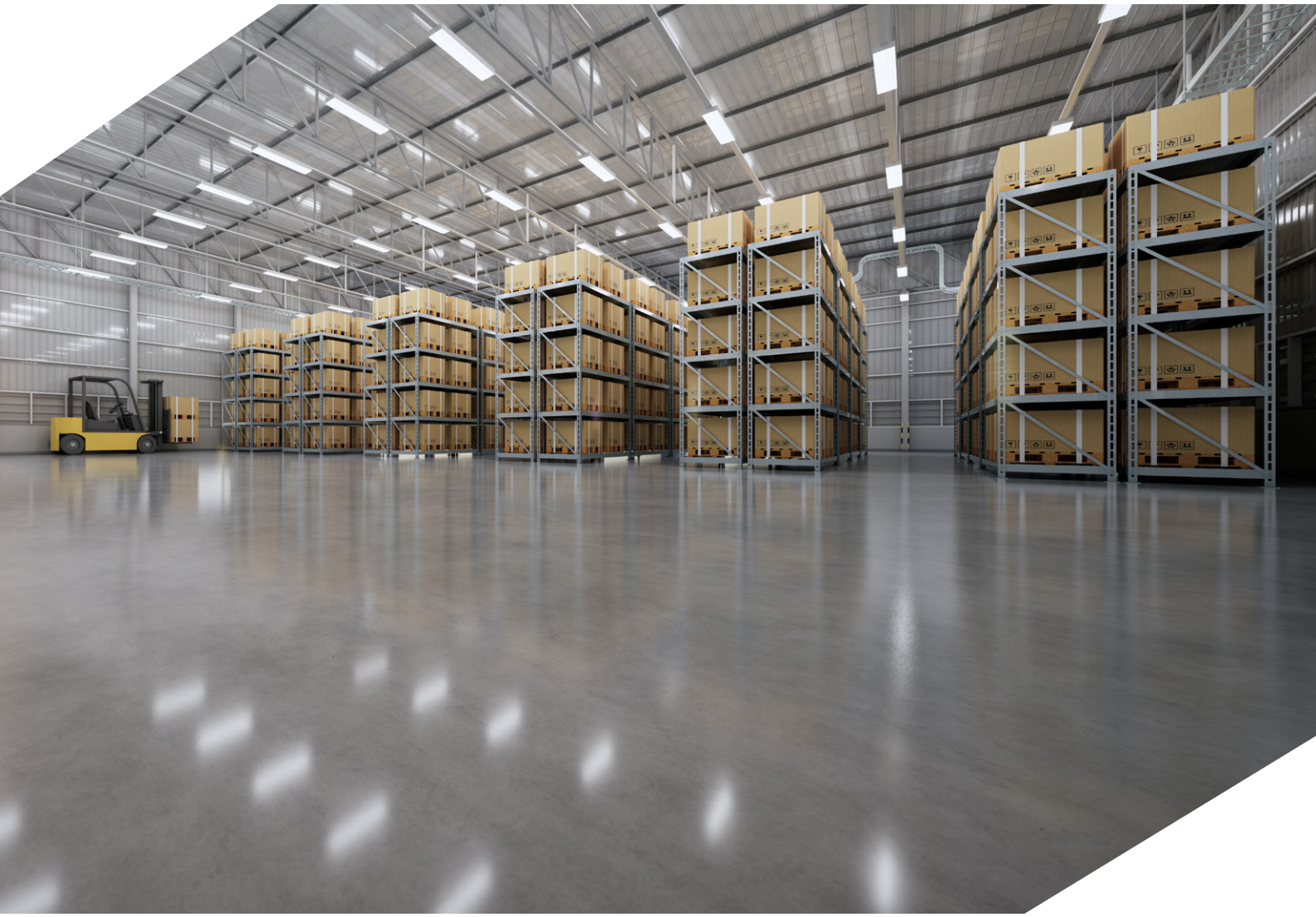
INTERSTEEL
Powered by Dramix®

TECHNICAL DESCRIPTION



High-Performance Industrial Floors

Reliability and Durability by Design

INTERBETON
A TITAN GROUP COMPANY

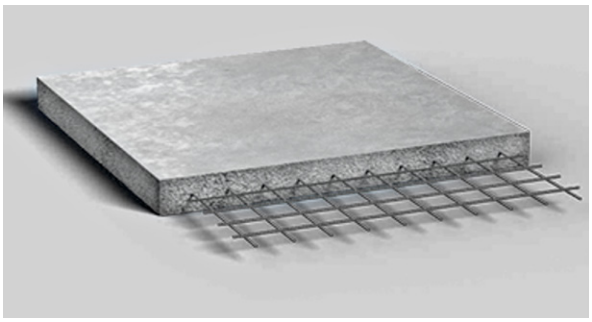
INTERSTEEL
Powered by Dramix®

INTERBETON offers a high-performance solution for modern and sustainable industrial floors with INTERSTEEL Powered by Dramix®, an advanced ready-mix concrete containing special steel fibers. The combined action of advanced concrete technology and special steel fibers delivers exceptional long-term durability, reduces repair costs and improves the reliability of structures. INTERSTEEL Powered by Dramix® is the ideal choice for projects targeting certifications such as LEED, BREEAM and others, as it achieves the optimal carbon footprint per square metre of industrial flooring and offers the lowest possible operating cost throughout the lifecycle of the structure.

High-Performance Industrial Floors

INTERSTEEL Powered by Dramix® is INTERBETON's technologically advanced proposal, enabling the construction of conventional industrial floors with high long-term durability, even without joints, with grids of up to 25×25, by utilizing the three-dimensional reinforcement with steel fibers for increased fatigue resistance, crack limitation and control, and excellent long-term structural behavior.

The result is a high-performance industrial floor with excellent functionality under demanding operating conditions. For the construction of jointless floors, technical competence and correct construction practices by experienced flooring crews are essential.



Functionality of INTERSTEEL Powered by Dramix® Fiber-Reinforced Concrete

INTERSTEEL Powered by Dramix® is an advanced fiber-reinforced concrete system based on a specially designed mix, which optimizes the technical characteristics of high-performance steel fibers. It provides three-dimensional reinforcement throughout the entire material and improves structural performance in demanding applications.

According to European Standard EN 14889, fibers are classified under EN 14889-1 for steel fibers, and the corresponding US standard is ASTM A820/A820M.

