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09 . 02 .2026

Inspection of the technical condition of the Tbilisi Mall facade
Contract No. 01/12-2025 dated 02.12.2025

Tbilisi 2026

LIST OF CONTRACTORS

Ivan Savchenko Head of Expertise. Field work contractor. Building and structure inspection engineer. Over 7 years of experience.

Certificate OB No. 192535 dated 07.10.2022, certified to perform building and structure inspection functions, specialization: building structures, IRUP "Belstroycenter" MAiS of the Republic of Belarus, valid until 07.10.2027.

Diploma A No. 1487307 dated 30.06.2020, Polotsk State University, Industrial and Civil Engineering, Civil Engineer

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Diploma A No. 1487342 dated 30.06.2020, Polotsk State University, Industrial and Civil Engineering, Civil Engineer

CONTENTS

1. LIST OF TERMS AND DEFINITIONS

I - serviceable (good) condition - minor defects are eliminated during maintenance;

II - operational (satisfactory) condition - existing defects do not impair the operational capability of the structure under the specific operating conditions, but may reduce its service life in the future. Defects are eliminated during maintenance and routine repairs, the exact timing of which may be determined by a certified building inspection specialist. Under actual loads and stresses, the structure may be operated without restrictions until the next inspection;

III - limited operational (not entirely satisfactory) condition - limited operational (not entirely satisfactory) condition: existing defects have some effect on the load-bearing capacity of the structure, but there is no danger of sudden collapse. Operation of the structure under actual loads is permitted with periodic monitoring of its condition, strict compliance with all operational requirements, and possible restrictions on certain operating parameters. A detailed inspection and calculation of the structure is required, with an assessment of its load capacity, as well as the development of measures for repair and, if necessary, reinforcement of the structure;

IV - inoperable (unsatisfactory) condition - a technical condition in which at least one indicator does not ensure that the building or its individual elements perform their designated functions in accordance with their purpose, safety requirements for human life and health, and environmental protection; urgent load restrictions are required. Major repairs, reinforcement, or replacement of elements or structures are required (to be specified by calculation);

V - critical (pre-emergency) condition - a condition of a building (or its individual elements) in which its further operation is unacceptable or restoration to a working condition is impossible or impractical due to the appearance of excessive deflections, cracks, local or general destruction, and other signs of resource failure; it is necessary to evacuate people from the danger zone, urgent unloading of structures and/or installation of temporary fastenings followed by dismantling and replacement of structures.

Defect - any individual non-compliance of a building or its individual elements with the requirements of design and regulatory documentation.

Significant defect - a defect that significantly affects the intended use of the building and/or its durability, but is not critical.

Critical defect - a defect that makes it practically impossible or unacceptable to use the building for its intended purpose.

Wear and tear is the process of deterioration in the performance characteristics of a building or its individual elements over time, taking into account changing requirements for them.

Physical wear and **tear** - deterioration of technical and related performance characteristics of a building or its individual elements at a given point in time.

Obsolescence - the failure of the main parameters of a building that determine living or production conditions, the volume and quality of services provided to meet modern requirements.

Inspection - a set of works on the collection, processing, systematization, and analysis of data on the technical condition of a building and its individual elements, assessment of their technical condition and degree of wear.

Damage is a defect formed as a result of exposure (climatic, mechanical, chemical, and other).

Technical condition - a set of properties characterizing the degree of compliance of a building and its elements with the requirements of design and regulatory documentation.

When assessing the load-bearing properties of structures, defects are classified into **critical** (class 1, $\Delta>40\%$), **significant** (class 2, $\Delta\leq40\%$), **and insignificant** (class 3, $\Delta\leq10\%$), where Δ is the excess or understatement (in an unsafe direction) of the actual value of the controlled parameter compared to its limit (maximum or minimum) value.

By number (degree of spread), defects and damage are classified as **single** - occupying up to 10% of the area, linear size or quantity, **numerous** - up to 40%, and **massive** - over 40%.

By degree of responsibility, elements or their components are classified as **first degree of responsibility** - elements whose local failure can lead to complete or limited failure of the system of elements, to a significant reduction in the performance characteristics of structures or premises, to a significant deterioration in the main technical and economic indicators, **second degree of responsibility** - elements not related to the first degree.

Permissible deviations are deviations that do not interfere with the operability of the structure.

Unacceptable deviations are deviations whose presence renders the structure partially inoperable or inoperable.

Deviations from design solutions - differences between the design solutions adopted in the design documentation for the structures under investigation and the requirements of modern standards and modern design forms.

Deviations from **the actual condition of structures** - differences from the spatial position, geometric dimensions, shape and continuity of structures and elements, quality, cross-section and placement of connecting elements, properties of steel structural elements and connections specified in the design documentation.

2. INSPECTION METHODOLOGY

2.1. The methodology for carrying out the work was adopted in accordance with SP 13-102-2003 and GOST 31937-2024, which regulate the types, order of organization, and performance of work on the technical inspection and operation of building structures and structures.

2.2. The inspection work was carried out in strict accordance with the safety rules set out in GOST 31937-2024.

2.3. Instrumental measurement of the geometric parameters of structures was carried out in accordance with the requirements.

2.4. Work was carried out to identify defects made during the construction of the surveyed building structures. At the same time, the compliance of existing structures with the requirements of current regulatory and technical documents was checked.

2.5. This Technical Report on the condition of the building structures of the facility is published as a separate volume and is not included in the project documentation and is of a recommendatory nature.

3. INTRODUCTION

3.1. This conclusion has been prepared based on an inspection of the technical condition of the Tbilisi Mall facade, in accordance with the agreement dated December 2, 2025.

3.2. The purpose of the work is to determine the actual condition of the facade structures of the Tbilisi Mall building.

3.3. Field work was carried out in December 2025 and January 2026.

3.4. The work and development of recommendations to ensure the continued safe operation of the structures were carried out in accordance with the Customer's technical specifications (see Appendix A to this Conclusion).

3.5. In accordance with GOST 31937-2024, SP 13-102-2003, GOST 57208-2016, and the technical specifications, the following work was performed:

- collection of initial data, study of available technical documentation;
- visiting the site, inspecting the site structures, identifying defects and damage, their parameters and volumes with photographic documentation, and taking the necessary measurements;
- determination of the main topological parameters of the structures;
- analysis of the survey results, determination of the operational suitability of the structures and the facility as a whole;
- preparation of a technical report with recommendations for the elimination of unacceptable defects and damage in building structures, as well as their further safe operation.

3.6. In the event of defects and damage to building structures not reflected in this technical report that affect the operational safety of individual structures and the facility as a whole, or if differences in the structural design of the facility from that given in this technical report are identified, the developers of the report should be contacted immediately for additional inspection of the structures: +995 598 900 158.

4. BRIEF DESCRIPTION OF THE OBJECT

4.1. The Tbilisi Mall shopping center is located at: Georgia, Tbilisi, Agmashenebeli Avenue, N213 (cadastral code 01.72.14.007.435)

Figure 4.1. Building layout

4.2. The total area of the building is 42,692 m².

4.3. There is no project documentation for the structures under investigation.

4.4. The axes on the graphic materials are presented schematically for orientation in the location of the elements and their description.

4.5. The customer provided an expert opinion prepared by Robert Bird Group dated December 10, 2019. These materials are taken into account in the current technical condition report.

4.6. Standard loads and climatic data according to the data of "Construction Climatology" (PN.01.05-08) - Tbilisi

- construction climate zone - III$_3$
- coldest five-day average temperature - +1.5 ºC;
- snow cover weight - 0.5 kPa;
- standard wind pressure value once every 5 years - 0.38 kPa;
- Seismic hazard - 8 points.

5. INSPECTION OF THE TBILISI MALL FACADE

5.1. Inspection of the facade of the lightweight insulation system along axis 1-6/A-C and at elevation +6,000...+23,800

5.1.1. This section of the facade is constructed as a lightweight insulation system. The insulating layer is made of extruded polystyrene foam with graphite added to the structure (graphite polystyrene foam). The thickness of the insulation is 50 mm. This polystyrene foam is commonly used for facades due to its greater energy efficiency.

5.1.2. Characteristics of similar polystyrene foam boards:

- Density ~25...35 kg/m3;
- Compressive strength ~ 250 kPa
- Thermal conductivity ~0.035 W/(m K)

5.1.3. Based on the results of local inspections, the thermal insulation is attached to the external columns/beams of the building frame and filled with walls made of hollow cellular concrete blocks on porous fillers. With this type of attachment, the surface class complies with the requirements of SP 293.1325800.2017:

- compressive strength class of heavy concrete base not less than B15 or C12/15;
- compressive strength class of the base made of cellular, porous concrete and concrete on porous aggregates not less than B2.5.

It is impossible to check the actual flatness of the base at the time of inspection. Tolerances are presented in Table 1.

