



T H E R E I N F O R C E R

INNOVATING SYNTHETIC FIBER REINFORCEMENT SOLUTIONS FOR SHOTCRETE APPLICATIONS

Kordsa, a global supplier of tire and construction reinforcement, and composites, operates in 11 facilities throughout 7 countries, including the USA, Türkiye, Brazil, Indonesia, Thailand, Italy, and Germany with over 4500 employees. Through its mission to “Reinforce Life”, Kordsa aims to create sustainable value to all its stakeholders and society, by combining high value-added reinforcement technologies with innovation for over 50 years.

Initially recognized for its expertise in tire reinforcement and composite industries, Kordsa has expanded its scope to deliver innovative synthetic fiber reinforcement solutions and structural reinforcement systems for construction reinforcement. With a focus on cutting-edge technology, Kordsa’s construction reinforcement brand, Kratos™, offers products that provide solutions that address the demands of shotcrete applications worldwide.

Shotcrete placement has become indispensable in modern concrete construction, particularly for underground and mining projects where speed, strength, and safety are paramount. Kordsa’s synthetic fibers, such as CE-certified Kratos Macro PP 54+ (Fig. 1) and Kratos Macro PP 60+, offer reinforcement solutions for shotcrete placement. Engineered to replace traditional steel mesh, these fibers ensure enhanced crack control, improved toughness, and long-lasting durability.

Made from high-performance polypropylene, Kratos macro fibers provide a 3-dimensional reinforcement structure within the concrete mixture, allowing for better load distribution and crack resistance. This makes them particularly suited for high-stress environments such as tunnels, slopes, and underground mining spaces. Additionally, the corrosion-free nature of these fibers makes them ideal for applications in challenging environments, as exposure to moisture, aggressive soils or



Fig. 1: Kratos Macro PP 54+ Synthetic Fibers

CORPORATE MEMBER PROFILE

chemicals could corrode traditional steel reinforcement.

Kratos fibers also significantly streamline the shotcrete process, reducing labor and equipment costs while accelerating the application timeline by up to 25%. Their ease of handling and rapid integration into concrete mixtures ensures faster project completion, making them the go-to choice for time-constrained projects globally.

Moreover, Kratos structural carbon fiber polymer (CFRP) reinforcement systems are a second product group in the Kratos concrete reinforcement portfolio. These CFRP products are primarily used to strengthen structures. It can be used to repair a structure that has been damaged by earthquake or accident, to extend the life of a structure, or to increase the capacity of a structure to support additional loads.

In shotcrete applications, material loss due to rebound during spraying can be significant, especially in mining and underground constructions. Kratos RM (Fig. 2) is a synthetic fiber designed to address this issue head-on. This micro synthetic fiber reduces rebound by ensuring that more shotcreted concrete adheres to the surface. Kratos RM is particularly suited for challenging underground environments where efficient material use and fast strengthening of tunnel excavations are critical to operational success.

A COMMITMENT TO INNOVATION IN SHOTCRETE APPLICATIONS

Kordsa's dedication to advancing synthetic fiber technologies is evident in its Research and Development Center. The R&D team continually works to optimize fiber solutions that meet the specific challenges of shotcrete applications in the underground and mining industries.

This commitment was recently recognized with the 1st

Place Award for the Macro Innovative Fiber Project of the Year by the Fiber Reinforced Concrete Association (FRCA), for the TCDD Yerkoy-Sivas Safety Tunnels Project in Türkiye (Fig. 3) — a major infrastructure initiative utilizing advanced macro synthetic fiber technologies.

With a dedicated focus on quality, safety, and sustainability, Kordsa remains a global leader in delivering reinforcement technologies that are essential to the construction industry.



Fig. 2: Kratos Rebound Minimizer Synthetic Fibers



Fig. 3: TCDD Yerkoy-Sivas Safety Tunnels Project / Türkiye

CONTACT INFORMATION:

Kordsa

kratos@kordsa.com

www.kordsa.com

www.kratosreinforcement.com