Dramix® fibers act as distributed reinforcement, evenly spreading stresses throughout the concrete and providing a unique ability for deformation and load support after floor cracking. At the same time, they help limit crack formation and growth, while their shape with special anchors ensures strong adhesion within the concrete mass, allowing the industrial floor to effectively handle dynamic, repeated, and shear loads.

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Performance Certification According to EN 14651:2005

The performance of the INTERSTEEL™ Powered by Dramix® system is documented through testing in leading laboratories abroad as well as at the University of Patras, where tests were conducted according to EN 14651 to assess the flexural behavior and post-cracking load-bearing capacity of Steel Fiber Reinforced Concrete, SFRC.

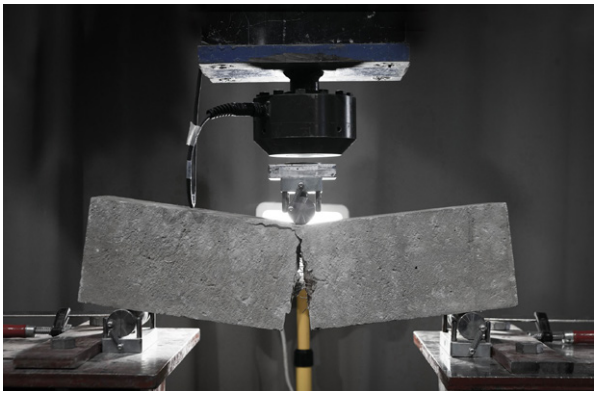
Through three-point bending tests on notched prismatic specimens, the characteristic residual flexural tensile strengths fR1, fR2, fR3, and fR4 were determined. These values reflect the ability of fiber-reinforced concrete to continue carrying loads even after cracks have formed.

The key advantage of fiber-reinforced concrete is its ability to carry loads even after cracking. Unlike plain concrete, which largely loses its load-bearing capacity once it cracks, steel fibers serve as three-dimensional reinforcement within the concrete, bridging cracks and transferring tensile stresses through them.

This behavior shifts the floor's failure mode from brittle to more ductile, helping to control cracks, preserve floor function after cracking, and increase resistance to repeated and dynamic loads.

For logistics projects, industrial facilities, and high-demand storage areas, INTERSTEEL™ Powered by Dramix® offers highly durable floors with longer service life, better resistance to fatigue and impacts, lower maintenance needs, and fewer failures that could disrupt facility operation. At the same time, the ability to reduce or replace traditional reinforcement helps speed up construction, improve site efficiency, and lower overall lifecycle costs for the project.