Parameter Name	Value or Condition
Deviation from verticality of surfaces and corners along the entire building height (except as specified in the design), mm, not exceeding	10
Deviation from straightness (flatness) of irregularities over a 2 m length, not exceeding: Number of irregularities Depth of irregularities, mm Height of irregularities, mm	 3 10 3
Level differences between adjacent substrate elements, mm, not exceeding	10
Width of cracks on the wall surface, mm, not exceeding	0,3
Presence of moist wall structures (areas of wetting)	Not permitted
Presence of delaminated layers	Not permitted
Adhesion strength of the existing decorative-protective coating to the substrate: Plaster, facing Paint coating	 Absence of hollow sound when tapping the surface Absence of blistering, peeling, and chalking

Table 1. SP 1.03.03-2022. Permissible values of parameters for the subbase prepared for the installation of the insulation system

Based on the results of the inspections, the insulation is attached using the "beacon" and "strip" methods. The "beacon" method is used in cases where the wall surface has irregularities of up to 1 cm. The adhesive composition is applied to the surface of the insulation board in the form of beacons at the rate of 8-10 beacons per 0.5 x 1 m board.

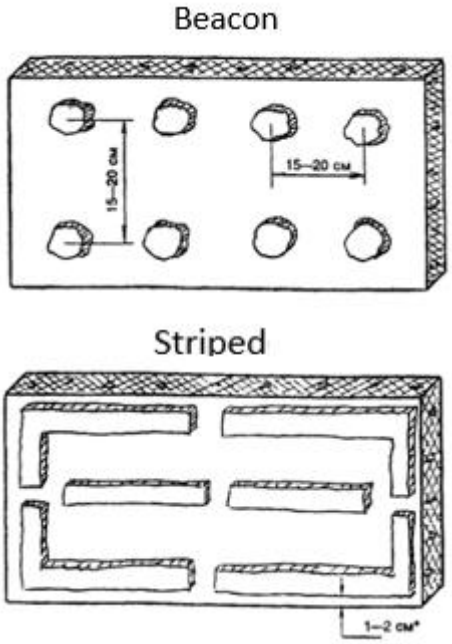


Figure 5.1.1. Applying adhesive to the surface of insulation boards

At the bottom of the insulation mounting units, at elevation ~6,000 m, there are no base strips; these strips are attached to the subfloor as a support layer for the bottom row of insulation.

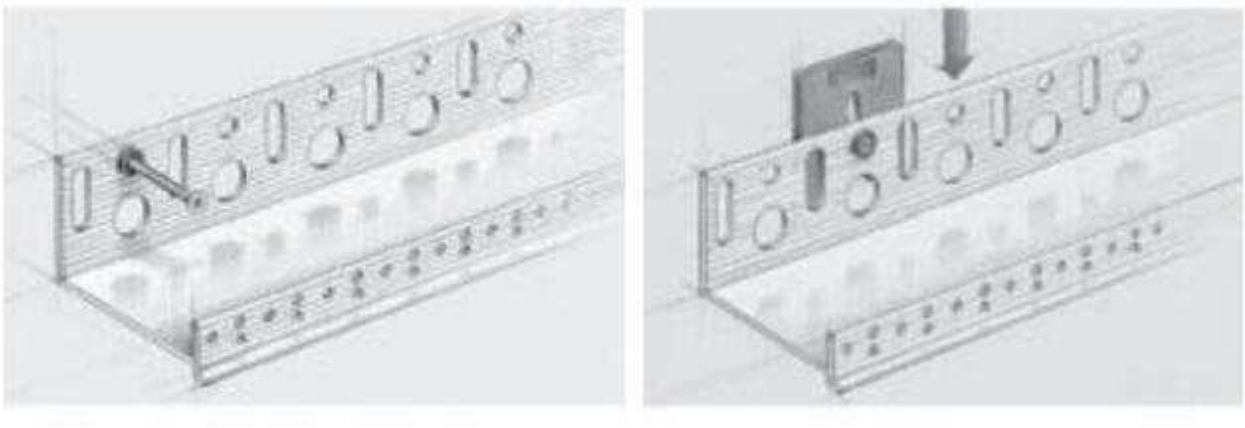


Figure 5.1.2. Installation of base rails as a support profile

5.1.4. Expanded polystyrene boards are fastened to the wall with 10 mm diameter disc dowels. In accordance with the requirements of clause 7.35.1, "On buildings of normal and increased levels of responsibility, the number of anchors with disc dowels per unit of facade area must be at least 5 pcs/m2."

Due to the complete exterior finish, the number of dowels can be determined by local areas, including at elevations 0.000...6.000 of these facades (ventilated facade with suspended panels), the slabs are fastened with 2 dowels per slab without fixing the corners. The slabs are not fastened at the corners. The actual execution does not meet the requirements.

The diagram of fastenings and mounting nodes of the facade is presented in Appendix B of this conclusion.

The consumption of anchors with disc dowels per unit of facade area is determined by calculation, taking into account the calculated resistance of the anchor with a disc dowel to the pulling force from the base, the wind region and type of terrain, and the accepted scheme of mechanical fastening of the thermal insulation layer.

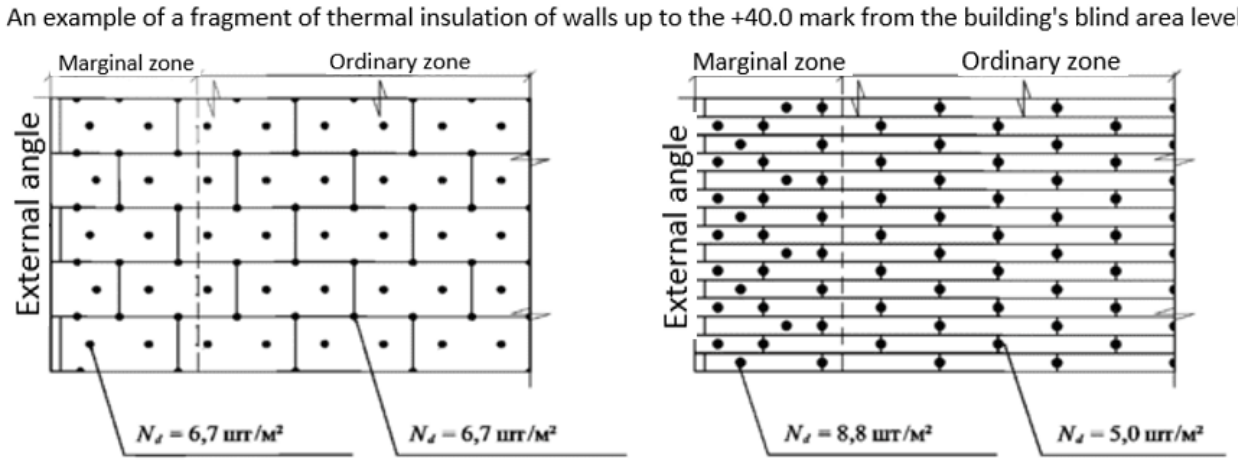
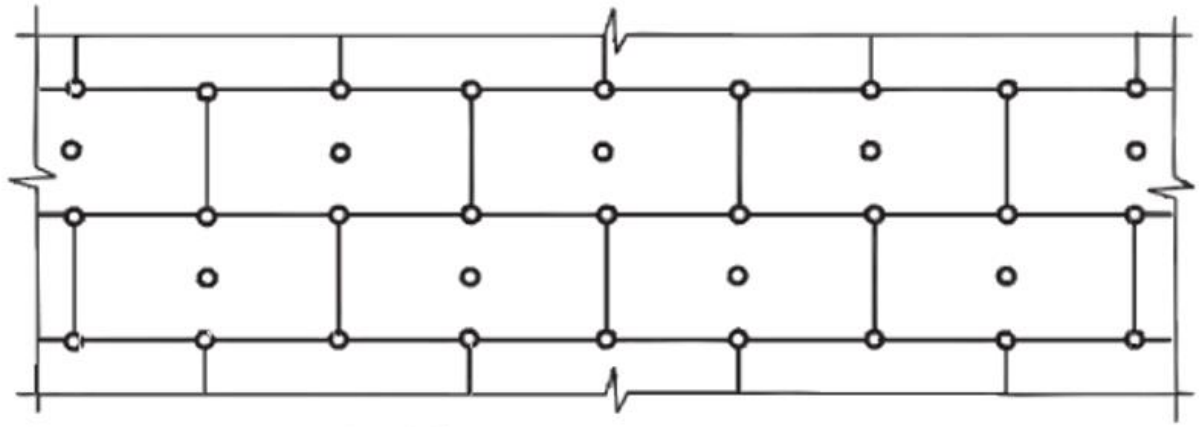


Figure 5.1.3. Examples of installation schemes for disc anchors as part of a thermal insulation system



