing concrete.

## What makes Dramix® Green so exceptional for your concrete products?

**Dramix® Green combines all the known advantages of steel fibre reinforced concrete ....**

- Dramix® steel fibres are made from prime quality hard-drawn steel wire to ensure high tensile strength and close tolerances.
- Dramix® steel fibres easily replace the traditional and complicated layers of mesh, and improve the crack control.
- Dramix® steel fibres are simple to handle. They can be added directly into the mix like any other aggregate, using a conveyor belt or even by automatic dosage.
- Thus Dramix® steel fibres provide homogeneously distributed reinforcement in the full thickness of any concrete element, in the corners and the edges.
- Dramix® steel fibre concrete can be easily pumped, clumping and balling during mixing will not happen, even when using the highest l/d-ratios.
- Therefore, the fibre concrete meets the required residual flexural strength and secures durability in your products.

**... with the unique features of Bekaert's galvanized steel fibre type plus 100% sustainability:**

- Tests at Brite Euram BRPR-CT98-0813, Project No. BE 97-4163, showed that galvanized steel fibres are protected against corrosion even at a crack width of 0,2 mm.
- This means: no spalling and no rust at the surface.
- Dramix® Green fibres use a special environment friendly glue, which even increases the adhesion in the cement matrix.
- 30% higher residual strength compared to loose galvanized steel fibres without this glue! Benefit from the economic and efficient dosage of Dramix® Green.
- Dramix® Green are ready for use with the new generation of environment-friendly (Cr<sup>6+</sup>-free) cements.
- Dramix® Green fibres are 100% recyclable.

**With the Bekaert's advice you will keep the smooth surface of your concrete elements.**



Dramix® Green used since many years in pre-cast garages



With Dramix® Green your pipes meet the high requirements of "EN 1916 - Steel fibre concrete for sewerage pipes".



# The clue is in the glue!



# Bekaert – your strong partner for production and adding value to your concrete

Bekaert supplies a diverse range of high-tech products, systems and services, giving its customers high added value and working in partnership with them to find solutions. Bekaert steel wire fibres reinforce concrete all over the world.

## Why you can rely on Bekaert

Bekaert's Dramix®-technology relies on more than 30 years of experience in the fields of fibre reinforced concrete and its applications. All Dramix® fibres are manufactured in accordance with the ISO 9001 quality system. We look to continuously improve our fibres in international cooperation with universities and research centres. Bekaert brings the best of its expertise right to your desk and gives you help and support wherever needed.

## The specialists in fibre concrete applications offer you

- Consultation
- Design advice and assistance
- Dimension Accuracy
- Proposals
- On site support

## Dramix literature and technical documents

- Approvals
- Publications and test reports about fibre concrete
- Information on concrete standards and much more

## Design on request

- **NEW:** design service online

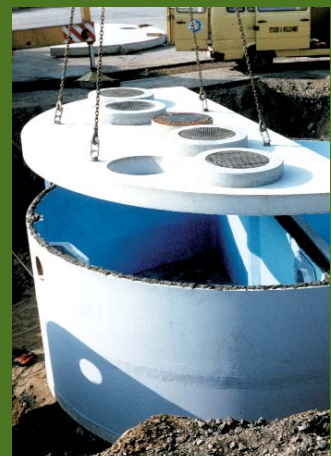
[www.bekaert.com/building](http://www.bekaert.com/building)



Other Bekaert products that might be of interest to you




Dramix® Green for walls



Dramix® Green for septic tanks



Bright Dramix® fibres for industrial floors

A young girl with blonde hair, wearing a red hooded raincoat with white geometric patterns on the hood, is looking down at a dandelion in a field. The background is a lush green field with trees and a bright sky. The image is used as a background for the text on the right.

Since the beginning of 2005 cements and admixtures have to be produced in an environment-friendly way – the use of Cr<sup>6+</sup> is no longer allowed by law. Consequently, galvanized steel in concrete has to deal with a drastic reduction in bond and less reinforcing effect.

## The solution: Dramix® Green steel fibre reinforcement

Benefit from Bekaert's experience based on research and development together with clients and official institutes. We now offer you our most recent product, Dramix® Green, galvanized steel fibre types for reinforcing your concrete elements.

Dramix® Green are superior to any other galvanized fibres as we have developed a special environment-friendly glue, which even increases adhesion. It fits perfectly with the introduction of the new generation of cements. As the fibres are galvanized, the surface of your concrete elements will be without rusty spots. With these fibres you and Bekaert can demonstrate deep commitment to nature and the environment, as Dramix® Green fibres are 100% recyclable.

With Dramix® Green you will not only have a clear conscience about the environment, but you can also be sure, that your products will enjoy enhanced performance.



## How can your company benefit from Dramix® Green – galvanized steel wire fibre?

This brochure explains the solution for your steel fibre concrete elements, cast in place or pre-cast, with high requirements for aesthetics. Discover Dramix® Green, the galvanized steel fibres, which give excellent performance in the new generation of Cr<sup>6+</sup>-free concretes and find out which additional advantages steel fibre concrete will offer you.

If you want to find out how these high quality fibres can work for you too, we are happy to advise. Please contact your local Bekaert specialist.

### **NV Bekaert SA**

President Kennedypark 18  
BE-8500 Kortrijk

Belgium

T+ 32 56 23 05 11

F +32 56 23 05 48

[info@bekaert.com](mailto:info@bekaert.com)

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