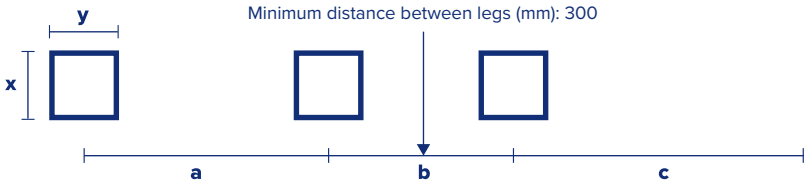
INTERSTEEL™ Powered by Dramix® is a modern industrial flooring solution that combines advanced technology, certified performance, and long-term operational reliability for challenging next-generation applications.



INTERSTEEL Powered by Dramix® Ready-Mix Concrete Series

Strength class	Joint type (m)	Floor location	Floor thickness (cm)	Maximum point load (kN)	Maximum vehicle weight (Tn)	Maximum uniformly distributed load (kN/m²)	Floor classification
INTERSTEEL C20/25	5x5	Internal	23	30	7	30	Light Duty
INTERSTEEL C25/30	5x5	Internal	23	40	18	30	Medium Duty
INTERSTEEL C30/37	5x5	Internal	23	60	26 (three-axle)	50	Heavy Duty
	4x4	External			40 (five-axle)		

Loading parameters for racking



y, x Minimum base plate: 100 × 200

Slump classes: S3-S4

Fiber strength: from 1,100 MPa to 2,300 MPa.

Dosage: Adapted to the durability and mechanical performance requirements of the project.

The product fully complies with the provisions of ELOT EN 206, ELOT EN 197-1, ELOT EN 12620, ELOT EN 1008 and ELOT EN 934-2.

For slabs-on-ground applications, achieving the high performance of INTERSTEEL Powered by Dramix® requires exceptionally well-compacted subgrade, with a CBR > 90%. This creates a stable, uniform, and non-deformable base. Proper ground preparation is essential for the system's proper function, as it ensures even load distribution, minimizes settlement, and maintains the long-term structural integrity of the construction, even under heavy traffic and high loads.

Properties & Advantages

Optimized for effective placement: INTERSTEEL Powered by Dramix® ensures stability during placement, with high workability and pumpability, reduces finishing requirements, while combining exceptionally well with dry-shake industrial hardeners.

- Reinforcement and placement combined: The steel fibers act as three-dimensional reinforcement, cutting construction and installation time by 20–30% and decreasing the risk of failure caused by incorrect mesh placement.
- 100% recyclable material.
- Improved crack behavior as dispersed fibers activate mechanisms that control and limit cracking.
- High pumpability.
- Excellent surface, ideal for applying hardeners and epoxy coatings designed for heavy use, abrasion resistance, oils, and chemicals.
- Site safety: Not installing conventional mesh reinforcement significantly improves worksite safety during construction and lowers the need for transporting and storing construction materials.
- Faster construction without the need for time-consuming placement of traditional reinforcement, with the option of direct discharge from the truck mixer chute without using a pump.

Typical Composition

Parameter	Cement	Aggregates	Water	Chemical admixtures	Steel fibers	Density
Percentage by weight	14-16%	70-80%	7-10%	0,1-0,5%	0,8-1,3%	2,300-2,420, average 2,385 kg/m^2

