



The right fiber
for the right
use

A steel fiber for every need

We offer a complete range of steel fibers, each specifically engineered to provide the right solution for concrete reinforcement underground whether sprayed, precast or cast-in-place.

Depending on the application, select one of three options within our Dramix® steel fiber series: 3D, 4D and 5D. Each features a different tensile strength, aspect ratio, strain capacity and multi-dimensional reinforcement.

All Dramix® steel fiber types are available in a range of length/diameter ratios to meet project requirements. Thanks to their high aspect ratio, the fibers create a denser network, which enhances the overall performance of your structure.

	Dramix® Steel Fiber	Synmix® Macro Synthetic Fiber	Duomix® Micro Synthetic Fiber
Plastic shrinkage reinforcement	—	—	●
Anti-spalling aid in event of a fire	—	—	●
Temporary linings allowing large deformations	●	●	—
Durability and sustainability (steel)	●	—	—
Crack control reinforcement	●	—	—
Structural reinforcement	●	—	—
Heavy impact	●	—	—
Fatigue	●	—	—

Fibers for all your tunnel types



Product spec

Dramix®
Fiber type
3D, 4D or 5D
Diameter
0.55 - 1.05 mm
Tensile strength
1000 - 2400 N/mm²

Synmix® HP55
Fiber type
Macro Synthetic
Diameter
0.64 mm
Tensile strength
510 N/mm²

Duomix® M6 Fire
Fiber type
Micro Synthetic
Diameter
18 µm
Tensile strength
270 N/mm²

construction.bekaert.com

NV Bekaert SA
Bekaertstraat 2
8550 Zwevegem - Belgium
T +32 56 76 61 11 - F +32 56 76 77 93
infobuilding@bekaert.com

Modifications reserved
All details describe our products in general form only. For ordering and design only use official specifications and documents. Unless otherwise indicated, all trademarks mentioned in this brochure are registered trademarks of NV Bekaert SA or its subsidiaries. © Bekaert 2025
Responsible editor: NV Bekaert SA - 04 2025

Steel fiber concrete reinforcement

Dramix®

Fibers for tunneling and mining

Optimal reinforcement

Lower CO₂

Durable solutions

High performance

Faster and safer

Cost-effective

Advantages of steel fibers for reinforced concrete in tunneling

When compared to more traditional steel reinforcement, steel fibers offer a more sustainable solution

- **More economical** – Fewer transport and shipping costs
- **Lower CO₂** – Reduces steel use by up to 60%, requires less concrete
- **Better design optimization** – Higher reinforcement even at low dosages



Why Choose Dramix®

Bekaert has successfully completed more than 500 tunneling projects worldwide totaling over 3,000km and offering solutions to the world's most challenging projects in the metro, highway, rail, water and mining sectors. This has resulted in more than 280,000 tons of steel cage saved, and a significant reduction in CO₂ emissions by 30-40%

Unlock the benefits of Dramix® steel fiber-reinforced concrete for tunneling



Optimal reinforcement

Steel fibers bridge cracks, transfer stresses and develop post crack strength in the concrete structure while also providing ductility



Lower CO₂ / More sustainable

Reducing the steel and concrete used, along with more efficient transportation, can add up to as much as 1,000 tons of CO₂ savings per km of tunnel



Durability & performance

Improved crack control and structural stability contributes to a design life exceeding 100 years



Safer working conditions

Robotically sprayed concrete removes workers from unreinforced areas of excavation



