



SIKA AT WORK

Asprokat S.A., industrial floor in precast unit

CONCRETE PRODUCTION WITH MACROFIBERS SikaFiber® PP-940/50

BUILDING TRUST



ASPROKAT S.A., INDUSTRIAL FLOORING IN PRECAST FACTORY



PROJECT DESCRIPTION

ASPROKAT S.A. is one of the leading companies in the manufacturing of prefabricated concrete elements. It has been active in this sector for decades for a wide variety of construction types, such as reinforced concrete industrial buildings, mixed & steel structures, reinforced concrete blisters, staircases, facade elements, jersey parapets, e.t.c.

Today, it is estimated that it has built an area of over 1.500.000m² for professional use building of all types in the Greek territory.

PROJECT DEMANDS

The restoration of the industrial floor in the production area required a proper smoothing and reforming of the surface. A concrete floor in a production area should have not only adequate compressive strength but also feature flexural strength and particularly high abrasion & wear resistance. These features are particularly important as they will determine the durability of the floor in the long run and will play an additional role in the maintenance frequency and future site restoration, actions of enormous economic importance for an industrial unit (restoration cost + "dead" time).

SIKA SOLUTION

Taking into account the requirements and the activities that take place on site, it was proposed to incorporate synthetic macrofibers into the concrete mix that would be used for laying the factory's floor, namely the production of fiber reinforced concrete was proposed.



The use of **SikaFiber® PP-940/50** synthetic macrofibers was proposed to be incorporated in the concrete mix, at a dosage of 3kg/m³, as their use offers immense benefits such as:

- Reduction or total replacement of conventional reinforcement in ground slabs
- Higher load bearing and ductility
- Less shrinkage cracks at the early stage
- Better cohesion for fresh concrete
- Increased resistance against abrasion
- Protection against freeze / thaw cycles
- Faster completion of the project, as grid placement work is not required (on slabs on ground)
- Lower project costs due to reduced material and labor costs

As a result of the use of fiber reinforced concrete with macrofibers, conventional steel reinforcement can be reduced and the distance between the required joints can be increased. **SikaFiber® PP-940/50** macrofibers also help to reduce the fragility of the edges of the construction. Consequently, the durability of floors based on fiber reinforced concrete increases significantly.



SikaFiber® PP-940/50 are state-of-the-art, high performance synthetic macrofibers, based on innovative HPP (High Performance Polymer) technology.

Their major advantage is that they limit the cracking and the range of cracks formed. Thus, a concrete that requires significantly less steel reinforcement compared to conventional reinforced concrete is produced, but still as durable, if not more.

In addition, their main advantages include:

- Their geometric shape, which is specially formed to resist extrusion from the cement paste
- Increasing residual strength (Residual Stress) in plastic state
- Increased mix consistency and reduced possibility of separation
- Their composition, as they do no rust and they are alkali resistant
- Reduce wear on equipment in comparison with metal fibers
- Safety and ease of use, compared to traditional methods
- Faster completion of the project, as grid placement work is not required (in ground slabs)
- Lower project costs due to reduced material and labor costs

SikaFiber® PP-940/50 macrofibers are used in many types of screed and concrete for flooring applications.

In the fresh phase, they generally reduce the shrinkage at an early stage and contribute to the stability of the mixture.

In the hardened phase, they increase the quality and durability by controlling crack distribution and reducing shrinkage, as they prevent the formation of single and wide cracks, enabling them to be distributed into many, smaller and thinner ones with significantly reduced risk of damage. Fiber reinforcement also greatly improves the resistance of the floor against impact and point stresses.



PROJECT PARTICIPANTS:

Owner: **ASPROKAT S.A.**



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 Please consult the most recent Product Data Sheets prior to any use and processing.



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