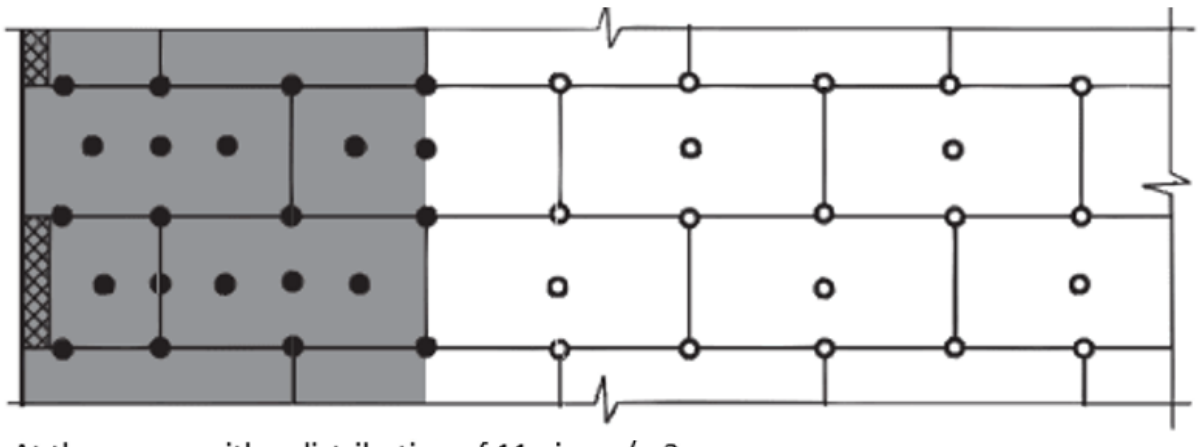


Figure 5.1.4. Installation schemes for anchor devices for 100x50 cm slabs from the "Guide to the design and installation of thermal insulation systems"

Substrate	Minimum number of anchor devices based on wall height, m					
	Up to 8		From 8 to 20 inclusive		More than 20	
	Wall	Angle	Wall	Angle	Wall	Angle
With insulation thickness of 40–50 mm						
Concrete	5	8	5	10	6	14
Solid brick / lightweight concrete						
Aerated concrete / gas silicate						
Hollow block of lightweight concrete						

Table 2. "Guide to the design and installation of thermal insulation systems." Minimum number of anchor devices installed for structural fastening of expanded polystyrene slabs

5.1.5. The exterior finish is plastered and then painted with a thickness of 2-3 mm. Plastering is done using facade glass mesh.

5.1.6. The pilasters in the facade structure are box-type with a cross-section of 280x160(h)mm with a frame made of a closed-type steel profile 40x20mm. The pilasters are designed to accommodate engineering networks and facade lighting.

Polystyrene foam sheets 30 mm thick are mounted to the steel frame as a covering for the frame. They are attached to the frame with adhesive, with a contact layer width of 10-15 mm.

Regulatory documents do not standardize bases in the form of "steel frames." In practice, for such structures, the cladding sheets are additionally mechanically fastened to the steel frame.

The outer surface of the expanded polystyrene is plastered and then painted, without the use of reinforcing facade glass mesh.

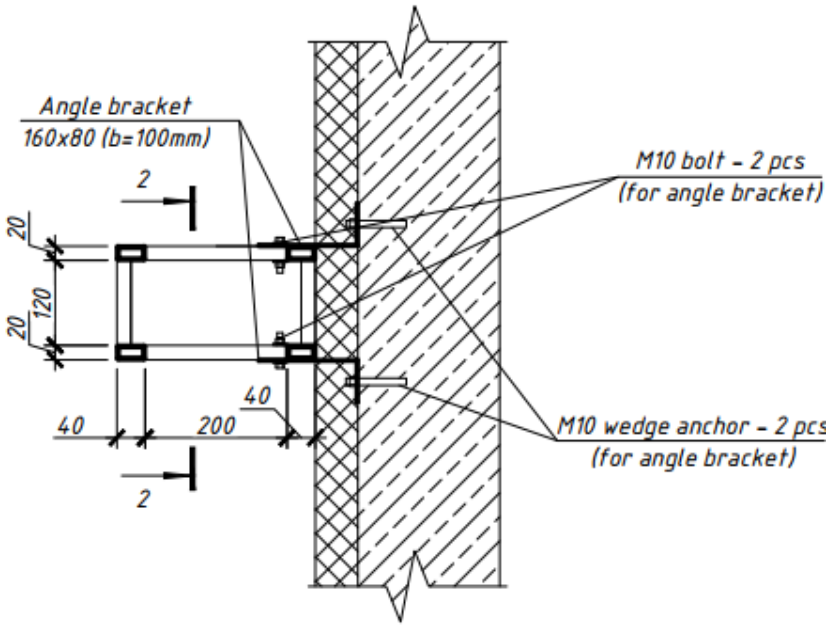


Figure 5.1.5. Cross-section of a horizontal pilaster

5.1.7. The frame section elements are fastened with welded joints. The steel frame is attached to the exterior wall structure of the building using steel angles and M10 bolts. The fastening and mounting scheme for the pilasters is presented in Appendix B of this conclusion.

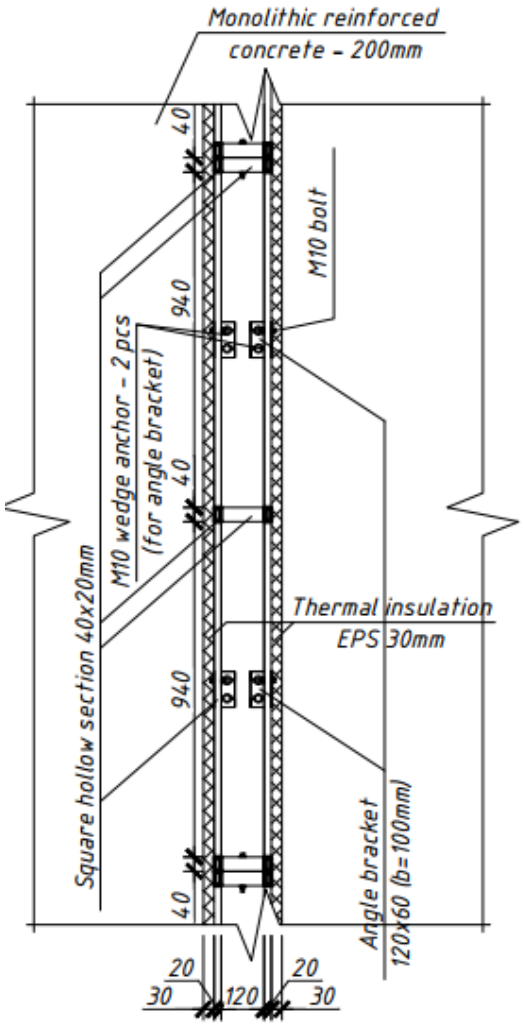


Figure 5.1.6. Cross-section of a vertical pilaster.

5.1.8. The locations of the facade element openings and their node composition are shown in Appendix B to this conclusion.

5.1.9. The facade was checked for compliance with the requirements of GOST R 57208-2016 and GOST 31937-2024.

During the inspection, the facade was checked for the following defects:

- checking the flatness of the cladding "field";

- checking for the presence/absence of cracks in the facing plaster layer, the facing layer of brick or piece masonry elements;

- checking the actual location, presence of chips, cracks in the individual elements of the facing layer, displacement, violation of the line of horizontal and vertical joints between the facing elements;

- determining the types of surface damage to the facing layer and the fastening elements of the facing elements (cavities, hollows, voids, cracks, traces of moisture and leaks on the facing elements, efflorescence, corrosion, etc.);

- checking for defects and damage, the integrity of the elements covering slopes, aprons, flashings, and other structural elements protecting the interior cavity (sub-facing space) from atmospheric precipitation;

- checking for movable elements with an assessment of the overall instability of the structure;

- composition and integrity of the fastening units of the substructure and elements of the facing layer;

- presence and condition of anchor fastenings;

- presence of traces of corrosion and damage to metal elements;

- integrity of riveted and bolted connections;

5.1.10. During the inspection of the facade of the lightweight insulation system, the following defects were identified:

- numerous (covering an area of more than 10% to 40%) minor defects in the form of gaps (more than 2 mm) between the insulation elements. This defect was formed during the installation of the facade and the absence of joint filling of more than 2 mm. When using expanded polystyrene insulation, the gaps are filled with mineral wool slabs. It is permissible to fill the gaps with construction foam.

- isolated (up to 10%) minor defects in the form of areas with damage (peeling) of the finishing layer of wall insulation.

- Numerous (covering more than 10% to 40%) minor defects in the form of destruction of the finishing layer of the facade pilasters. This widespread defect is located on the side of maximum wind loads on the north side. Reinforced facade glass mesh is not used in the construction of the pilaster finish.

- isolated (up to 10%) significant defects in the form of cracks and breaks in the pilaster cladding (expanded polystyrene panels). This defect is caused by poor-quality fastenings (adhesive), without the use of mechanical fastenings and facade glass mesh;

- isolated (up to 10%) significant defects in the form of missing nuts or insufficient tightening of nuts securing steel frames to the wall;

- Massive (more than 40%) minor defects in the form of surface corrosion of the metal frame of the pilasters. This defect is caused by partial destruction of the protective and finishing layer of metal;

- Massive (more than 40%) minor defects in the form of the absence of a support (starting profile). Due to the absence of a project, this work could not have been included in the initial project because there was no strict requirement in the regulatory documents.