Less labor, faster construction

Mixed in at batching, fibers cut out the need for placing and tying rebar



Easy storage, handling & time saving

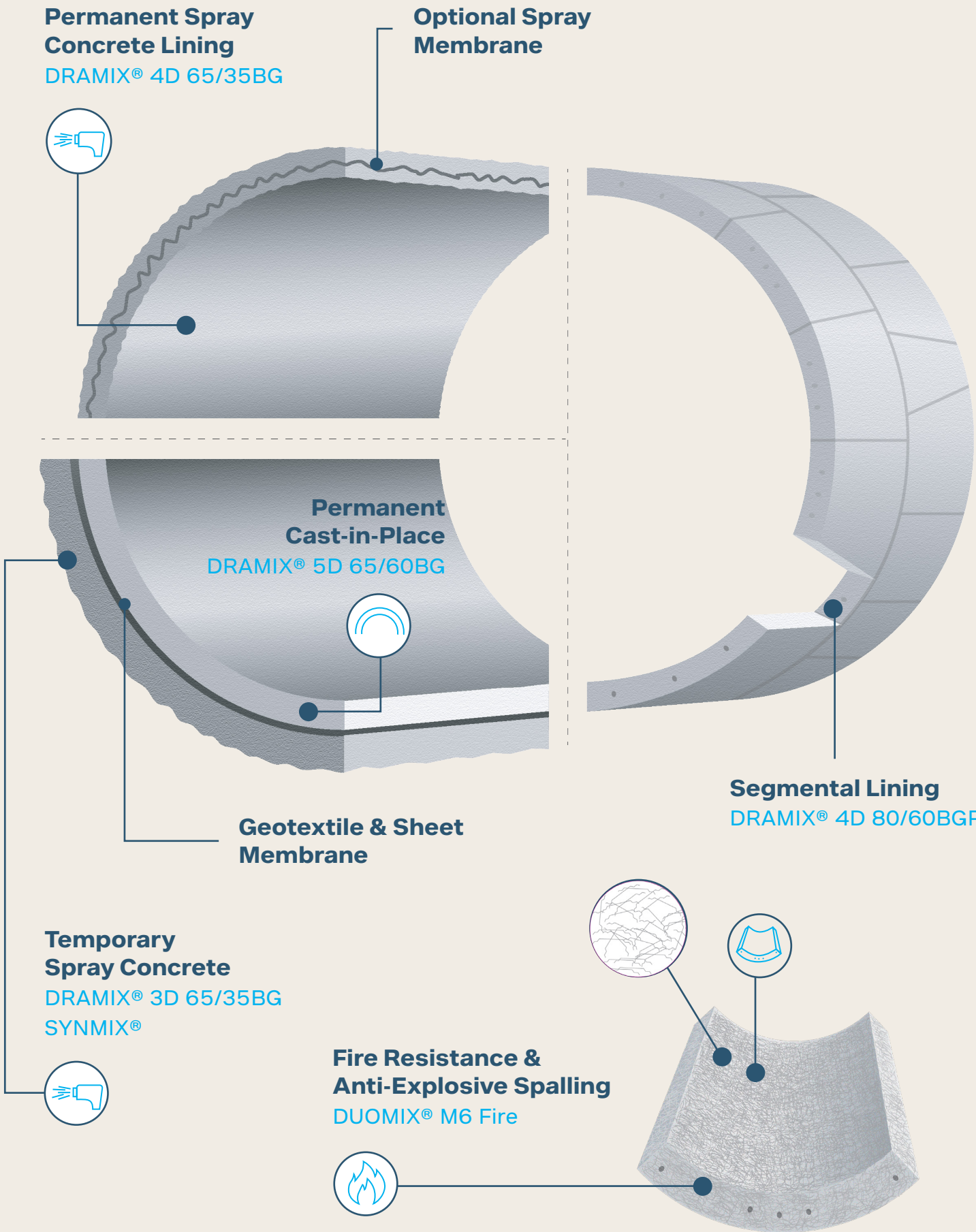
Bulk bags require less mechanical handling and storage space on site



Cost-effective

Corrosion-resistant fibers use less concrete compared to traditional reinforcement

Fibers for concrete reinforcement in tunneling applications



Technical specifications

Glued steel fibers

Dramix® steel fibers are bundled together with water-soluble glue, which helps prevent fiber-balling during mixing and enables a homogenous distribution of fibers throughout the concrete mix. This results in a more efficient mixing process and superior three-dimensional reinforcement.

Third party-certified

All Dramix® steel fibers have a cradle-to-gate, third party-verified environmental product declaration (EPD). This ensures complete transparency regarding the environmental impact of our products throughout their lifecycle.

Each steel fiber in the Dramix® series is precisely engineered to meet specific reinforcement needs across various applications to ensure increased asset durability.

Dramix® steel fibers

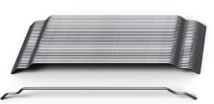
3D



Dramix® 3D

Offers a cost-efficient solution for non-structural support, such as temporary linings, to ensure the safety of underground operations

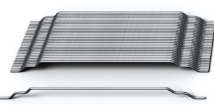
4D



Dramix® 4D

Provides optimal crack control to concrete structures with high serviceability requirements, ideal for segmental lining and permanent sprayed concrete linings

5D



Dramix® 5D

Remains firmly anchored inside the concrete transforming it into a highly ductile material that can withstand significant structural stress; a durable solution for cast in-place, structural precast elements

Synthetic fibers

Synmix® HP 55



Synmix® HP55

Macro fibers designed for an optimal cost/joule performance in sprayed concrete for temporary support, particularly in areas likely to experience large deformations

Duomix® M6 Fire



Duomix® M6 Fire

Micro synthetic fibers that reduce cracks during plastic shrinkage as well as spalling in the event of fire when combined with Dramix® steel fibers

Not sure which Dramix® type fits your needs?

At Bekaert Sustainable Construction, we design low carbon solutions that empower our customers to build stronger, more durable and environmentally-responsible concrete structures. Our solutions are designed to optimize performance, minimize resource consumption and contribute to a more sustainable future.

Our experts are there to advise you on the right fiber and correct dosage for any concrete structure.