

DURABLE BUILDINGS
TRUSTED SOLUTIONS



SUSTAINABLE WATERPROOFING OF FIBER CONCRETE ROOF IN GEORGIA PARLIAMENT



HYPERDESMO® SYSTEM in Georgian Parliament,
Kutaisi Town

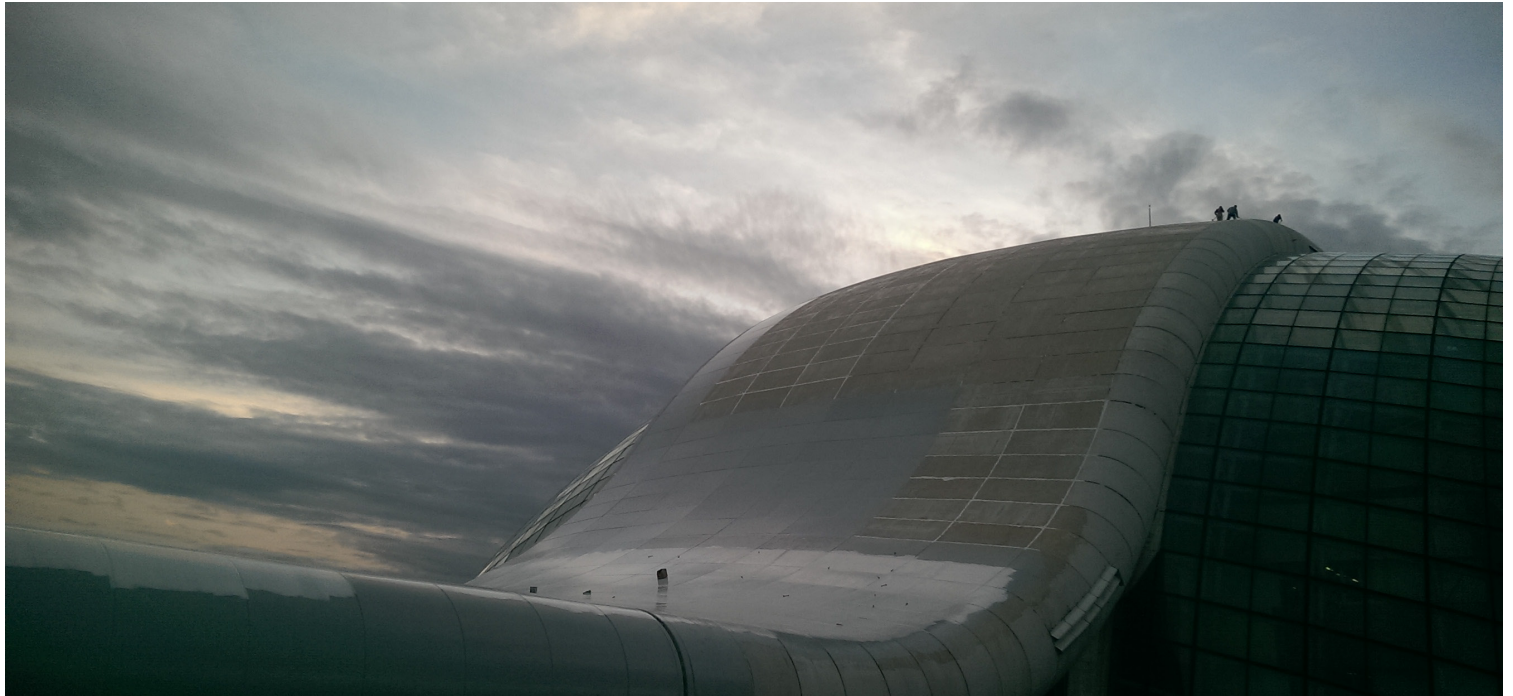


Project Description

The iconic project centered around the construction in Kutaisi, spanning from 2011 to 2012, stands as a testament to the development of the new Georgian Parliament Building. Embodying a fusion of modernity and cutting-edge architectural design, this structure successfully achieves its purpose of symbolizing Georgia's onward journey into a new era.

Distinguished by its avant-garde design, the exterior of the building boasts a commanding 40-meter-high domed eye. This impressive structure features an immense concrete eyelid, accompanied by a striking 150-meter oval-shaped glass and steel dome. The dome is artfully cloaked by a concrete roof, harmonizing aesthetics with functionality. The interior is equally awe-inspiring, featuring a colossal glass dome that hosts multi-level gardens and glass-fronted offices.

This architectural marvel stands as a living embodiment of Georgia's ambitions for a prosperous future, captivating both locals and visitors alike with its visionary design and representation.



WATERPROOFING OF FIBER CONCRETE ROOF IN GEORGIA PARLIAMENT

Project size: 13.000 m²

ALCHIMICA products used:

- Priming - MICROSEALER 50
- Sealing - HYPERSEAL®-EXPERT-150
- Waterproofing - HYPERDESMO®
- Top coat- HYPERDESMO® ADY-E (Neutral)

Project Requirements

In the realm of public infrastructure, precision and attention to detail are paramount. The demands are high, and close monitoring is essential for successful development and completion.