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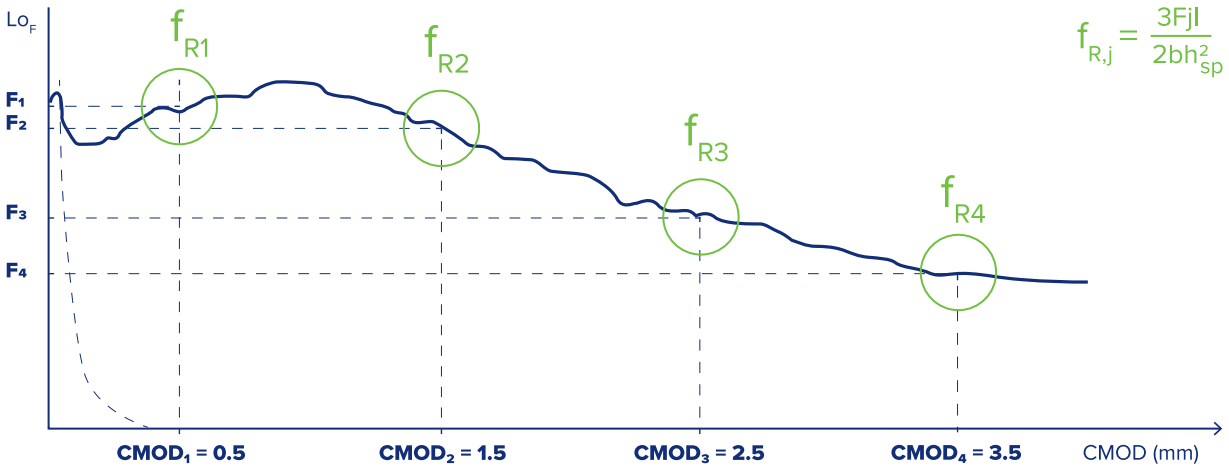
Increased Floor Load-Bearing Capacity

- Enhanced behavior allows industrial floors made with INTERSTEEL Powered by Dramix® to withstand loads even after cracking occurs.
- Ability to carry loads even after floor cracking, making the structure more resistant to concentrated and dynamic loads (e.g. rack legs and forklift traffic).
- Eliminating traditional mesh reinforcement simplifies construction, saves time, and prevents mesh installation errors, while allowing for the construction of continuous, jointless slabs and improving joint grids by 50–80%.

Residual Flexural Tensile Strengths, fR1, fR2, fR3 and fR4



	C 20/25 INTERSTEEL 1	C 25/30 INTERSTEEL 2	C 30/37 INTERSTEEL 3
fR1 (N/mm²)	[illegible]	[illegible]	[illegible]
fR2 (N/mm²)	[illegible]	[illegible]	[illegible]
fR3 (N/mm²)	[illegible]	[illegible]	[illegible]
fR4 (N/mm²)	[illegible]	[illegible]	[illegible]

Superior Technical Performance

- Exceptional fatigue resistance, including continuous traffic from forklifts or AGVs.
- Increased energy absorption capacity, reducing surface wear and delamination.
- Improved resistance to wear, erosion, and edge stress, particularly in high-traffic areas.
- High pumpability.

Conditions for Successful Application

To achieve the maximum performance of INTERSTEEL™ Powered by Dramix® industrial floors, proper design and construction practices must be applied at every stage of the project. The long-term performance of the floor depends not only on the characteristics of the fiber-reinforced concrete but also on: the quality of the substrate, proper placement, effective compaction, appropriate finishing, curing during the early age of the concrete, correct joint design and management.

Substrate Requirements

The uniformity and load-bearing capacity of the substrate are essential prerequisites for the proper performance of the industrial floor.

It is recommended that:

- all layers are adequately compacted,
- the load-bearing capacity is confirmed through appropriate testing,
- the flatness of the substrate is checked.
- The final surface of the substrate should have flatness tolerances of approximately ±10 mm, to ensure uniform support of the concrete slab.

Preparation Before Concreting

Before concrete placement, the following should be planned:

- the positions of construction joints,
- the isolation of columns, walls, and other vertical elements,
- the protection of the substrate against uncontrolled water absorption.

The use of PE membranes between the slab and the substrate helps ensure uniform slab behavior during setting and hardening.

Placement and Compaction

Compaction of the fiber-reinforced concrete should be carried out immediately after placement, to ensure:

- uniform distribution of the fibers,
- full encapsulation of the fibers within the concrete matrix,
- improved surface quality,
- reduction of voids and imperfections.

Particular attention is required in areas near edges, corners, and joints.

Surface Finishing

The final surface treatment is a critical stage for abrasion resistance, flatness, and the floor's appearance. The finishing process should be carried out at the appropriate time, in order to:

- achieve the desired surface hardness,
- avoid exposure of steel fibers,
- ensure uniformity of the final surface.

Curing
Timely and effective curing is a critical factor in limiting plastic shrinkage and reducing the likelihood of early cracking.

Curing may be carried out:
- By applying DEVAPOR or other high-performance curing membranes,
- by keeping the surface moist,
- through other suitable methods according to the project requirements.

Insufficient curing may negatively affect the long-term performance of the floor.

