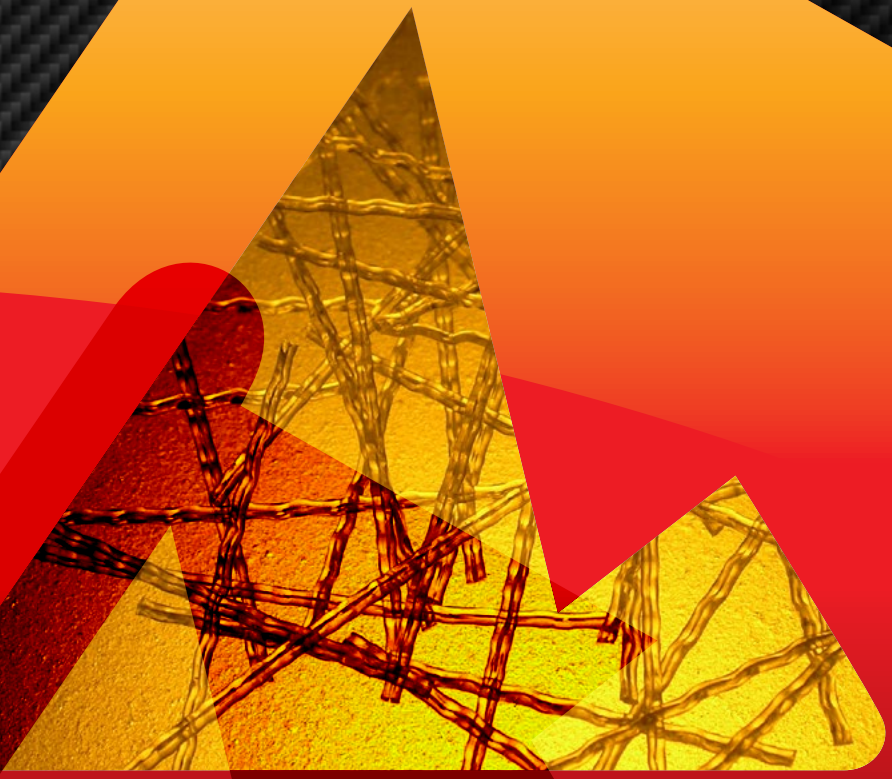
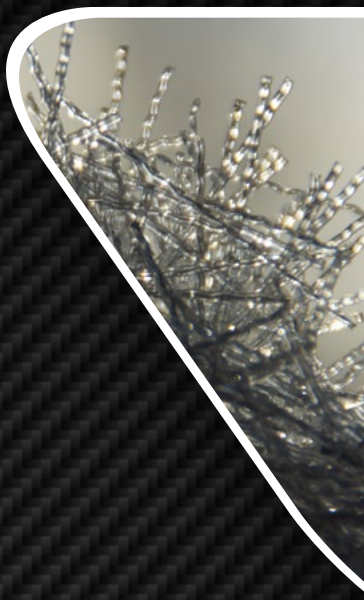
BAUTECH®
Industrial & Decorative Floors





BAUMEX®

POLYMERIC REINFORCEMENT FIBRES

INNOVATIVE ECONOMY
NATIONAL COHESION STRATEGY

Project co-financed by the European Regional Development Fund under the Innovative Economy Operational Programme

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ ROZWOJU REGIONALNEGO

BAUMEX®

FROM DESIGN TO EFFECT

Polymer microfibre-reinforced concrete is a new, very economical building material with very good mechanical characteristics, high impact resistance and a very wide range of applications. But what would the most technologically advanced product be without the technical support in the scope of its application? This is why we prioritise consulting and solving the most challenging design tasks.

We complement the excellent quality of our products with advanced organisation of technical help. A highly specialised Technical Department of BAUTECH®, in co-operation with many experts from home and abroad, creates a comprehensive technical service especially for you.

WE PREPARE BAUTECH® SYSTEM SOLUTIONS, INCLUDING:

- static strength calculations for floors and concrete surfaces,
- proposals for structures and finish of floors,
- technical and technological documents and charts,
- technical specifications in terms of implementation and receipt of the floors,
- guidelines for the construction and/or implementation project,

WE ADVISE IN TERMS OF:

- carrying capacity of existing floor slabs,
- substrate parameters and substructures for designed/made pavement and floor slabs,
- determination of the causes of defects and damage to floors,
- renovation and repair programmes for pavements and floors,

WE PROVIDE:

- highest quality of services and materials supplied,
- specialised theoretical and practical training,
- strictly-selected, authorised executive network,
- technical and commercial consultancy,
- production and delivery of complex flooring solutions.

