

HOW WE ENGINEER OUR WIRAND STEEL FIBRES

PROVEN QUALITY

Manufactured in ISO 9001-certified facilities, Wirand steel fibres undergo strict quality control. Their performance is validated by specialized institutions in full compliance with international standards, ensuring reliability and consistency across every project.

TESTED PERFORMANCE

Wirand solutions are regularly tested by independent research organizations, providing third-party validation of their mechanical behavior. This ensures safe, technically robust, and optimized solutions designed to maximize structural integrity and client value.

TAILORED SOLUTIONS

Every project is unique. Maccaferri offers customized incorporation methods and specialized dosing equipment developed in-house to guarantee uniform fibre dispersion. These systems streamline the addition process, ensuring efficiency, simplicity, and consistent results, even in complex applications.

CE CERTIFIED



This product is CE certified, meaning it complies with the European Union's strict standards for safety, health, and environmental protection. A guarantee of quality, reliability, and market-ready performance across Europe.



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Engineering a Better Solution

Maccaferri's motto is 'Engineering a Better Solution'. We don't merely supply products, but work in partnership with our clients, offering technical expertise to deliver versatile, cost effective and environmentally sound solutions. We aim to build mutually beneficial relationships through the quality of our service and solutions.

GLOBAL ENGINEERS

In the second half of the 19th century we invented Gabions and dramatically changed the civil engineering landscape. We are still changing it today. We work every day to find better solutions for our clients at every degree of latitude and longitude. Our worldwide network grows through innovation and diversification of sectors of activity and through an increasing range of high quality and environmentally friendly products and applications.

OFFICINE MACCAFERRI GROUP PROFILE

Founded in 1879, our Group soon became a worldwide reference in the design and development of advanced solutions, with offices in over 70 subsidiaries and 20 factories worldwide.

Our mission is to pursue excellence through continuous improvement, while delivering to customers engineered solutions that are innovative, advanced and environmentally friendly. We are committed to outstanding safety, quality and sustainability, to create value for all stakeholders as well as our communities.

MACCAFERRI APPLICATIONS

 RETAINING WALLS & SOIL REINFORCEMENT

 SOIL STABILIZATION & PAVEMENTS

 DRAINAGE OF STRUCTURES

 FENCING & WIRE


 HYDRAULIC WORKS

 BASAL REINFORCEMENT

 TUNNELLING

 AQUACULTURE NETS/CAGES

 ROCKFALL PROTECTION & SNOW BARRIERS

 COASTAL PROTECTION, MARINE STRUCTURES & PIPELINE PROTECTION

 LANDSCAPE & ARCHITECTURE

 CONCRETE FLOORING, PRECAST & OTHER USES

 EROSION CONTROL

 ENVIRONMENT, DEWATERING & LANDFILLS

 SAFETY & NOISE BARRIERS

 INDUSTRIAL MANUFACTURING



WIRAND: STEEL FIBRES FOR CONCRETE FLOORING

WHAT IS STEEL FIBRE REINFORCED CONCRETE (SFRC)?

Steel Fibre Reinforced Concrete has been enhancing performance for over a century. The addition of steel fibres significantly improves the mechanical and physical properties of concrete, making it stronger, more durable, and reliable under diverse conditions.

Founded in 1879, Maccaferri has contributed to major civil engineering projects worldwide. In concrete flooring, our Wirand steel fibres are used in industrial floors, slabs and precast products to improve productivity and structural strength, ensuring long-term performance in demanding environments.

Wirand



WIRAND: STEEL FIBRES FOR CONCRETE FLOORING

A MORE RELIABLE APPROACH TO INDUSTRIAL FLOORING

Industrial floors face extreme demands—heavy loads, constant traffic, and strict flatness requirements. Wirand steel fibre-reinforced concrete meets these challenges better than traditional reinforcement, ensuring durable, high-performance flooring with faster, safer construction.



While traditional solutions reinforce only where placed, steel fibres are uniformly distributed in the concrete, reinforcing the slab evenly and simplifying installation.

WHY CHOOSE WIRAND FOR YOUR CONCRETE FLOORING?



SUPERIOR PERFORMANCE

High tensile strength (1000–1800 MPa) and a high elastic modulus (210 GPa) ensure efficient stress distribution and superior crack resistance, while the hooked-end anchorage improves the fibre-matrix interlock.



EXTENDED SERVICE LIFE

Minimal creep deformation guarantees long-term dimensional stability, and the optimized dosage balances quantity and performance, preserving structural integrity under heavy, sustained loads.



CONSTRUCTION EFFICIENCY

The cold-drawn wire cutting process ensures precise geometry, the ideal L/D ratio improves workability, and the randomized 3D dispersion provides uniform reinforcement, simplifying placement and reducing installation time.

HOW DO STEEL FIBRES WORK?

Steel fibres, with its three-dimensional random distribution, bridge forming cracks and transform concrete from brittle to ductile, shifting performance from purely compressive strength to enhanced flexural capacity while delivering significant structural benefits.



BRIDGING EFFECT TO AVOID CRACK WIDENING

FROM BRITTLE TO DUCTILE BEHAVIOUR

BOTH COMPRESSIVE AND FLEXURAL PERFORMANCE

WIRAND SFRC FOR EVERY FLOORING NEED

In flooring, steel fibres enhance toughness, control cracking, and ensure long-term durability under heavy loads. Wirand SFRC outperforms traditional reinforcement by reducing weak points and allowing larger panels with fewer joints. It also enables thinner slabs while preserving structural integrity.

MAIN APPLICATIONS:

- M** Logistics warehouses/ distribution centers
- M** Heavy industrial manufacturing facilities
- M** Light industrial production plants
- M** Airport and port pavements & maintenance hangars
- M** High-performance concrete roadways



EASY AND FAST INSTALLATION

Adding Wirand steel fibres to concrete is straightforward and requires no special equipment. The process is quick, clean, and fully compatible with standard placement and finishing techniques.



HOW IT WORKS

- 1** Add fibres directly into the concrete mix
- 2** Mix ~1 minute per cubic metre for uniform distribution
- 3** Pour or pump as usual—no changes to standard equipment
- 4** Finish with conventional techniques (screeds, hardeners, coatings)