- isolated (up to 10%) significant defects in the form of detachment of the insulating layer from the wall and the formation of stress cracks; this defect is located in A-B/1 and 5-6/A. This defect arose due to the unevenness of the bonding base (exceeding Table 1) and insufficient mechanical fastening.

5.1.11. Technical condition category of the facade structures of the lightweight insulation system in axes 1-6/A-B **III Limited operational** technical condition.

Figure 5.1.1. General view of the facade in axes 4-6/A

Figure 5.1.2. General view of the facade in axes 3-4/A

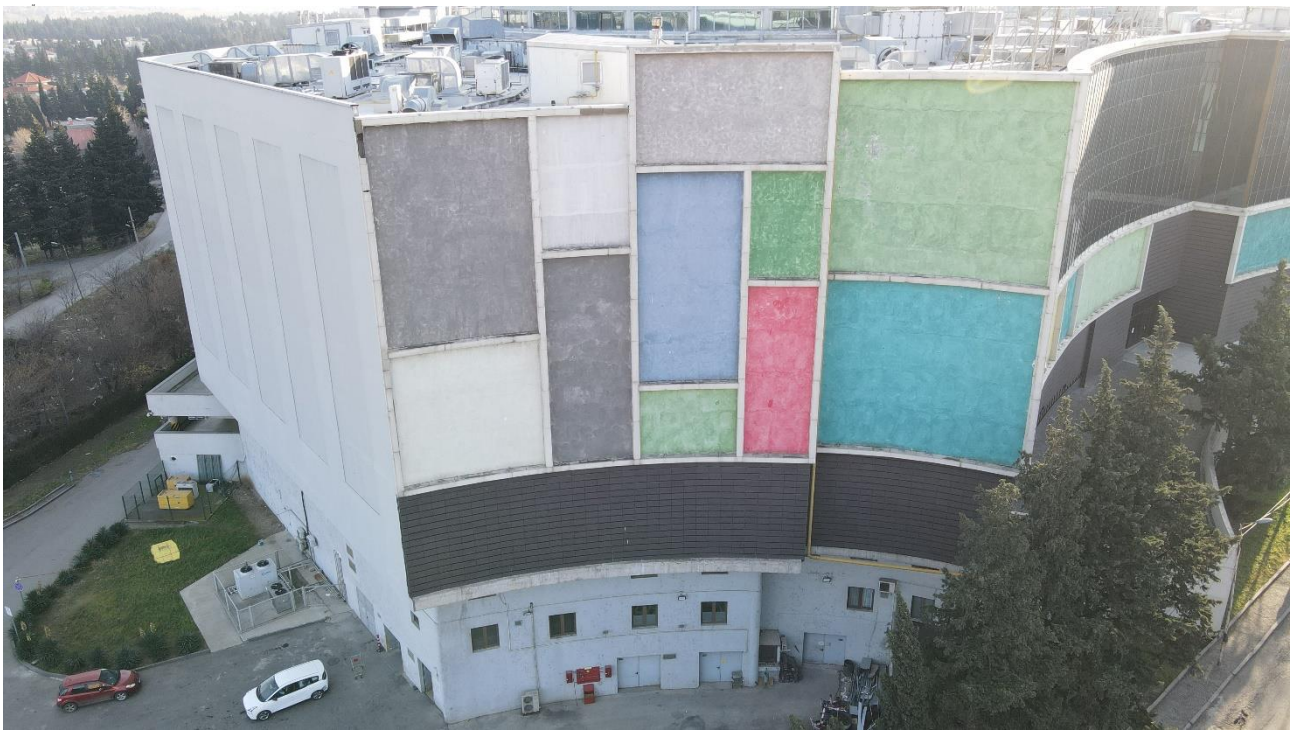


Figure 5.1.3. General view of the facade 6/B-C

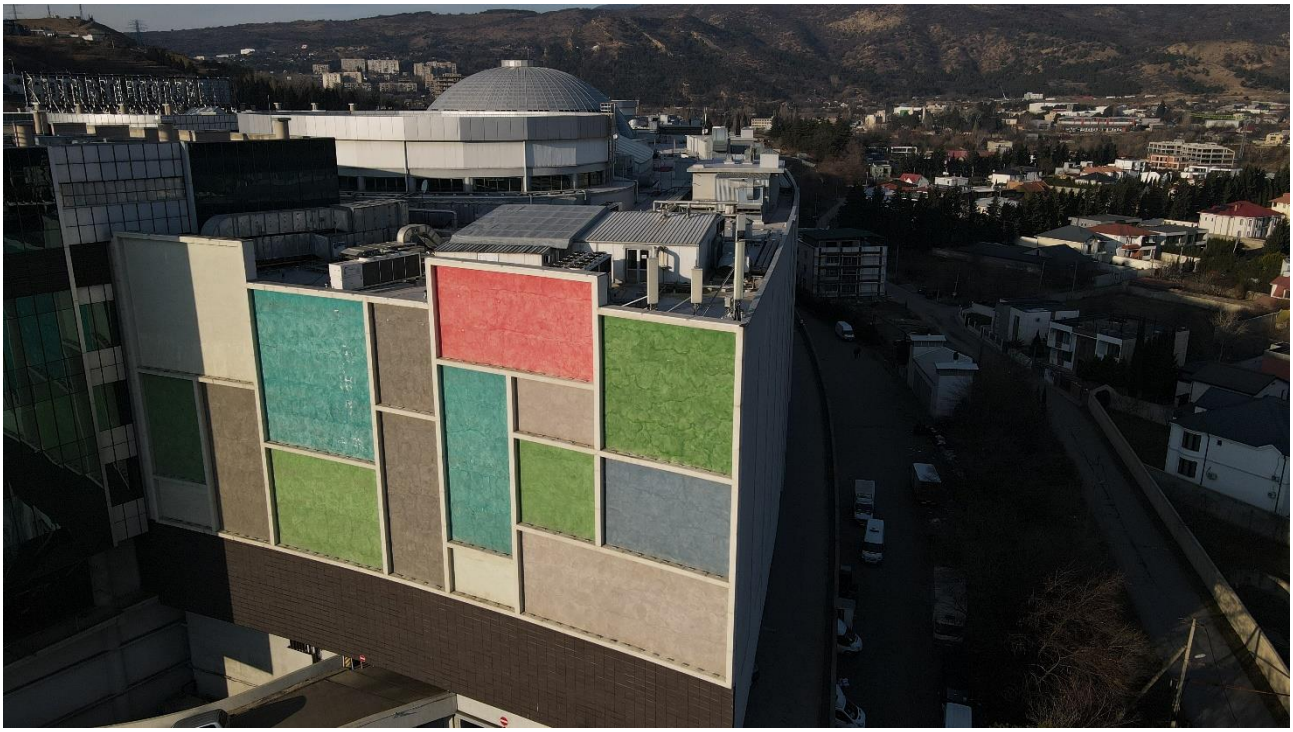


Figure 5.1.4. General view of the facade in axes B-C/1

Figure 5.1.5. General view of facade A-B/1

Figure 5.1.6. General view of the facade 3-4/A

Figure 5.1.7. Place for attaching an advertising banner. Fragments of the banner

Figure 5.1.8. General view of the facade

Figure 5.1.9. General view of the facade. Damage to the finishing layer of the imposts

Figure 5.1.10. Drip molding along the upper edge of the facade. The joints of the drip molding are treated with sealant

Figure 5.1.11. Drip molding along the upper edge of the facade. The joints of the drip molding are treated with sealant

