



SIKA AT WORK

Summer Senses Luxury Resort

Sika systems for watertight pool construction and tile laying

- Sika® Watertight Concrete System
- Sika® Watertight Tile Bonding

Sika solutions for rehabilitation and protection of concrete constructions

SUMMER SENSES LUXURY RESORT- SIKA SYSTEMS FOR POOL CONSTRUCTION



PROJECT DESCRIPTION

The project concerns the construction of a 5* hotel with a capacity of 100 rooms, divided into 10 buildings in the area of Punta-Marpissa in Paros. The facility will have a main building (communal functions), a restaurant, a kitchen, laundry facilities, a fitness center, wellness areas, outdoor parking, private and communal swimming pools and an open-air theme restaurant in an area of 24 acres. The total project investment amounts to 15.000.000 euros.

PROJECT DEMANDS

Overall, the hotel will have 6 swimming pools, with total area of 1.312m²:

- Central swimming pool 630,75 m²
- Children's pool 435,75 m²
- 8-room shared pool 180,00 m²
- 2-room shared pool 26,00 m²
- 1-room private pool 20,00 m²
- 1-room private pool 19,20 m²

A 5* hotel unit requires the use of a long-term waterproofing system for all swimming pools which, in addition to stress due to the use and chemical cleaning, are also exposed to weathering effects (impaired seaside environment with chlorides). The requirement was not limited to implementing 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 to use.

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 a 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

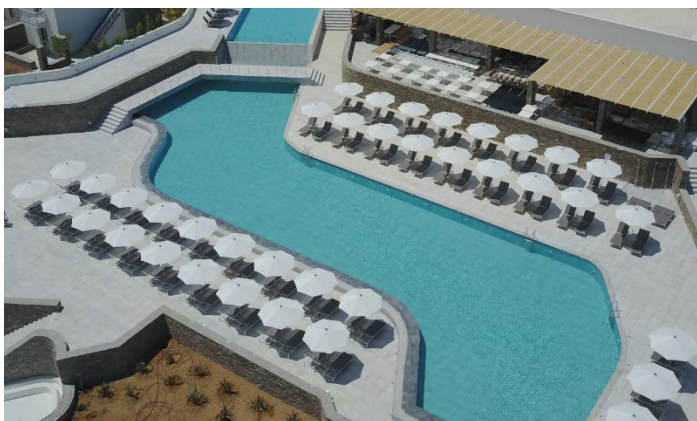
For the final surface of the pools, where tiles were selected, the **Sika Watertight Tile Bonding System** was used. The system consists of **Sikalastic®** flexible cement-based mortar in combination with **SikaCeram®** C2 class tile adhesive.

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!



SIKA WATERTIGHT TILE BONDING SYSTEM

As far as the second step of ensuring the watertightness of the pool is concerned, the Sika Watertight Tile Bonding System was adopted.



First, the 1-component, flexible, cementitious, waterproofing mortar, with crack bridging characteristics **Sikalastic®-1K** was used. **Sikalastic®-1K** carries Declaration of Performance, not only as a Concrete Protective Coating (acc. to EN 1504-2), but also according to EN 14891 for all external waterproofing applications, for applications in swimming pool and underneath ceramic tiles.

