



SIKA AT WORK

Electra Metropolis Athens Hotel

Sika® Watertight Concrete System for external pool

BUILDING TRUST



ELECTRA METROPOLIS ATHENS-SIKA WATERTIGHT CONCRETE SYSTEM



PROJECT DESCRIPTION

The brand new Electra Metropolis Athens Hotel opened its gates in September 2016. In just 13 months, the building, which is the work of the famous architect Patroklos Karantinos and housed the Ministry of Education for decades, was transformed into one of the most remarkable hotels in Athens. A tribute to the Retro Chic aesthetics that stunned the history of modern Athens is a model for interior architecture and design today. It is located in Syntagma, in the heart of Athens. The 5* hotel has a basement with spa, ground floor, mezzanine, ten floors with 216 fully equipped rooms and suites, overlooking the Acropolis and the Plaka neighborhood, an impressive terrace in the center of the hotel, surrounded by restaurants, cafes, conference rooms, meeting rooms, lectures and spa and a unique Roof Garden overlooking the Parthenon and all of Athens. The building's external shell has been strengthened and the building has been upgraded and is the first hotel in Greece to receive LEED certification (US Green Building Council). One of the most beautiful experiences the hotel visitor can enjoy is a dive in the 10th-floor special pool, with glass dominating as the main construction element, offering magnificent view of Lycabettus and the Acropolis. Combined with the M bar, located on the same floor, it is the ideal place to relax.

PROJECT DEMANDS

As part of all the necessary works to re-shape the building construction, refurbishment works, aiming to provide long-term waterproofing solution for the outdoor swimming pool had to take place on the top floor. An outdoor pool is exposed to constant stress due to the use itself, but also due to weathering. The requirement was not limited to implement a technically immaculate solution, but also to provide a system feasible to adapt, efficient and fast in application, due to the need for quick delivery of the project.

SIKA SOLUTION

As a quick and effective method for waterproofing the outdoor pool, **Sika Watertight Concrete System** has been proposed. **Sika Watertight Concrete System** offers *endogenous* waterproofing over the entire mass of concrete and not only on the surface in the form of coating. It consists basically of the combination of:

- Reduced Permeability Concrete (Waterproof Concrete), for which the basic requirements are determined and combines incorporation of special admixtures
- Joint sealing products, for watertight construction and movement joints, as well as for waterproofing and complete sealing of all types of penetrations (e.g. pipes)

Its main advantages include:

- The fact that it does not require space for perimeter sealing work (thus maximizing the buildable space and reducing the cost of excavation and disposal)
- Not requiring additional waterproofing mortars, bituminous coatings or membranes
- Reduction of required work and construction costs
- Faster completion of construction
- Protection of concrete endogenously (throughout its mass) against penetration of water and harmful components

APPLICATION OF SIKA WATERTIGHT CONCRETE SYSTEM

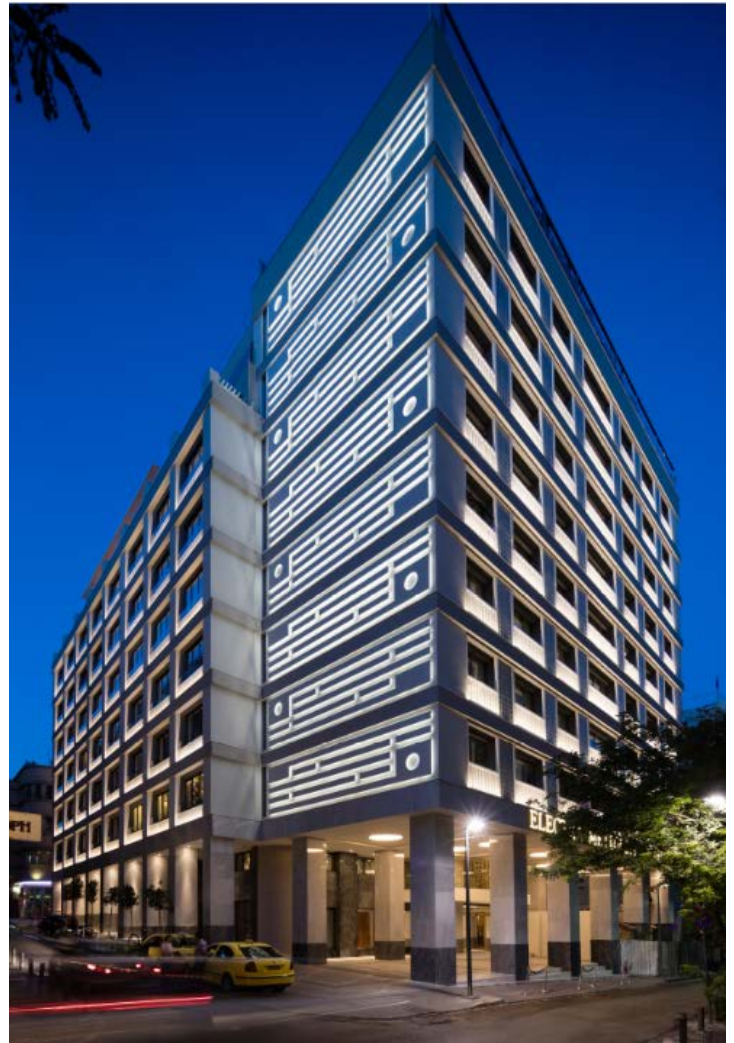
As the **Sika® Watertight Concrete System** is a two-step solution, the first step was to produce an optimized concrete mix, following specific instructions for the mix and using Sika admixtures. According to the **Sika® Watertight Concrete System**, recommendations are followed for optimum concrete composition in terms of the proportions of raw materials, combined with special admixtures. As the concrete is by nature a porous material, only the reduction of the Water / Cement ratio can reduce its porosity and thus ensure long-term watertightness. This is achieved on a first level by using **Sika® ViscoCrete®** & **Sika® ViscoFlow®** special, 3-generation polycarboxylate polymer superplasticizers. Secondly, the use of special water resisting and crystalline waterproofing admixtures offers the highest possible level of intrinsic watertightness. For this mixture, **Sika® WT-200 P** special crystalline admixture was used. **Sika® WT-200 P** is a combinatorial product: it is a self-healing admixture with crystalline action and at the same time offers porous sealing and mass waterproofing. The most important in the case of the **Sika® Watertight Concrete System** is that Sika offers methods for assessing the level of the achieved watertightness with measurable methods.



As far as the second step is concerned to ensure the watertightness of the pool, this was achieved by using Sika products to seal and waterproof infiltrations and pipe penetrations of all types using **SikaSwell®** waterproofing profiles. **SikaSwell®** products include polyurethane-based sealants and pre-formed acrylic base profiles, which are placed at the construction joints prior to concrete casting. Due to the nature of the products themselves, they swell in the presence of water and block gaps and pores - even cracks!

PROJECT PARTICIPANTS:

Owner: **Electra Hotels & Resorts Group**



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Sika Hellas ABEE
15 Protomagias Str.
145 68, Kryoneri
Attica - Greece

Contact
Tel.: +30 210 8160600
Fax: +30 210 8160606
www.sika.gr / sika@gr.sika.com

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