Figure 5.1.12. Damage to the junction between wall insulation and vertical jamb

Figure 5.1.1 2. Cracks in the finishing layer of vertical imposts

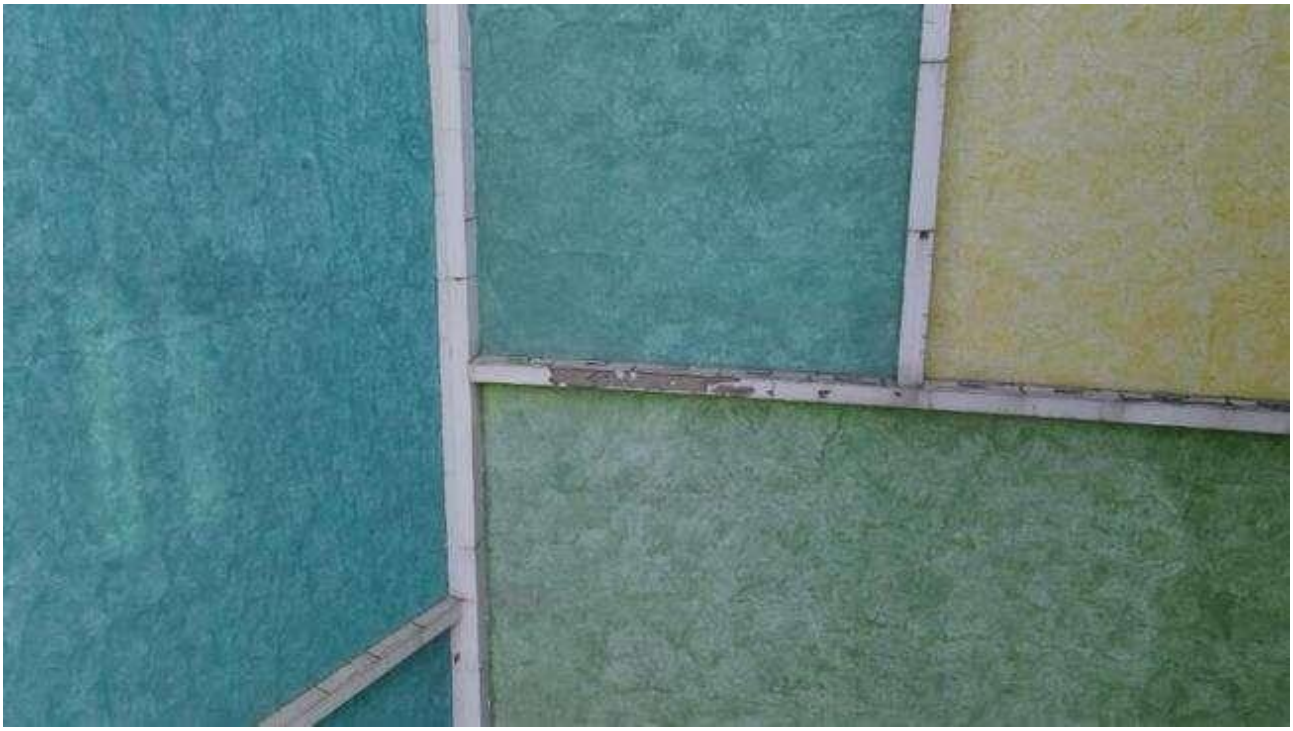


Figure 5.1.13. Damage to the finishing layer of imposts

Figure 5.1.14. Damage to the finishing layer of imposts

Figure 5.1.15. Localized damage to the PPS insulation layer

Figure 5.1.16. Localized damage to the PPS insulation layer

Figure 5.1.17. Repair of the facade section

Figure 5.1.18. Space for a banner. Areas of facade damage

Figure 5.1.19. Space for a banner. Areas of facade damage

Figure 5.1.20. Space for a banner. Areas of facade damage

Figure 5.1.21. Section of the building facade

Figure 5.1.22. Section of the building facade

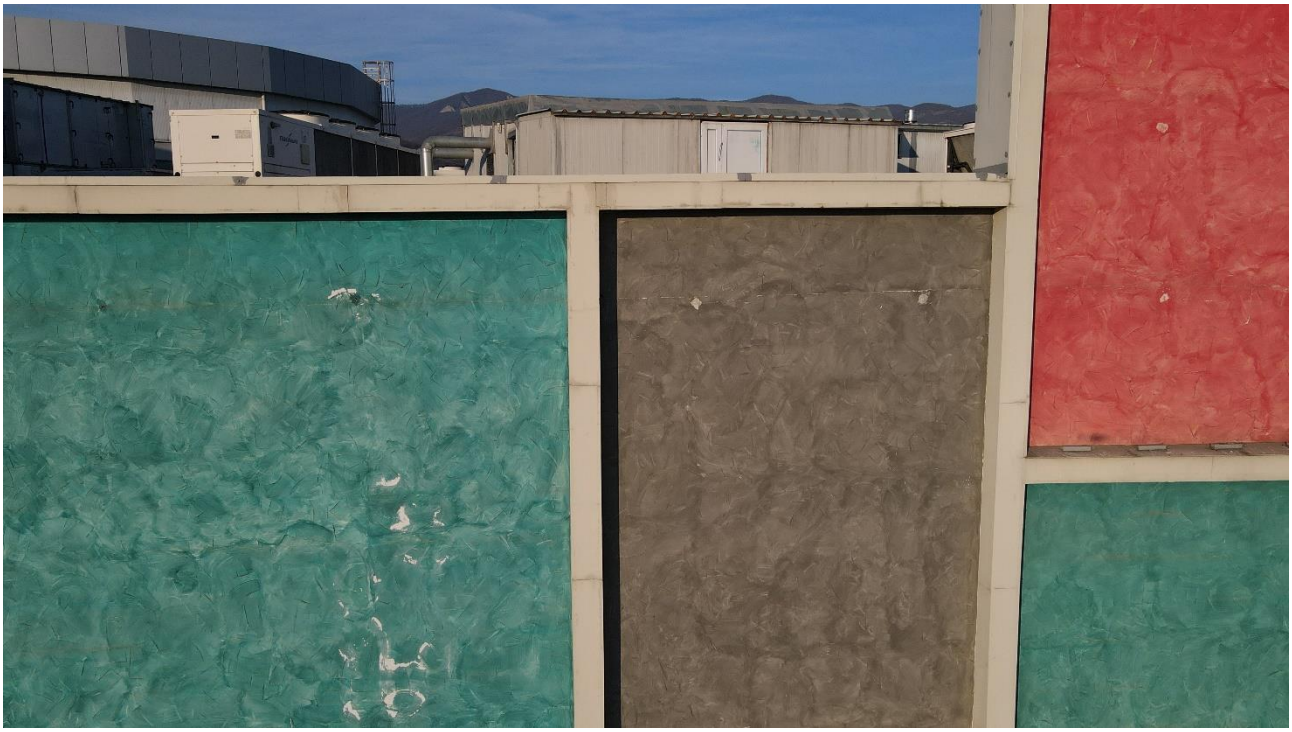


Figure 5.1.23. Areas of damage to the finishing layer

Figure 5.1.24. Facade junction along axis 1/C. Insufficient parapet overhang

Figure 5.1.25. Facade junction along axis 6/C. Destruction of vertical impost

Figure 5.1.25. Destruction of vertical impost. Corrosion of steel impost frame along axis 6/C

Figure 5.1.26. Destruction of the horizontal impost. Corrosion of the steel frame of the impost

Figure 5.1.27. Destruction of the horizontal impost. Corrosion of the steel frame of the impost

Figure 5.1.28. Areas of facade damage. Unsatisfactory facade construction (insulation delamination). Damage to the impost.

Figure 5.1.29. Lack of insulation layer adhesion along axis 5-6/A

Figure 5.1.30. Opening of the facade

Figure 5.1.31. Connection of the vertical and horizontal frames of the facade impost. Surface corrosion

Figure 5.1.32. Opening of the vertical impost. Areas of adhesive bonding (non-continuous). This method of fastening is not standardized; similar solutions must also be mechanically fastened due to the small contact area

Figure 5.1.33. Opening of the horizontal impost

Figure 5.1.34. Facade lighting in the design of horizontal imposts

Figure 5.1.35. Fastening of the impost frame to the slab at elevation +6.000. Corrosion of frame elements. Lack of a support profile for the insulation. Non-continuous gluing of the insulation

Figure 5.1.36. Frame for placing banners. Talpers in the frame structure. Corrosion of welded joints