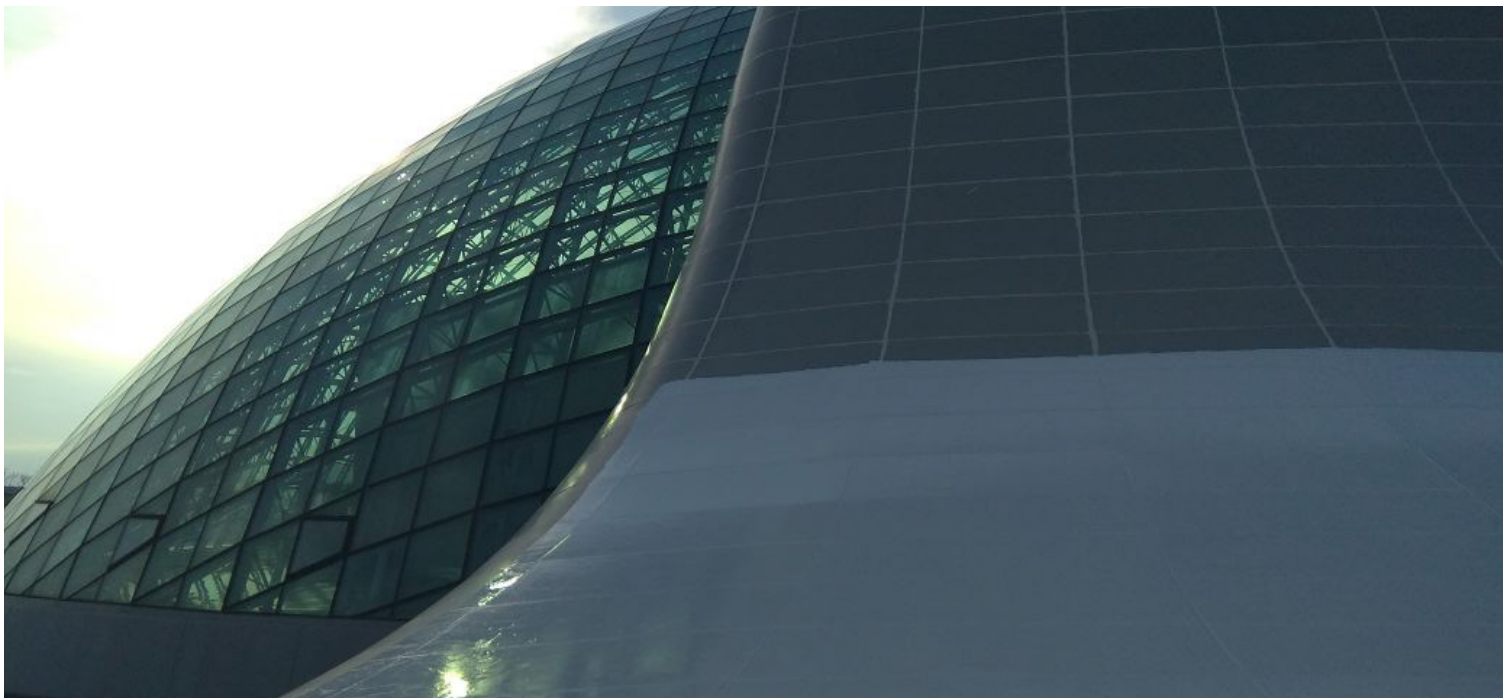
ALCHIMICA, drawing upon its extensive global experience in waterproofing and sealing, stepped up to provide invaluable assistance at every phase of this significant project. We were dedicated to:

- Proposing the ideal products and systems tailored to meet the project's unique technical specifications.
- Offering expert guidance on application methods to optimize both time and cost efficiencies.

The project, with its intricate domed roof featuring numerous slopes and details, presented a host of complexities. Designers faced the challenge of finding a reliable system that could deliver a durable, proven track record solution.

Our recommended waterproofing roof system and application method for this specific project and substrate were meticulously designed to address not only the technical requirements but also the environmental impacts. The ultimate goal was to enhance the building's durability and sustainability, ensuring the roof's high performance for years to come.

At ALCHIMICA, we understand the critical role we play in shaping the success of such demanding and important projects, and we are committed to delivering solutions that stand the test of time."



ALCHIMICA SOLUTIONS

Taking into consideration the impressive fibrocement domed roof but also the climate conditions the HYPERDESMO® roof waterproofing system was selected and applied on the fiber cement roof which successfully covered a total surface of 13.000sqm. The system included the sealing of the roof joints while the certified HYPERDESMO® waterproofing membrane applied in 3 coats combined with the HYPERDESMO® ADY-E high reflective top coat that both together guarantee the durability and the reduction of building's energy costs.