BREAKTHROUGH IN **COMPOSITE CONCRETE TECHNOLOGY**

LIGHTNESS

ECONOMY

DOSAGE FROM 1.5 kg/m³ OF CONCRETE

THE POWER OF A CROWD

The exceptional strength is due to a huge amount of BAUMEX® polymeric fibres which exceeds 90 000 units per cubic metre. Such a large amount creates a massive multi-directional and even reinforcement structure for the concrete mix.

2340 m/kg

60 000 pcs/kg

BAUMEX polymeric fibres

150 m/kg

2500 pcs/kg

Steel fibres

BAUMEX® ECONOMY PACKAGE

ECONOMY OF APPLICATION

A reduction in costs of transportation and storage and especially a reduction in dosing of polymeric fibres help reducing the cost of reinforcement by as much as 40%!

ECONOMY OF TRANSPORT

Very low dosage of BAUMEX® reinforcement fibres in conjunction with the lightness of polymers facilitates a unique ease of use and economy of transport. The use of one tonne of BAUMEX® fibres replaces the use of about 14 tonnes of steel fibres!

BAUMEX fibres
1 tonne

=

Steel fibres
approx. 14 tonnes

ECONOMY OF STORAGE

Full resistance to all weather conditions, airtight packaging and a small storage area eliminate all the problems associated with the use of steel reinforcement fibres such as corrosion, storage requirements, dosing at concrete mixing plants and logistics.

UV resistance

Resistance to rain and moisture

BAUMEX® CORROSION RESISTANCE

- Unique and innovative design guarantees maximum adhesion to the concrete matrix
- Aspect ratio (i.e. surface to volume ratio) does not adversely affect the workability of the concrete mix
- Ergonomic design and excellent 3D properties guarantee a uniform dispersion in the concrete without troublesome "hedgehogs" which occur with steel fibres and spherical clusters of twisted copolymer fibres
- **Made from thermoplastic polymeric materials with a high density to ensure high strength and plasticity**
- Perfect for use in conditions where chemical attacks occur, for example, on a quayside, in fermentation chambers, swimming pools, etc.

BAUMEX® THE POWER OF APPL

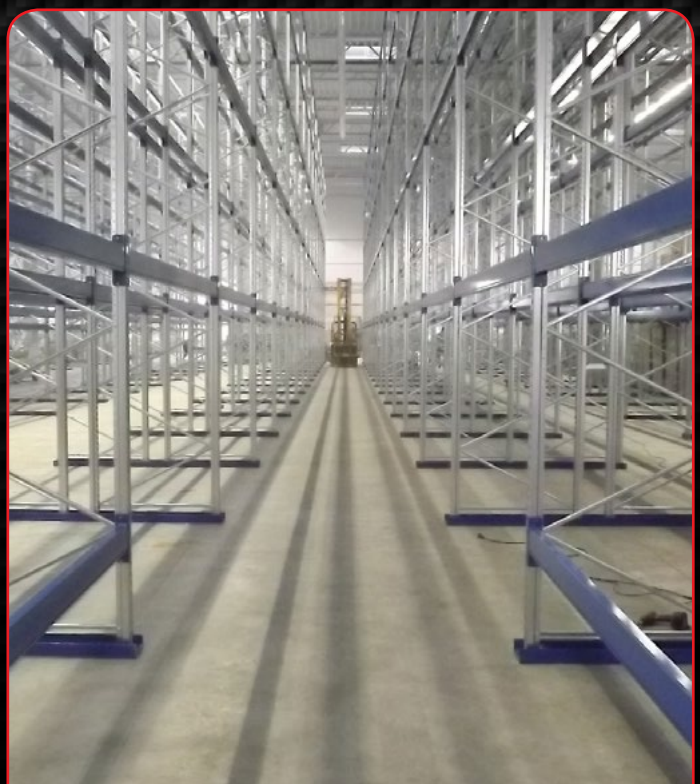
- Industrial concrete floors subjected to high static and dynamic loads
- Parking lots and garages
- Concrete slabs
- Warehouses
- Shortcrete
- Precast
- Quayside
- Chemical industry

LICATION POSSIBILITIES

- Screeds
- Container and storage yards
- Waste separation facilities
- Waste incinerators
- Wastewater treatment plants
- Entrance ramps

BAUMEX®

BREAKTHROUGH IN T



STRUCTURAL DESIGN

Very high resistance of polymers allows the fibres to fully retain their properties during the life of the floor, also in the case of direct exposure to weather conditions.