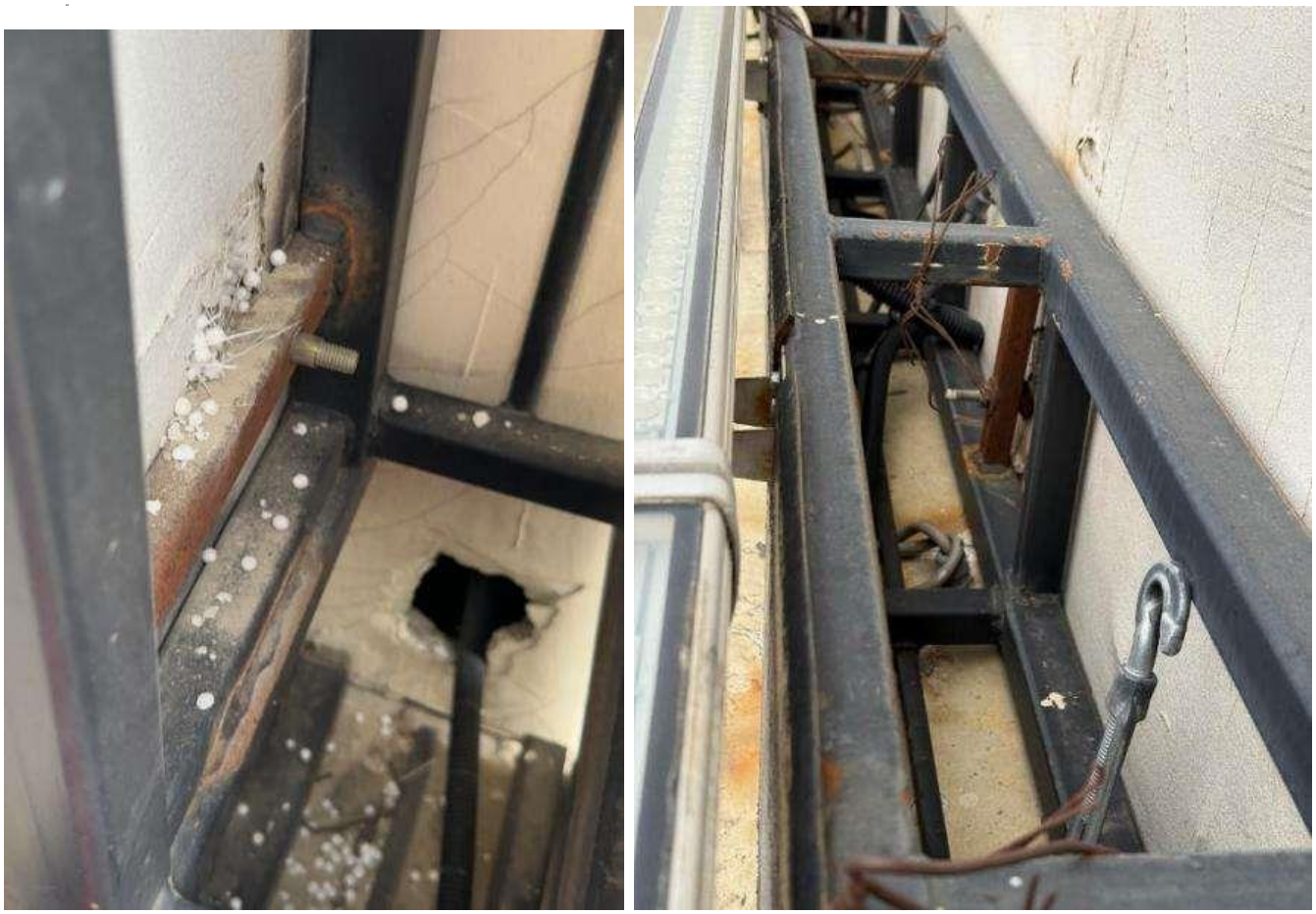


Figure 5.1.37. Fastening of the frame for placing banners. Lack of a clamping nut on the fastener

Figure 5.1.38. Opening of the horizontal impost. Areas of surface corrosion

Figure 5.1.39. Cracks in the finishing layer of the horizontal impost

Figure 5.1.40. Sealant in the flashings of horizontal imposts

Figure 5.1.41. Fastening of horizontal imposts to the wall

Figure 5.1.42. Opening the finishing layer of the horizontal impost

Figure 5.1.42. Frame of a vertical impost

Figure 5.1.43. Opening the finishing layer of a vertical impost

Figure 5.1.44. Exposure of the wall finishing layer

Figure 5.1.45. Destruction of the horizontal impost. Corrosion of the steel frame

Figure 5.1.46. Aerated concrete block of the building wall

Figure 5.1.47. Corrosion of the building impost frame

Figure 5.1.48. Fastening of the building impost frame to the wall

Figure 5.1.49. Fastening the frame of the building impost to the wall. Connecting the frame elements to each other

Figure 5.1.50. Fastening the building impost frame to the wall

Figure 5.1.51. Fastening the building impost frame to the slab at elevation +6.000

Figure 5.1.52. Corrosion of the impost frame

Figure 5.1.53. Crack on the facade of the building. Delamination of the insulation layer. This defect was caused by an uneven foundation and installation defects.

Figure 5.1.54. Gap up to 50 mm between the insulation and the wall

Figure 5.1.55. Gap up to 50 mm between the insulation and the wall

Figure 5.1.55. Opening of insulation

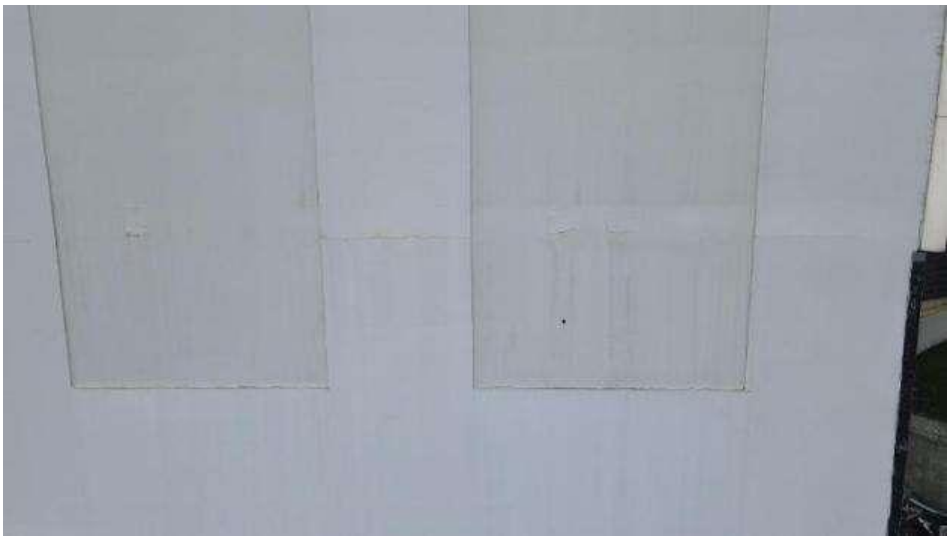


Figure 5.1.56. Cracks in the plaster layer of the lightweight insulation system in axes 1-6/C

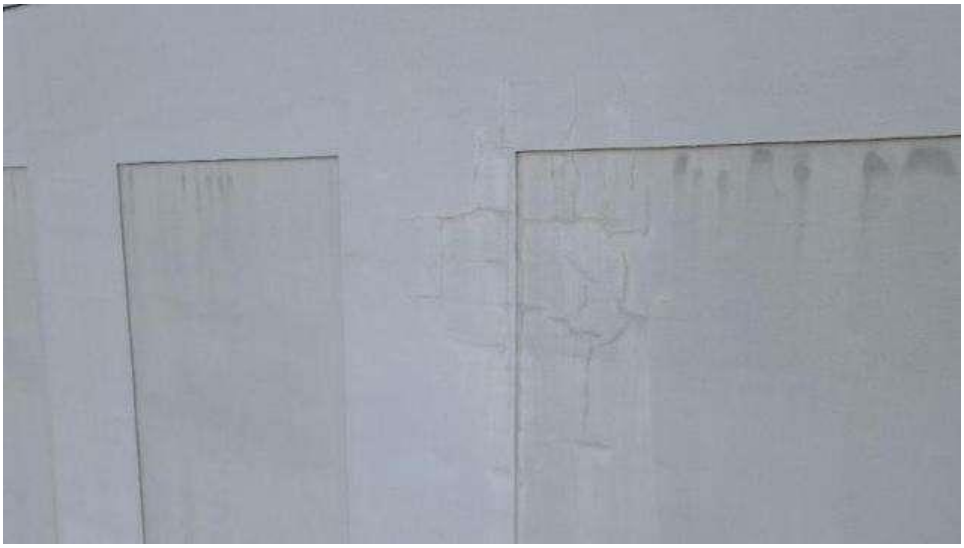


Figure 5.1.57. Cracks in the plaster layer of a lightweight insulation system

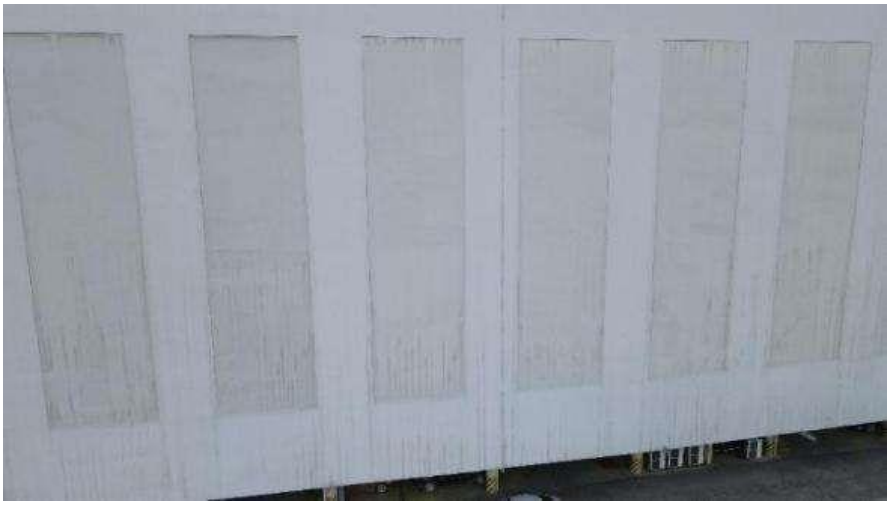


Figure 5.1.58. Cracks in the plaster layer of a lightweight insulation system

Figure 5.1.59. Peeling of the finishing layer. Cracks in the plaster layer of the facade in axes 1-6/C

Figure 5.1.60. Wall insulation in axes 1-6/C

Figure 5.1.61. Crack on the facade of the building in axes 5-6/A. Delamination of the insulation layer.