Priming:

We recommend the Microsealer - 50 because it is a next day material which is a solvent-based polyurethane single component primer. It is used as a very low viscosity, deep penetrating, slow cure primer, which has excellent wetting, impregnation, and paint-over time on different substrates, whether of high or low porosity, with an elongation rate 300%.

Properties: Sealing and stabilizing the substrate, insuring good adhesion of the main coat.
Minimum consumption: 100-300 ml/m² (depending on substrate porosity)





Sealing:

Taking into consideration the critical point to deal with the gaps between the fiber connections, we used the HYPERSEAL®-EXPERT-150 to treat and seal the joints.

It is a low modulus expansion joint polyurethane sealant. As a one component material, it is specially formulated to ensure a bubble-free cure even at very high temperatures and humidity climatic conditions and can stay exposed to UV.

ELONGATION >700 - HARDNESS ± 27 Shore A

Properties: Thixotropic with a 50% joint movement accommodation factor and excellent adhesion on substrates such as e.g. glass, aluminum, steel, polycarbonate, etc.



Waterproofing

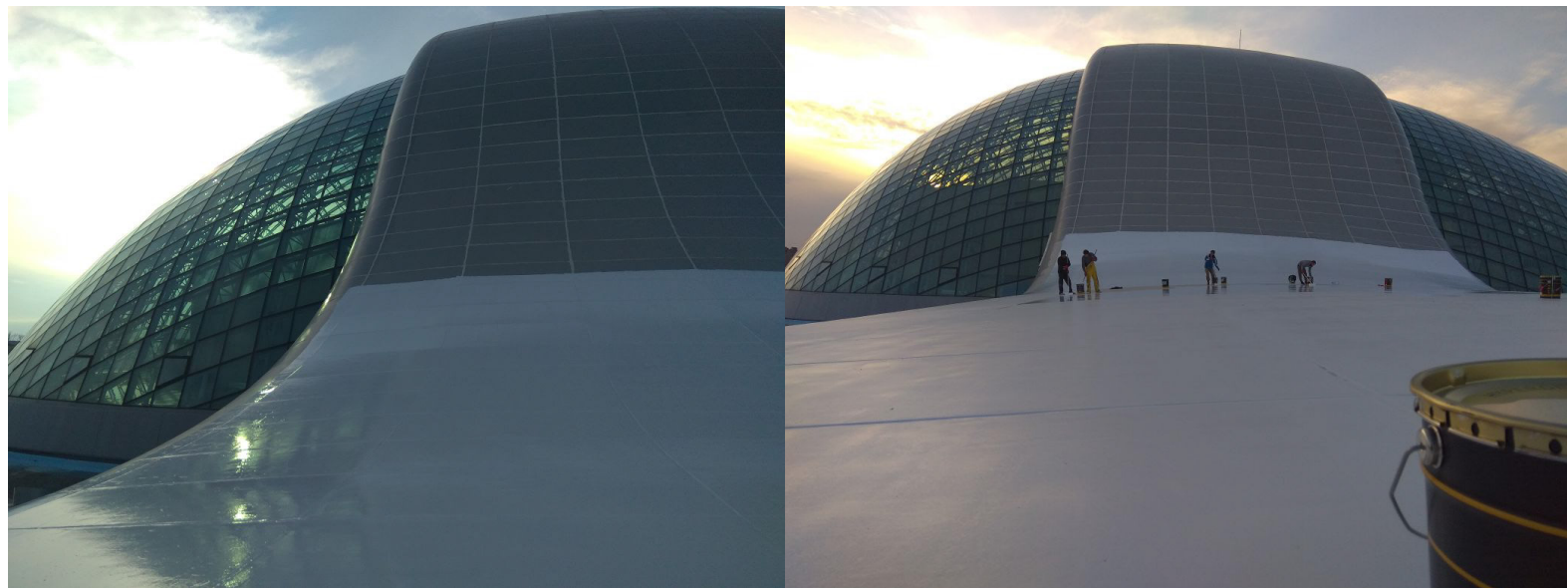
The system included the sealing of the roof joints while the certified HYPERDESMO® waterproofing membrane applied in 3 coats. Ideal for the fibrocement substrate HYPERDESMO® is a waterproofing membrane based on polyurethane. It cures with the humidity in the atmosphere and produces a highly elastic membrane.

Single component, medium viscosity, self-leveling.

Properties: Excellent mechanical, chemical, thermal, UV, and natural element resistance properties.

Minimum total consumption: 1.5-1.8 kg/m²

First coat: 0.7-0.9 kg/m². Second coat: 0.8-0.9 kg/m².



Top Coat

For the maximum system performance and working life we recommend the use of top coating in order the system achieves the ultimate protection

In this case the HYPERDESMO® ADY-E (Neutral) a solvent-based PU top coat used for protection as a Single component, fully aliphatic, non-yellowing, elastic material.

Properties: Excellent hiding power, high traffic resistance. Excellent UV, mechanical and chemical properties

0.200-0.600 kg/m² (depending on traffic conditions)



