



TBILISI **MALL**

Tbilisi Mall Roof Waterproofing Rehabilitation Works

Technical requirements

Content:

1. General information -----	3
2. Technical report -----	4
3. Technical assignment -----	5
4. Warranty -----	6
5. Work conducting schedule -----	7
6. Safety standards -----	7
7. BOQ -----	7
8. Technical features -----	8
9. Photo collage -----	9

1. General Information

The “Tbilisi Mall” shopping center is located at Davit Agmashenebeli Alley 213.

The present building consists of 3 Blocks (A,B and C Blocks). The building has 4 floors and the mentioned rehabilitation works relate to the whole building roof.

The Roof is flat type and is represented by the reinforced concrete slab of 20cm, which is covered with thermal and waterproofing layers. (see pic 1.).

2. Technical Report

The waterproofing of the existing roof was conducted in 2015.

Used Materials: Polyurethane liquid membranes (several layers) and Sealant Hyperseal 25 LM

1. Primer – universal primer 2k-4060
2. Waterproofing membrane – hyperdesmo grey
3. Waterproofing membrane – hyperdesmo white
4. Waterproofing membrane – hyperdesmo grey
5. Waterproofing membrane – hyperdesmo ADY-E grey
6. Sealant Hyperseal 25 LM

As a result of the waterproofing failure there were detected 12 problematic spots where there are water leakages every time when it is raining, and up to 20 spots, where are leakages during long-time rains. The leakages destroyed the roof of the mall corridors and in commercial units.

Moreover the water enters through the ventilation vents, where the water can get in the air flows and following the ventilation joints are to be insulated.

3. Technical Assignment

Rehabilitation of the existing roof waterproofing

- Rehabilitation works includes arrangements of the whole roof waterproofing over the existing one
- Create the rehabilitation Calendar schedule in accordance with the zones
- Fence the particular zone where the planned works are to be performed
- Mark the damaged areas
- Clean the existing insulation layer surface
- Remove unneeded metal ledges, which used to be pillars
- Damaged areas to be processed with special solution
- Make fabric seams at the damaged areas and to be coated with one layer of the waterproofing material, so make solid the existing insulation layer.
- Treat the surface with the special liquid before coating with the insulation material.
- Apply the waterproofing layers according to instruction. Every next layer should be of different color to avoid omissions of the layers.
(e.g. white and grey colors)
- Vertical Walls, Equipment, Ducts and parapets should be coated with the insulation material from the roof surface at 70cm minimal height.
- Insulation should be done also around the existing ventilation “mushrooms”.
- In case the insulation materials will be sprayed, the protective covers should be done for other surfaces and equipment
- Upon finishing works in the particular zone, remove the fence and move to the next zone

Ventilation equipment and Skylight buildings waterproofing

- Areas to be processes
 - All ventilation seams
 - Sunroof building components, gaps between sandwich panels and their ends from the top and bottom.
 - Perimeter and roof of equipment and connections with the ventilation;
- Peel all damaged, cracked and scraped existing insulation
- Treat the surfaces with the special liquids
- Fasten ventilations with screws where needed (in case of existence)
- Apply the waterproofing layers according to instruction. Every next layer should be of different color to avoid omissions of the layers.
(e.g. white and grey colors)
- In case it is needed to repair the line of the air duct, those works will be conducted by the mall FM Department

- In case the insulation materials will be sprayed, the protective covers should be done for other surfaces

Notes:

- The particular attention should be paid to the A block part, where are located Carrefour equipment. The mentioned equipment (chillers, boilers and pump station) are under the water leakage risk and those zones need to be treated with precise attention. Water leakages in these areas are permanent despite of the dry seasonal conditions and the damage areas are not identified.
- The waterproofing materials should be of highest world standard and should match the existing waterproofing materials.

Anti-slip pathway renovation

- Remove existing anti-slip coating on damaged areas;
- Make fabric seams at the damaged areas and to be coated with one layer of the waterproofing material, so make solid the existing insulation layer.
- Treat the surface with the special liquid before coating with the insulation material.
- Apply the waterproofing layers according to instruction. Every next layer should be of different color to avoid omissions of the layers. (e.g. white and grey colors);
- Apply new anti-slip coating, where exists.

4. Warranty

- The warranty for the performed works should not be less than 10 years
- The damages caused by mechanical impact, natural disaster and conducting other works on the waterproofing surface will not be considered as the warranty obligations. All other cases should be rectified by the guarantor.
- There is no margin standard considered by the warranty – the guarantor will conduct all the works from the beginning if it will be needed (need is determined in case the water leakage does not stop 3 times in a row after the repairs are done)

5. Work Schedule

The project work conduction schedule should consist of:

- Name of the works, preferable sequence of the works
- The date of start/end of the relevant works, graphically
- Transportation time of materials and equipment to the building site.

6. Safety Standards

- All the works conducted on the territory of the Mall and on the territory around the Mall should comply with health and safety standards (helmet, safety glasses, safety belt and etc.)
- The Health and Safety Manager of the Mall will consult the Contractors (or the representative of the Contractor) regarding the safety standards before the works.
- The works can be started only after both parties Contractor (or the representative of the Contractor) and Health and Safety Manager of the Mall will sign the document
- The contractor will have permit to use only safe and licensed equipment, such as ladder, scaffoldings
- The building site should be fenced with the standing poles and belts, which will be movable.
- High VOC materials can be used near the ventilation suction portals only in the nonworking time of ventilation units.

7. Evaluation

The Proposal should include all the expenses necessary to finish the project;

In the Proposal all works should done with unit prices and total prices;

In the Proposal, the volumes should be taken below given numbers.

The payment will be done according to F-2 form (list of performed works and real volumes).

8. Technical Features

- The overall area of the roof is about 20596sqm
- Hermetic seal joints for central dome and Skylights 4 pcs, total area approximately 6550m
- Waterproofing vertical raises on parapets and walls approximate area – 4000 sq.m.
- Waterproofing should not be done on towers roof
- Waterproofing should not be done on A and C atriums Roofs
- Roof anti-slip Pass way – 3500 sq.m.
- HVAC duct joints waterproofing – 5000 m;

Given volumes are approximate and will be specified by the selected Contractor.

Given volumes should be used in the tender proposals

The roof drawing is in a separate file

9. Photo Collage

“Cavea” Ventilation Equipment



Air Ducts joints



Dome of the central atrium



Dome seams



Typical air duct and equipment



Solar equipment



Solar sandwich panels and seams









Existing waterproofing typical damages





Protrusive metal pipes, which are to be removed. There are a lot of.



Mushroom