Figure 5.1.62. Crack on the facade of the building in axes 5-6/A. Delamination of the insulation layer.

Figure 5.1.63. Crack on the building facade in axes 5-6/A. Delamination of the insulation layer.

5.2. Inspection of the ventilation facade in axes 1-6/A-C, elevation 0.000...+6.000 and 1-3/A-C, elevation 0.000...+23.800

5.2.1. The section under inspection, in axes 1-6/A-C at elevation 0.000...+6.000, is designed as a ventilated curtain wall system. The layout and components of this type of facade are presented in Appendix B to this report.

The insulation layer in axes 2-6/A is made of graphite expanded polystyrene (EPS) with a thickness of 50 mm. In axes 1-2/A-B, extruded expanded polystyrene is used in local areas**.**

It is impossible to check the actual evenness of the base at the time of inspection. Tolerances are presented in Table 1, section 5.1.

5.2.2. The thermal insulation layer is similar to the lightweight insulation system described in section 5.1. Based on the results of the inspections, the insulation is attached using the "beacon" and "strip" methods. The "beacon" method is used in cases where the wall surface has irregularities of up to 1 cm. The adhesive composition is applied to the surface of the insulation board in the form of beacons at the rate of 8-10 beacons per 0.5 x 1 m board.

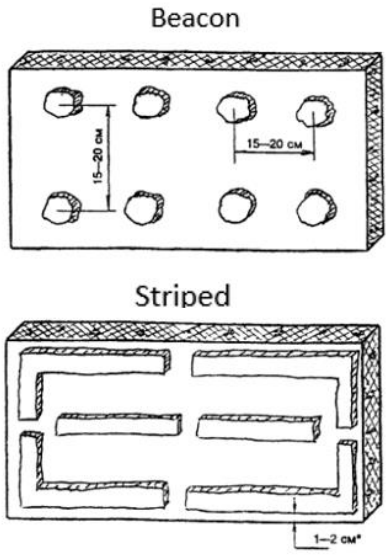


Figure 5.2.1. Application of adhesive to the surface of insulation boards

There are no base strips at the bottom of the insulation mounting units, at a height of ~0.000 m. These strips are attached to the subfloor as a support layer for the bottom row of insulation.

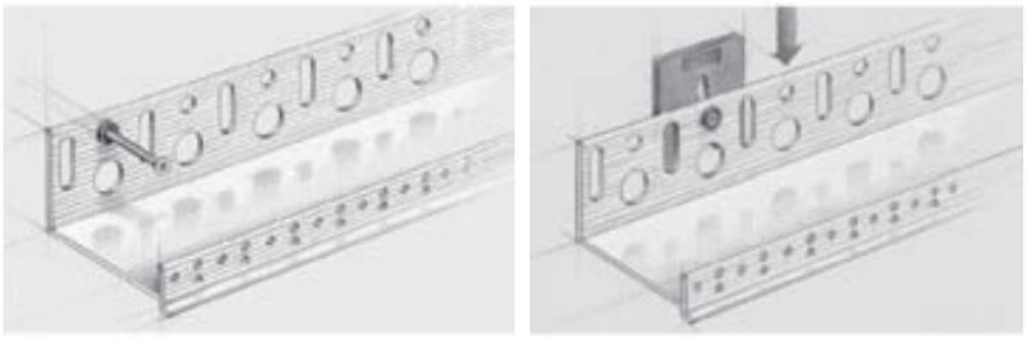


Figure 5.2.2. Installation of base strips as a support profile

5.2.3. The polystyrene foam boards are fastened to the wall with two 10 mm diameter disc dowels per board, which is insufficient. This fastening is similar to the lightweight insulation system described in section 5.1. of this Conclusion.

No wind and water protection membrane has been installed on the surface of the insulation. This requirement is accepted by the design decision; with an insulation layer of expanded polystyrene (EPS), this membrane is not mandatory.

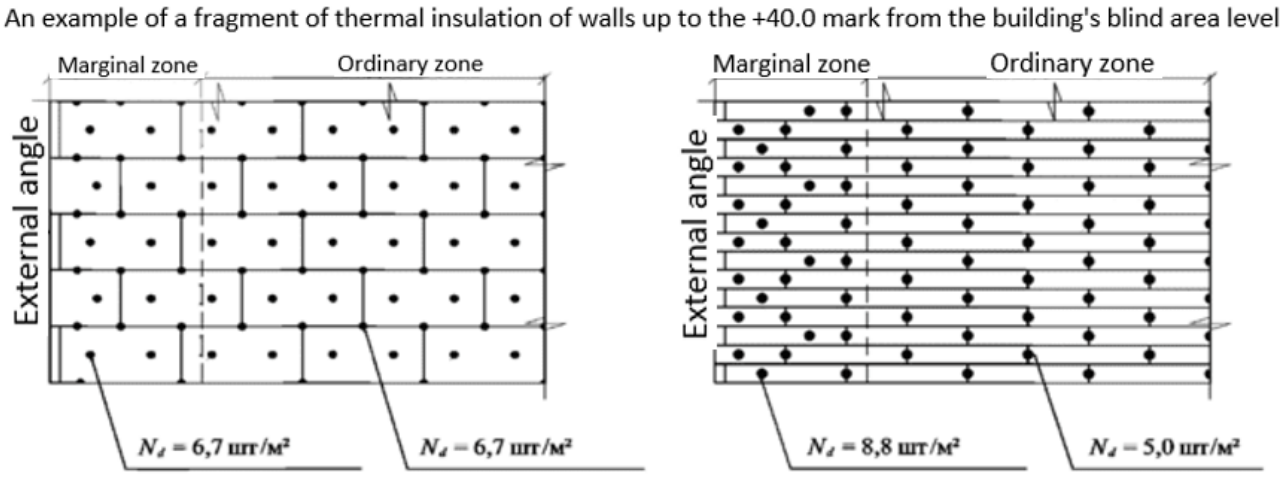


Figure 5.2.3. Examples of disc anchor installation diagrams as part of the insulation system

5.2.4. The outer layer of the facade is made of 10 mm thick ceramic granite panels. The panels are glued only to the vertical posts (on both sides). In accordance with SP 522.1325800.2023, adhesive bonding is permitted (the main standard describes mechanical bonding).

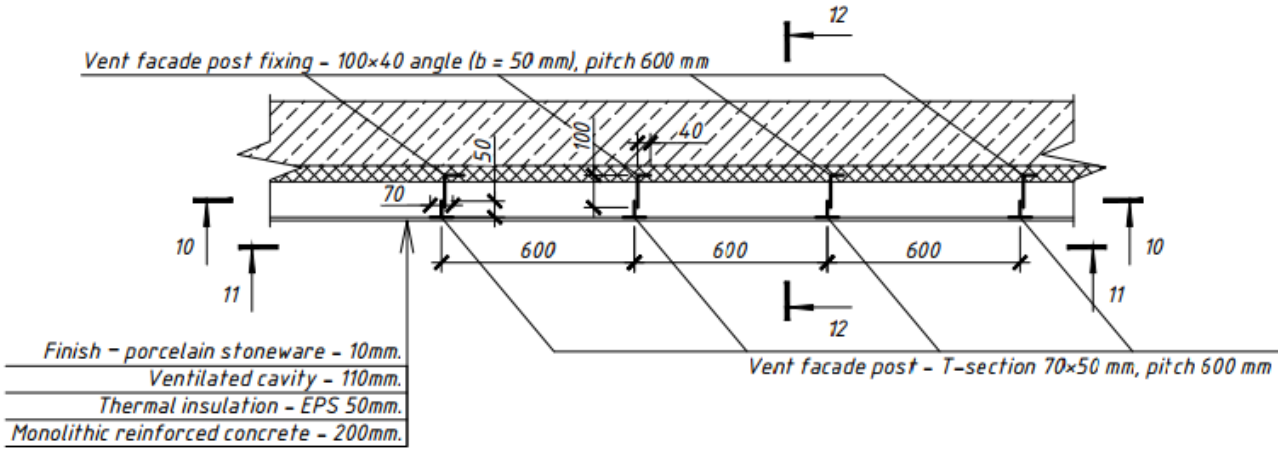


Figure 5.2.3. A diagram of the ventilation facade frame is provided in the appendix.

