



SIKA AT WORK

Istoria Hotel, Perivolos, Santorini

Sika systems for:

- Sika® watertight concrete for external pool
- Final pool surface configuration
- Floor coating
- Anticorrosive protection
- Structural strengthening & building upgrading

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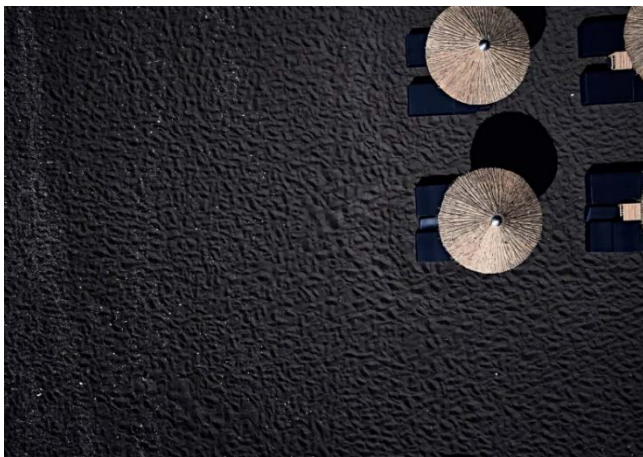
ISTORIA HOTEL, PERIVOLOS, SANTORINI



PROJECT DESCRIPTION

On the beautiful beach of Perivolos, where the volcanic sand meets the blue waters of the Aegean Sea, lies the new Istoria Hotel in Santorini.

The hotel has 12 suites and was designed to offer a new kind of hospitality on the island. Its aesthetic aims to create a new chapter in the unique architectural narration of the island. The rooms of the hotel are simple, with their simplicity combined with the traditional building materials of the island and the Aegean aura. For this reason, Istoria Hotel is a member of the leading Design Hotels™ Group. Aim of Istoria Hotel is to offer genuine hospitality, using as a springboard the cultural base and the cutting edge architecture, having created an accommodation that combines the experiential experience of staying on an island of unique beauty, such as Santorini, with top comforts, to travelers seeking their journey to become an unforgettable memory.



PROJECT DEMANDS

The unique aesthetic and design of the suites and the common used areas of a hotel unit that offers services of this level required the use of systems that are in harmony with each other and with the landscape. The hotel had to be combined with the imposing scenery of Perivolos' black sand beach. Therefore the materials and systems to be chosen had to offer not only top quality, but also to match the space.

The construction needs varied. As part of all the re-building work, repair and long-term waterproofing of the outdoor swimming pool had to be carried out, which, in addition to stress due to use, is also exposed to weathering effects. The requirement was not only to implement a technically sound solution, but also one that is easily achievable, ensured efficiency and rapid implementation. Also, the floor of communal areas and the surrounding pool area floor had to be renewed, as well as bonding of granite tiles on the floor of the suites had to take place. In addition, a coastal building structure had to be protected from corrosion, while for structural improvement reasons there was a requirement for structural reinforcement of certain parts of the building.

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SIKA SOLUTION

For each requirement, a Sika product or system was proposed and implemented. Sika products combine optimum efficiency with aesthetics that harmoniously embody the architectural conception. More specifically:

Watertight concrete system for main pool:

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

The use of a special crystallizing waterproofing admixture offer the maximum level of endogenous watertightness. So, in the concrete mix, the special crystallization waterproofing admixture **Sika® WT-200 P** was incorporated. **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!

The final surface of the pool was coated using granite tiles. The tiles were bonded using the 1-component cementitious tile adhesive, C2TES1 Class **SikaCeram®-243 UltraFlex**. **SikaCeram®-243 UltraFlex** is a high performance tile adhesive, elastic and thixotropic, featuring extended workability time and powerful adhesion to substrate. Tile grouting was performed using the epoxy grout **SikaCeram® EpoxyGrout**. **SikaCeram® EpoxyGrout** is a 2 component epoxy grout, containing quartz sand and special admixtures, offering smooth final surface and is available in various colour shades. **SikaCeram® EpoxyGrout** is certified according to EN 12004 & EN 13888, while its advantages include exceptional chemical resistance and cleaning easiness.