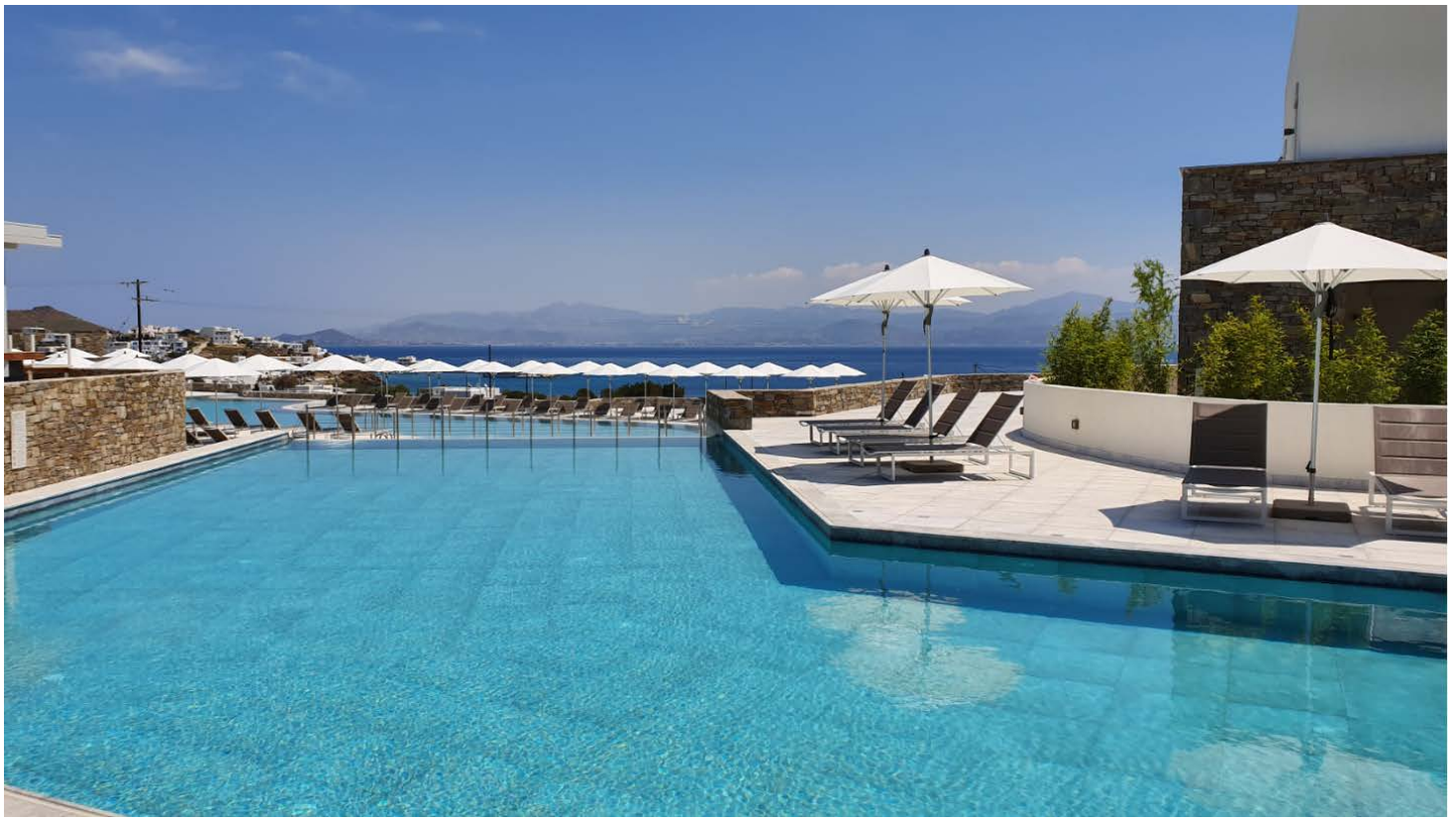
Tile bonding was performed using the 1-component, cementitious tile adhesive, Class C2TES1 **SikaCeram®-243 UltraFlex**. **SikaCeram®-243 UltraFlex** is a high performance tile adhesive, elastic and thixotropic, with extended open time and especially strong adhesion. Tile grouting was performed using the epoxy grout **SikaCeram® EpoxyGrout**. **SikaCeram® EpoxyGrout** is a 2-component epoxy grout, containing quartz aggregates and special admixtures, offering a smooth final surface and is available in various colour shades. Carries Declaration of Performance according to EN 12004 (R2T) & EN 13888 (RG), while exhibits exceptional performance in chemicals and is easy to clean & maintain.

MORE SOLUTIONS FROM SIKA

For the protection of existing concrete elements, the 1-component corrosion inhibiting impregnation **Sika® FerroGard®-903 Plus** was used. For all rehabilitation demands on concrete elements, the 1-component, cementitious, rapid setting mortar **SikaRapid®+** was used, while for all anchoring requirements, the high performance anchoring adhesive **Sika® AnchorFix-3+** was used. For the production of cementitious mortars the mortar improver, waterproofer and plasticizer **Sika® Viscobond** was used.

SIKA PRODUCTS IN VOLUMES

Crystallizing waterproofing mortar **Sika® WT-200P**: 8tns
Swellaible sealants & profiles **SikaSwell®**: ~1,2km of joints
Rapid setting concrete repair mortar **SikaRapid®+**: 12,5tn
High performance anchoring adhesive **Sika® AnchorFix-3+**: 204 pcs
Mortar admixture **Sika® Viscobond**: 0,6 tns
Waterproofing cementitious mortar **Sikalastic®-1K**: 11,0tns
Cementitious tile adhesive **SikaCeram®-243 UltraFlex**: 20,0tns
Epoxy grout **SikaCeram® EpoxyGrout**: 0,5 tns



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