



SIKA AT WORK

RESTORATION OF A PRIVATE RESIDENCE, MAMINAS, ALBANIA

Textile Reinforced Mortar System (TRM): Sika Monotop®, SikaWrap®
Exterior Thermal Insulation Composite System (ETICS): Sika ThermoCoat®

BUILDING TRUST



RESTORATION OF A PRIVATE RESIDENCE, ALBANIA



PROJECT DESCRIPTION

On 26 November 2019 at 03:54 CET, north-western Albania was struck by a strong 6.4-magnitude earthquake with an epicentre 16 kilometres (9.9 mi) west-southwest of Mamurras. The earthquake lasted at least 50 seconds and was felt also in the capital, Tirana.

Many buildings collapsed in the large port city of Durrës and the village of Kodër-Thumanë. Extensive building damages were also present in the cities of Tirana, Laç and Lezhë which are near the epicentre of the earthquake.

One of those is also a private residence located in Maminas (10 km from the earthquake epicenter) which had damaged a significant part of the walls, façade and connecting walls with concrete columns. Diagonal cracks were propagated through mortar and masonry units followed by a failure of masonry walls.

All the refurbishment and exterior thermal insulation works were completed during December 2019 – January 2020.

PROJECT REQUIREMENTS

The building was already in use by a family and some small local businesses in the area, but after the shock it was no longer safe to reside in. So, all the necessary interventions to the structure had to be completed the fastest possible, so as to avoid any accident. In order to do so, the contractor demanded the use of Textile Reinforcement System for Anti-seismic Retrofitting, refurbishment of the internal walls, reparation of the cracks in the Façade, rebuilding the demolished walls. Restoring the damaged concrete columns and application of ETICS system for an energy efficient building.



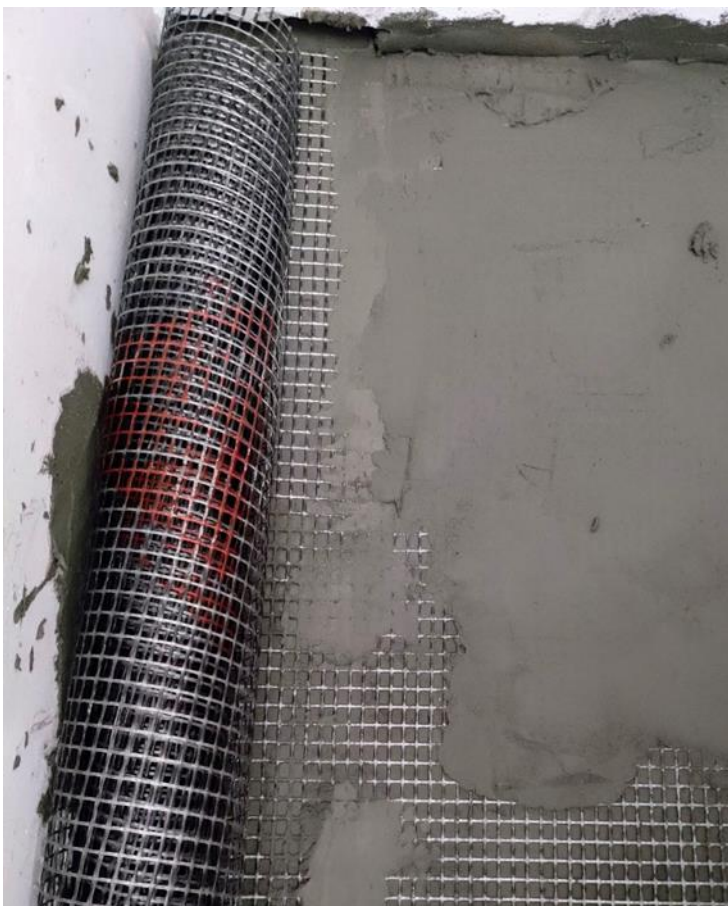


SIKA SOLUTIONS

a) TRM & Anchoring

Sika solution for the project offers of a full range of repair materials. **Sika MonoTop®-627 HP** was used as a high performance ready to use 1-K cementitious mortar for fast concrete repairs of high thickness in concrete columns of R4 grade. Anti-seismic reinforcement of masonry walls including an integrated textile reinforcement system, composed from **Sika MonoTop®-722 Mur E**, a ready to use cementitious mortar, fibre reinforced in combination with **SikaWrap®-350G Grid**, a bi-directional, glass-fibre grid, equipped with alkali resistant coating.

The fast curing anchoring adhesive **Sika AnchorFix®-2+** was used to anchor the steel bars to connect the existing walls with the new ones.





b) ETICS

For the building façade, a solution of external thermal insulation system was selected. The cold climatic conditions in the very humid winter, the intense wind from the coast and the hot summer, require the application of a system that offers increased energy savings and optimization of the cooling and heating and a durable system for the façade itself.

Sika ThermoCoat® ETICS was proposed and applied for façade shell. The system is composed of:

- **Sika® ThermoCoat-1/3 HS:** 1-C, cementitious mortar for bonding & rendering with grid embedding (certified acc. to EN 998-1).
- **Sika® ThermoCoat-2 HS:** White or Grey (containing graphite) EPS 60 – 200 of different thicknesses (certified acc. to EN 13163).
- **Sika® ThermoCoat-4 HS:** Alkali-resistant fibre glass.
- **Sika® ThermoCoat-5 HS Primer:** Water dispersed primer for coating of paste-like renders.
- **Sika® ThermoCoat-5 HS Silic:** Paste-like finishing coat, silicone based (certified acc. to EN 15824)
- **System certification:** ETA no 11/0358, acc. to ETAG 004



There was a requirement to refresh and decorate some parts of the façade. Sika supplied the necessary quantities of SikaColor®-650W, a waterproof, elastic and breathable 1-C paint, which is water-soluble & acrylic-based and especially designed for protection and decoration of facades.



SIKA PRODUCTS IN VOLUMES:

Textile Reinforced Mortar System (TRM):

Sika MonoTop®-722 Mur: **2 tones**

SikaWrap®-350 Grid: **150 m²**

Exterior Thermal Insulation Composite System (ETICS):

Sika ThermoCoat®-5 HS Primer: **125 kg**

Sika ThermoCoat®-1/3 HS Primer: **1,2 tones**

Sika ThermoCoat®-4 HS Yellow: **330 m²**

Sika ThermoCoat®-5 HS Silic: **725 kg**

SikaColor-650W: **100 L**

Repair mortar:

SikaRep®-200 Multi: **100 kg**

Anchoring:

Sika® AnchorFix-2+: **12 pcs**



PROJECT PARTICIPANTS:

Owner: Bujar Kareci

Applicator-contractor: Edmond Perolli

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