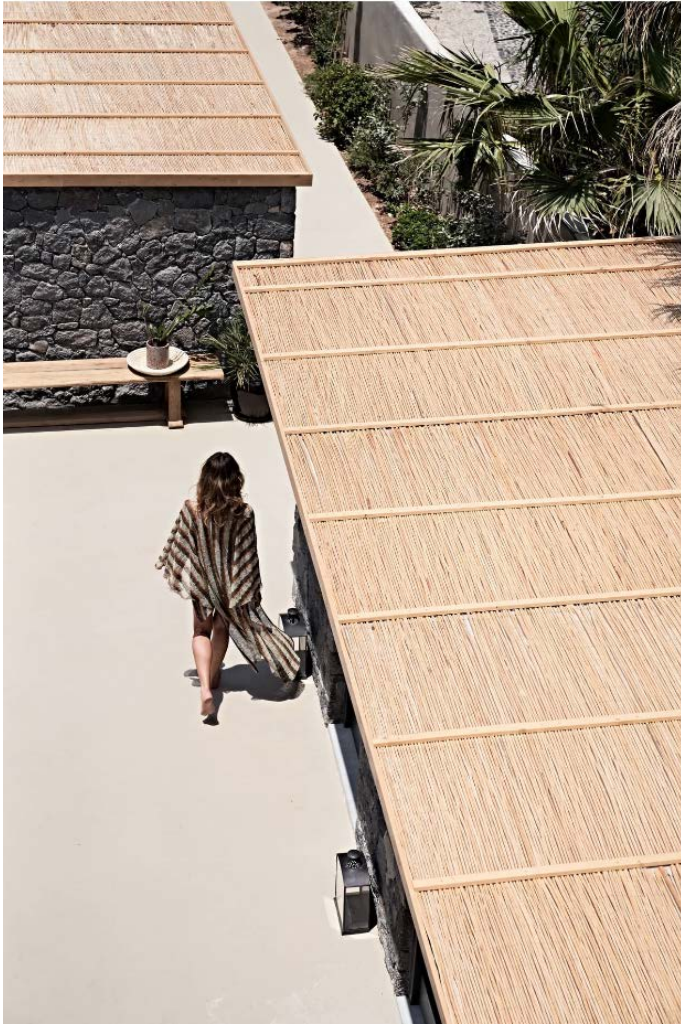


Flooring in communal areas and pool surrounding area: Due to the design of the hotel unit, the floor of the communal areas should have a uniform appearance. The aesthetics of the floor should be harmonized in terms of hue and texture with the building structure as a whole and be inseparable from the particular landscape. In addition, the floor surface should not have any joints, should be easy to clean and maintain, and of course it should be characterized by a high level of anti-slip protection as the same floor type would be extended to the surrounding pool area.

Based on all these requirements, the highly elastic polyurethane floor coating **Sikafloor®-400 N Elastic** was applied. **Sikafloor®-400 N Elastic** is a watertight coating, with cracking bridging properties and good resistance against stresses due to traffic. Its exceptional features include ultraviolet (non-yellowing) and weather-resistant - aggressive conditions prevailing on an island in the Cyclades. For applications requiring a high degree of slip resistance, it is possible to create an anti-slip surface with quartz aggregate broadcasting.



Due to the increased moisture content of the existing floor, firstly a system has to be applied to guarantee a surface that could guarantee the safe application of subsequent layers and be according to specifications. So, a temporary moisture barrier system was applied, comprising from the 2-component epoxy based resin primer **Sikafloor®-155 WN**, followed by the 3-component epoxy-cementitious self levelling mortar **Sikafloor®-81 EpoCem®**. On the safe for application and according to specifications substrate, the 2-component epoxy primer **Sikafloor®-161** was applied, followed by the polyurethane coating **Sikafloor®-400 N Elastic**. In order to increase the level of anti-slipping properties, the coating was broadcasted with quartz sand 0,4-0,8mm and the final surface was sealed with the elastic, UV resistant, matt sealer **Sikafloor®-410**.



Tile bonding on suite floors: For the floors of the suites, granite tiles were selected as final surface, which were bonded using the 1-component cementitious, C2TES1 class tile adhesive **SikaCeram®-243 UltraFlex**. The tile grouting was performed with the cementitious tile grout **SikaCeram® CleanGrout**. **SikaCeram® CleanGrout** is a high performance cementitious tile grout, comprising from high strength cement, selected quartz / silica aggregates and special additives. **SikaCeram® CleanGrout's** advanced pigment technology allows the color to remain bright and luminous over time, while the grout has special certifications that prevents the inhibition of mold and bacterial growth on its surface.



Structural beam reinforcing: For safety, compliance with existing regulations and upgrading of bearing capacity, the shear reinforcement of the beams of the building structure was required. Selecting the **Sika® CarboShear L** carbon fibre shear links provided top security, but also application speed. **Sika® CarboShear L** are pre-shaped corrosion resistant carbon fiber angled profiles, designed to reinforce concrete structures in shear tensions. They are bonded as an external reinforcement using **Sikadur®-30** epoxy resin, providing a clean, easy, high-safety result as they do not corrode, are low weight, feature excellent fatigue resistance and high strength.



Anticorrosive protection of building structure: The stresses imposed in building structures in the idyllic but rugged environment of the Aegean Sea requires the use of an anti-corrosion protection system. For this reason, the patented **Sika® Margel VPI-580** corrosion inhibitor, acting in gaseous phase was used in the construction and was introduced into the concrete structural elements near the reinforcement steel. The product has been specially developed to ensure that the corrosion inhibitor will be released within 12-48 months time. This results in a well-formed corrosion-inhibiting layer surrounding reinforcing steel that will eventually form a passivated protective layer to reduce surface exposure to chlorides, water and oxygen.