EFFECTIVENESS

The ability of the fibres to take over the fracture energy of concrete is a measure of effectiveness of the fibres, which in turn is the result of combining the benefits of BAUMEX® polymeric fibres: quantity, arrangement, shape and their total surface area.

STRENGTH

Maximum adhesion to the concrete matrix, lack of segregation and excellent spatial arrangement guarantee a uniform, very high-strength concrete slab.

LIGHTNESS

A low specific gravity and elasticity of the material while maintaining high stiffness and tensile resistance allowing for the elimination of inefficient steel reinforcement, while limiting the formation of shrinkage cracks.

THE POWER OF A CROWD

The strength of BAUMEX® fibres comes from their vast amount which evenly fills the concrete mix and from the innovative shape that ensures excellent multi-directional anchoring.

VERSATILITY

The variety of dosing and applications can satisfy all requirements at the stage of designing of an investment, starting from the anti-shrinkage function to the structural functions.

THE TECHNIQUE **OF REINFORCEMENT**

ECONOMY

Ease and speed of dosing, reduction of working time and lower transport costs are all elements that affect the total cost of an investment to a very large extent.

CHEMICAL RESISTANCE

Resistance to oxidation and corrosion caused by chlorides, sulphates, salts, etc. makes BAUMEX® fibres particularly appropriate for marine environments and chemical industry.

ENERGY EFFICIENCY

Lower processing costs compared to steel. Lightweight and low dosage means a reduction in transport costs and fuel consumption.

ENVIRONMENTALLY FRIENDLY

We protect the environment by using a production process devoid of emissions and materials which do not emit toxic smoke in case of a fire. No electromagnetic interference allows for safe use in hospitals, precision industry, automated warehouses, etc.

SAFETY

Lightweight, safe for the operator, dosed directly at a concrete mixing plant or into a truck mixer, they limit the time and effort required when using steel reinforcement, which directly translates into the safety of workers.

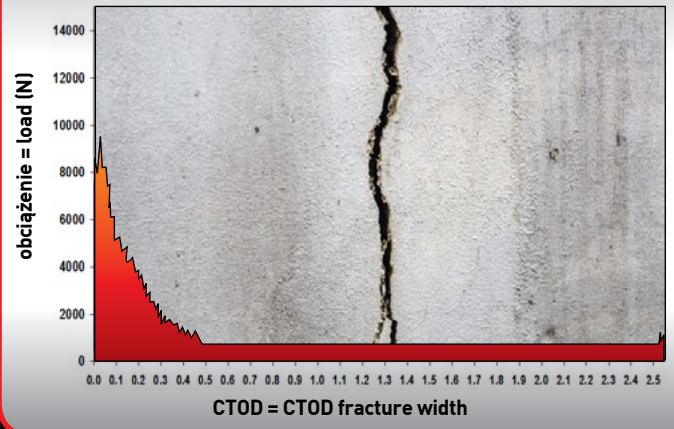
TECHNICAL **PERFECTION**

BAUMEX®

Plasticity of concrete is a property that indicates its ability to absorb the deforming forces until the concrete cracks. Tests carried out on BAUMEX® fibre-reinforced concrete showed a significant increase of the force required to destroy the sample.

