



# SIKA AT WORK

Dome & courtyard waterproofing of the church of Agios Nikolaos, Ilion, Attica

WATERPROOFING: Sikafloor®-161, Sikalastic®-843 GP, Sikafloor®-359 N

ROOFING: Sikalastic®-612

JOINT & CRACK SEALING: Sikaflex®-11 FC<sup>+</sup>, Sikasil®-C

BUILDING TRUST



# WATERPROOFING & ROOFING, AGIOS NIKOLAOS' CHURCH



## PROJECT DESCRIPTION

The watertightness of the courtyard in the Agios Nikolaos' church was downgraded, resulting in water ingress into the social event room and the kitchen just below ground level. This phenomenon was adversely affecting the functioning and the prevailing hygiene conditions, as the church is preparing meals for socially vulnerable groups of people. In addition there was a requirement to restore the watertightness of the dome of the temple.

## APPLICATION DEMANDS

The courtyard of the temple had to be sealed, with the least possible nuisance of the temple's functionality and the activities of the congregation.

Moreover, because of the architecture, the design of the building and the height of the dome from the ground level, the waterproofing process had to be quick and efficient. In the dome there were also Plexiglas windows, which had to be sealed with a flexible silicone sealant to ensure complete watertightness of the dome.



## SIKA SOLUTION

For the sealing of the courtyard the application of **Sikalastic®-843 GP** liquid, sprayed, waterproofing membrane system based on pure polyurea was selected. Its short curing time and the almost instantaneous space utilization, combined with its large operating temperature range (-30 ° C to + 100 ° C) and its excellent crack bridging ability were just a few of the benefits that have been taken into account for selection this system. In order to restore the dome's watertightness, the liquid membrane **Sikalastic®-612** was applied. The liquid membrane offers the advantage of maximum application speed and is an excellent choice for waterproofing of areas with complicated shapes and details.

## APPLICATION PROCESS

### Dome waterproofing

Initially, the surface of the dome was prepared by grinding to fully reveal existing cracks on the surface of the element:



Crack sealing was performed using the 1-component, elastic joint sealant & adhesive **Sikaflex®-11 FC**†:



Detail & joint waterproofing was performed using the liquid membrane **Sikalastic®-612**:



**Sikalastic®-612** is a seamless, cold-applied, polyurethane-based, Moisture Triggered Chemistry (MTC) technology liquid membrane. Its curing is activated by air moisture, but is not adversely affected by it. Its main advantage is the application speed and the fact that it is not affected by rain almost immediately after application.



Sealing of Plexiglas windows at the dome was performed using the elastic silicone sealant **Sikasil®-C**:



**Courtyard waterproofing:**

The courtyard of the temple (substrate of embossed paving slabs) was prepared by grinding and the surface was smoothed by applying a scratch coat prepared with **Sikafloor®-161** resin and quartz sand (0.1-0.3mm particle size):



Application of 2-component **Sikafloor®-161** epoxy primer with roller and broadcasting of quartz aggregates:



The basic advantage of the liquid membrane is the extremely fast skin formation time - 10 to 20 seconds!

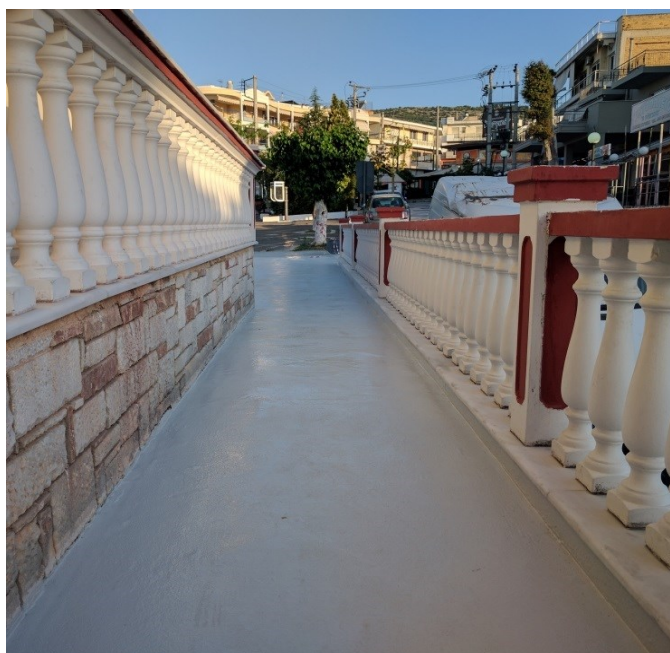


**Sikalastic®-843 GP**, pure polyurea, liquid membrane was the basic waterproofing layer, which was sprayed in two layers using high pressure hot spray equipment:



The 2-component, polyurethane, colored, elastic-tough seal coat **Sikafloor®-359 N** was applied onto the base coat. **Sikafloor®-359 N** is scratch-resistant, exhibits high mechanical strengths and crack bridging ability, while also features very high resistance against UV radiation:





#### PROJECT PARTICIPANTS

Project owner: **Holy Mitropolis of Ilion, Acharnes & Petroupoli**

Contractor: **Emmanouil Kypraios**

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

**Contact**  
Tel.: +30 210 8160600  
Fax: +30 210 8160606  
[www.sika.gr](http://www.sika.gr) / [sika@gr.sika.com](mailto:sika@gr.sika.com)

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