In addition, the impregnation inhibitor **Sika® FerroGard-903 Plus** was applied to the concrete of the construction. **Sika® FerroGard®-903 Plus** has dual function, both by inhibiting the onset of corrosion and by reducing the corrosion rate of the steel reinforcement. Anti-corrosion protection using **Sika® FerroGard®-903 Plus** results in extended lifetime and operation for up to 15 years.

Waterproofing & concrete rehabilitation mortars for the building structure:

In cases of requirements for waterproofing concrete surfaces, the 1-component, flexible, cementitious, waterproofing mortar with crack bridging abilities **Sikalastic®-1K**. **Sikalastic®-1K** carries CE Mark and Declaration of Performance as a protective coating for concrete (according to EN 1504-2). Concrete repairs were carried out with 1-component cementitious repair mortars from the **Sika MonoTop®** series. **Sika MonoTop®** mortars are certified in accordance with the European Standard EN 1504 as R4 Class mortars and feature exceptional application characteristics to restore original geometry of elements.

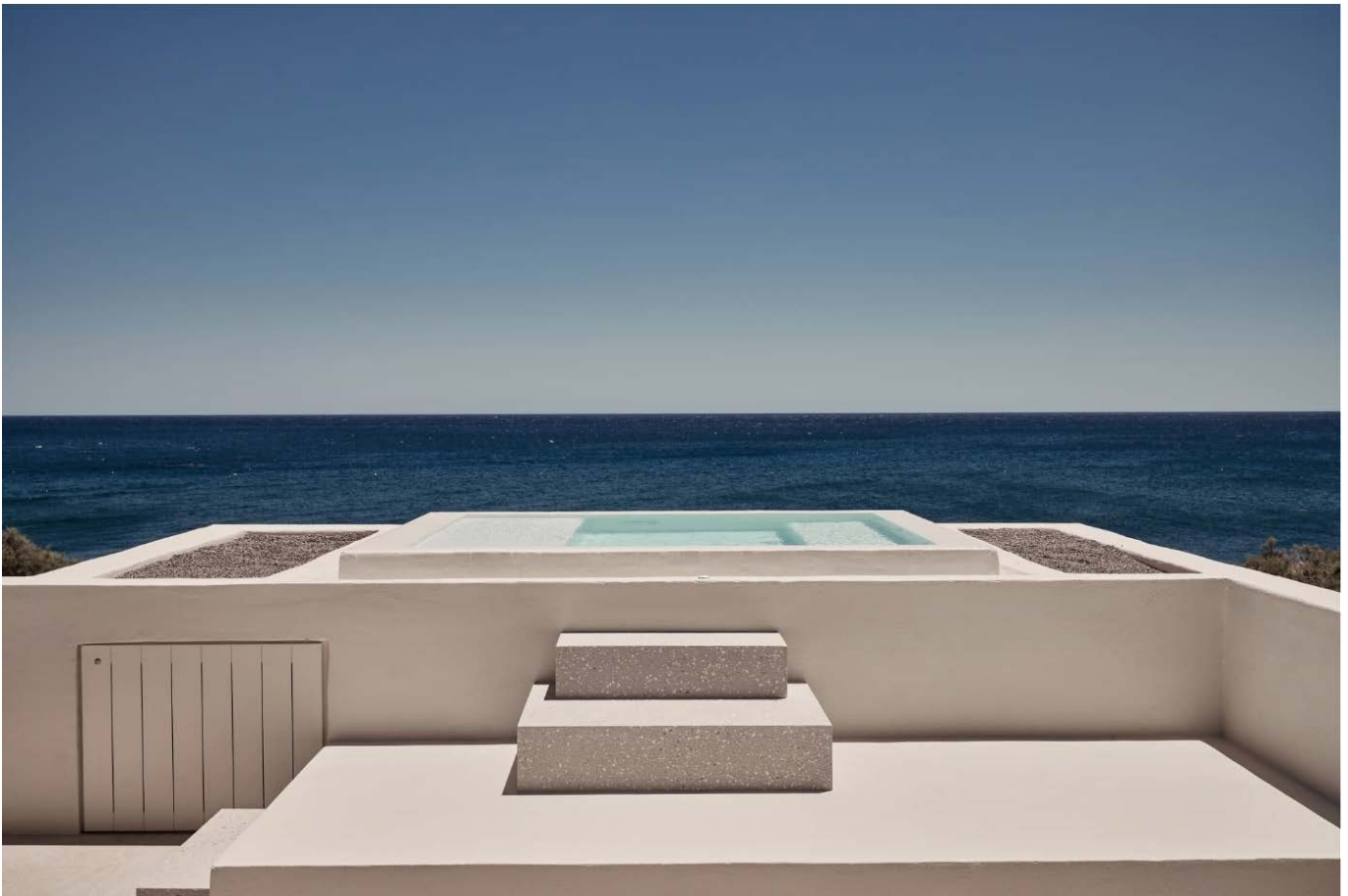
Anchoring applications were carried out using **Sika AnchorFix®-2** special chemical anchor.



PROJECT PARTICIPANTS:

Owner: **KANAVA S.A.**

Specification/design: **Interior Design Laboratorium**



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