Contraction Joints
Where contraction joints are specified, they should be formed in accordance with the project design. In general:
- cutting should be carried out after the concrete has developed sufficient strength,
- the cutting depth should be approximately equal to one-third of the slab thickness,
- the joint layout should take into account the geometry and function of the floor.

In jointless floors, the formation of joints should be assessed on a case-by-case basis, in accordance with the design assumptions.

Sustainable & Efficient Construction

Simplified project management
- No procurement, storage, cutting, or placement of structural mesh is necessary.
- Faster and smoother execution on site.

Reduced environmental footprint
- Lower steel consumption.
- Simplified site procedures.
- Lower CO_2 emissions during construction.

Lower maintenance costs and fewer repairs
- Higher mechanical strength and crack resistance greatly decrease wear and the need. for local repairs, which is essential for industrial and commercial floors.

15–30% lower lifecycle cost (LCC)
Due to:
- Elimination of mesh reinforcement costs and faster construction.
- Longer joint service life and fewer operational interruptions.
- Reduced wear and limited maintenance interventions.
- More predictable long-term budgeting.

Flexibility for facility reuse

INTERSTEEL Powered by Dramix® allows flexible building reuse because:
- Racking layouts can be modified without restrictions caused by mesh.
- Openings can be made without reducing load-bearing strength.
- Spaces can be converted into offices with minimal interventions.
- MEP network installation is easier due to the homogeneous fiber structure.

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Applications

INTERSTEEL Powered by Dramix® is ideal for projects with heavy mechanical loads or durability needs.

- Industrial floors, internal and external
- Parking floors
- Ground slabs
- Fuel station floors
- Car wash floors
- Industrial building floors

Application Procedure

Transport – Delivery

The concrete is produced in certified INTERBETON plants and delivered by truck mixers. Before discharge, a high-speed, high-intensity mixing for at least 2 minutes is recommended. In direct placement from the truck mixer, the discharge distance should not exceed 50 cm.

Pumping

1. The concrete pump must be clean and lubricated with cement slurry.
2. The first quantity after lubrication must be discarded.
3. Continuous and smooth pumping is required.
4. The pump outlet for vertical elements must be ≤50 cm.
5. The pump hopper must remain full throughout the process.

Weather Conditions

Concreting with INTERSTEEL Powered by Dramix® must adhere to the guidelines outlined in KTS 16, Sections D6 and D7:

- Avoid placement at high temperatures above 35°C or low temperatures below 5°C.
- Protect from rain or direct sunlight during setting.
- Cure by spraying special curing membranes or curing liquids.

Production

INTERSTEEL Powered by Dramix® is produced exclusively in INTERBETON's automated plants, under continuous quality control. Transport and delivery are carried out according to Chapter B4 of KTS 16, while production is managed by the company's Integrated Quality and Environmental Management System.

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Contribution to sustainability

INTERSTEEL Powered by Dramix® reduces:
- Total steel consumption,
- Concrete volume through optimized slab thicknesses,
- Total CO_2 emissions across the lifecycle of the project.

Faster return on investment (ROI)
- Thanks to shorter construction times and lower long-term maintenance requirements.

Sustainability roadmap

- Reduced concrete use + steel fibers = lower CO_2 emissions.
- Higher floor durability under fatigue.
- More efficient transport, with fewer materials on site.
- Recycled fiber content in the case of Loop fibers.

Lower Carbon Footprint & Contribution to Sustainability

Maximum Performance with Minimal Environmental Footprint

The design of industrial floors with INTERSTEEL Powered by Dramix® offers the optimal carbon footprint per m^2 of construction. For cases where increased recycled content is required, INTERBETON also offers the INTERSTEEL solution with Dramix® Loop™ fibers.

Dramix® Loop™ fibers, made from "second life steel," achieve an EPD value of just 0.0436 kg CO_2e/kg, significantly reducing emissions compared to traditional reinforcement options.
The technology forms an extremely dense fiber network within the concrete, averaging up to 70,000 fibers per kilogram, which greatly improves crack control and ductility after cracking. Simultaneously, the high tensile strength of the fibers guarantees consistent performance even under heavy loads, preventing failures.

Additionally, Dramix® Loop™ promotes the circular economy by being made from end-of-life tire steel cords, reusing materials that would otherwise be waste and reducing landfill waste.

As a result, the system retains the key advantages of steel fibers — economy, increased durability, and improved construction safety — while adding a strong environmental advantage, making INTERSTEEL Powered by Dramix® a high-performance and sustainable lifecycle solution.

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