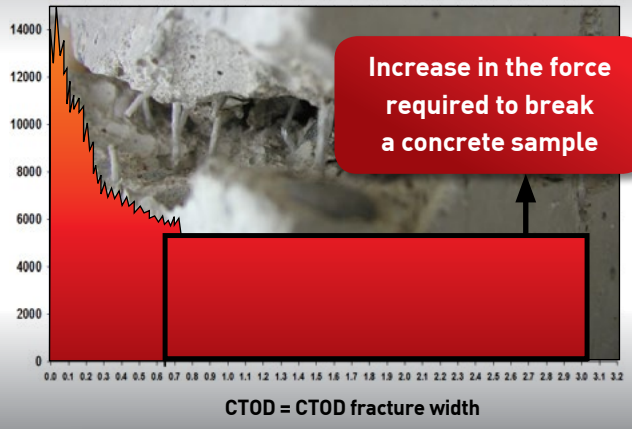
ANCHORING INNOVATION

CONCRETE WITH NO FIBRES

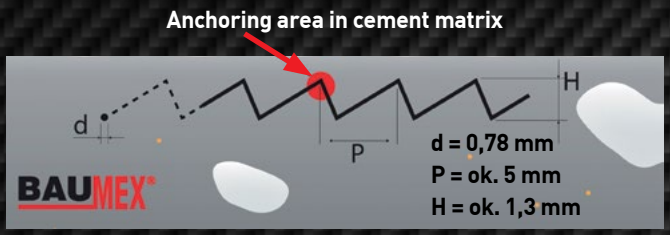


CTOD = CTOD fracture width

CONCRETE WITH BAUMEX® FIBRES



CTOD = CTOD fracture width



CE

TECHNICAL DATA

Classification	Class II
Polymer type	polymer matrix with high density and strength
Shape	wave-shaped single fibres (monofilament)
Length	39 mm
Diameter	0.78 mm
Specific gravity	approx. 1kg/dm3
Tensile strength	approx. 470 N/mm2
Modulus of elasticity	3.6 GPa
Resistance to acids	full
Consistency of concrete with the amount of fibres of 3.3 kg/m3 – Vebe time	8.9 sec
Impact on the strength of concrete	3.3 kg/m3 to achieve F=1.5 N/mm2 at crack width of CMOD = 0.5 mm, and F=1 N/mm2 at crack width of CMOD = 3.5 mm
Complies with	EN 14889-2:2006

BAUCON® POLYPROPYLENE FIBRES

BAUCON® - polypropylene fibres intended for micro-reinforcement of concrete and mortar. They reduce plastic shrinkage and limit shrinkage cracks in the concrete. Polypropylene fibres eliminate the need to use expensive and often ineffective shrinking reinforcement made of a steel mesh.

Why BAUCON®?

- It stops the formation of natural shrinkage cracks in the first period of "life" of concrete when it has a low Young's modulus and shrinkage stresses exceed its strength.
- The addition of BAUCON® polypropylene fibres and appropriate selection of the composition of concrete causes cracking in concrete to be extremely small, and the size of the cracks decrease by two orders of magnitude and they become invisible and do not affect the strength of concrete.
- Limits cracks
- Increases water tightness
- By lowering the capillarity of concrete it reduces water absorption and penetration of chemicals, oils, etc., thereby increasing frost resistance.
- It improves the workability of concrete and its uniformity by reducing the segregation of the concrete mix.
- Dosing from 600 g/m3 of concrete

RECOMMENDED USE

- industrial flooring
- screeds- also with underfloor heating
- concrete slabs
- mortar, self-levelling compounds, thin-layer screeds
- wall mortar, plaster
- prefabricated elements and concrete haberdashery
- stucco

TECHNICAL DATA

Linear weight:	2.5 dtex*
Length:	approx. 12 mm
Diameter:	approx. 19 µm
Density:	approx. 0.9 g/cm3
Specific surface area:	2 350 cm2/g
Tensile strength:	350 N/mm2
Young's modulus:	3500 N/mm2
Water absorption:	0%
Melting point:	135°C

* one dtex means that 10 000 m of fibre weighs one gram

INDUSTRIAL FLOORS:
- concrete BAUTECH®
- thin-layer BAUFLOOR®
- epoxy BAUPOX®
- polyurethane BAUPUR®
- hydro-isolating and bridging systems
- bonding layers

X-FLOOR® GROUND FLOORS
- BAUTECH lithium products NANOTECHNOLOGY:
  - polishing,
  - sealing,
  - strengthening,
  - dyeing,
- repair fillers

REINFORCEMENT FIBRES
- polymer
- steel
- polypropylene

SEALING AGENTS AND PAINTS
- acrylic
- silicate
- epoxy

TERRAFLOOR® DECORATIVE GROUND SCREEDS
- cement-polymer
- epoxy

PRESSBETON® DECORATIVE PAVMENTS

RESTORATION, MAINTENANCE AND CURE PRODUCTS

BAUFLEX® DILATION SYSTEMS

BLACKLINE® PROFESSIONAL FLOORING EQUIPMENT
- vibrating screeds
- power trowels

PRODUCTION • CONSULTING • TRAINING • DISTRIBUTION

BAUTECH®
Industrial & Decorative Floors

BAUTECH Sp. z o.o. ul. Staszica 25, 05-500 Piaseczno, POLAND
tel.: (+48 22) 716-77-91, fax: (+48 22) 716-77-90, e-mail: bau@bautech.pl

www.bautech.eu

INNOVATIVE ECONOMY
NATIONAL COHESION STRATEGY

Project co-financed by the European Regional Development Fund under the Innovative Economy Operational Programme

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ ROZWOJU REGIONALNEGO