There are special requirements for adhesive fastening:

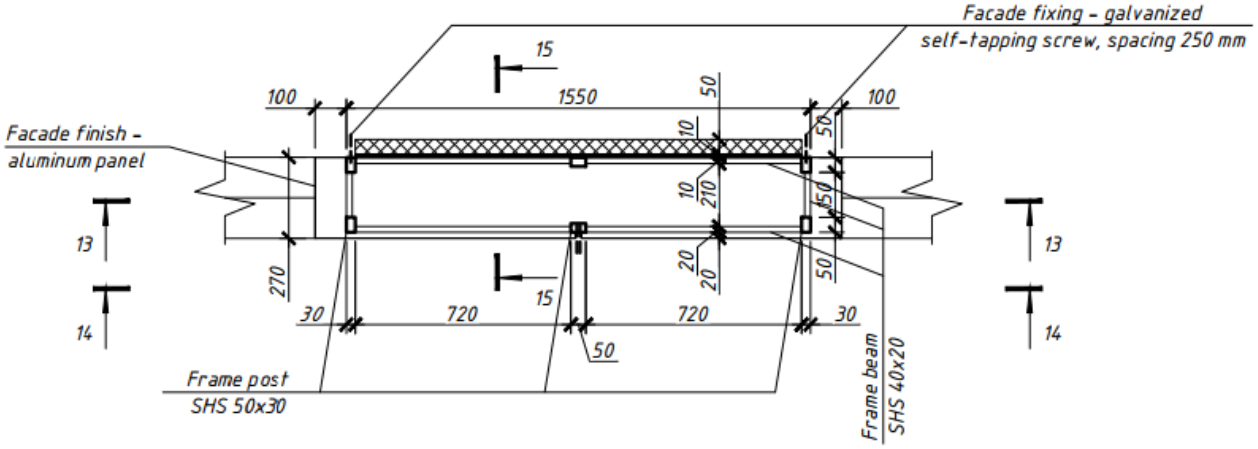
"When using adhesive fastening, the design documentation must include calculations of the dimensions and spacing of the adhesive joint, justification of the load-bearing or self-supporting type of adhesive fastening, and data from adhesion tests of the adhesive sealant."

"When designing facing products using materials with different physical and mechanical characteristics and/or using adhesive or combined fastening methods, the

theoretical justification of the technical solutions of the project should be based on experimental data."

5.2.5. The ventilation facade frame diagram is presented in Appendix B to this conclusion.

5.2.6. The section of the facade between axes 1-3/A-B at elevation 0.000 +23.800 is designed as a ventilated curtain wall system. The layout and components of this type of facade are shown in Appendix B to this conclusion.



The curtain panels are made of aluminum and are mechanically fastened with screws to a steel frame.

The frame is made of steel profiles with a closed section of 50x30 mm and 40x20 mm. The frame is connected to the wall with anchors, and the frame elements are welded together.

The insulation layer of this system is made of mineral wool mats with a foil layer. Rolled bitumen waterproofing is used on the outside of the thermal insulation mats.

5.2.7. The facade was checked for compliance with the requirements of GOST R 57208-2016 and GOST 31937-2024.

During the inspection, the curtain wall was checked for the following defects:

- checking the flatness of the cladding "field";
- checking for the presence/absence of cracks in the facing plaster layer, the facing layer of brick or piece masonry elements;
- checking the actual location, presence of chips, cracks in piece elements of the facing layer, displacement, violation of the line of horizontal and vertical joints between facing elements;
- determination of the types of surface damage to the facing layer and the fastening elements of the facing elements (cavities, hollows, voids, cracks, traces of moisture and leaks on the facing elements, efflorescence, corrosion, etc.);
- checking for defects and damage, the integrity of the elements covering slopes, aprons, flashings, and other structural elements protecting the interior cavity (sub-facing space) from atmospheric precipitation;
- checking for movable elements with an assessment of the overall instability of the structure;

- composition and integrity of the fastening units of the substructure and elements of the facing layer;

- presence and condition of anchor fastenings;

- presence of traces of corrosion and damage to metal elements;

- integrity of riveted and bolted connections;

5.2.8. During the inspection of the building's curtain wall, the following defects were identified:

- widespread (more than 40%) minor defects in the form of an insufficient number of disc dowels for fastening the insulation. This defect was formed during installation.

- numerous (covering an area of more than 10% to 40%) minor defects in the form of gaps (more than 2 mm) between insulation elements. This defect was caused during the installation of the facade and the absence of joint filling of more than 2 mm;

- numerous (covering more than 10% to 40%) minor defects in the form of delamination of slats and panels from the frame posts. This defect is due to physical wear of the adhesive composition;

- isolated (up to 10%) significant defects in the form of missing nuts or insufficient tightening of the nuts securing the frame of the hanging system to the wall in axes 1-6/A-B at elevation 0.000...+6.000;

- massive (more than 40%) minor defects in the form of destruction of the stitching in the inscription "TBILISI MALL".

- massive (more than 40%) minor defects in the form of surface corrosion of the metal frame of the facade mounting system. This defect is due to partial destruction of the protective and finishing layer of the metal frame;

- isolated (up to 10%) minor defects in the form of mechanical damage (dents) on aluminum panels in axes 2-3/A'.

- isolated (up to 10%) minor defect in the form of broken glazing stained glass in axes 3/A;

- massive (more than 40%) minor indirect defects in the form of leaks in facades made of aluminum panels due to leaks in ventilation grilles.

5.2.9. Technical condition category of ventilated curtain wall structures with ceramic granite panel finish **III Limited operational** technical condition.

Technical condition category of ventilated curtain wall system structures with aluminum panel finish **II operable (satisfactory) condition.**

Figure 5.2.1. General view of the curtain wall in axes 6/A-B

Figure 5.2.2. Fastenings of the insulation layer (insufficient). Increased gaps between slabs. Adhesive layer on the vertical fastening element of the ventilated facade

Figure 5.2.3. Fastening of the facade frame to the wall

Figure 5.2.4. Delamination of slats and panels from the frame uprights

Figure 5.2.5. Failure to tighten the nut securing the frame to the wall

Figure 5.2.6. Detachment of slats and panels from frame posts

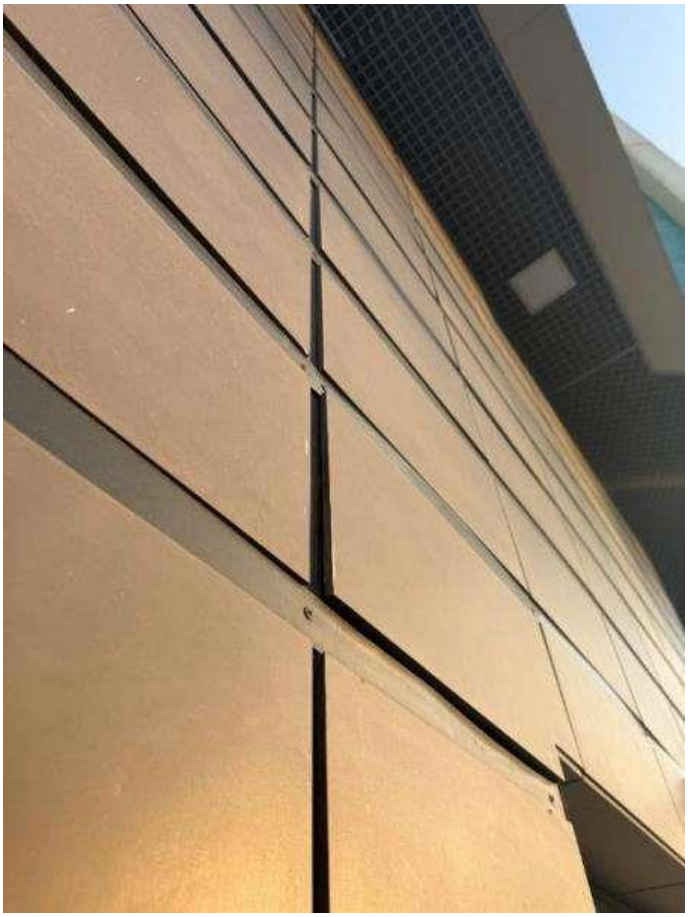


Figure 5.2.7. Detachment of panels from frame studs. In this section, the slats are additionally fastened to the stud with self-tapping screws

Figure 5.2.8. Detachment of slats and panels from frame posts. Enlarged joints between slabs

Figure 5.2.9. Delamination of slats and panels from frame posts

Figure 5.2.10. Delamination of lamellas and panels from frame posts

Figure 5.2.11. Delamination of battens and panels from frame studs with sealant. Cracks and destruction of hanging panels

Figure 5.2.12. Destruction of the seam in the inscription "TBILISI MALL". Corrosion of the facade system frame

Figure 5.2.13. Destruction of the stitching in the inscription "TBILISI MALL" in axes 4-5/A. Corrosion of the facade system frame

Figure 5.2.14. Destruction of the fastening in the "TBILISI MALL" sign in axes 4-5/A. Corrosion of the facade system frame

Figure 5.2.15. Broken stained glass window in axes 3/A

Figure 5.2.16. Mechanical damage (dents) on aluminum panels in axes 2-3/A'

Figure 5.2.17. Corrosion of the frame of the suspended aluminum facade panels

Figure 5.2.18. Insulation structure of this part of the facade

Figure 5.2.19. Seams of the facade with aluminum panels

Figure 5.2.20. Delamination of battens and panels from the frame uprights. Cracks in the panels

Figure 5.2.21. Corrosion of the frame of the suspended aluminum facade panels

Figure 5.2.22. Facade construction made of suspended aluminum panels

Figure 5.2.23. Insulation structure of this part of the facade

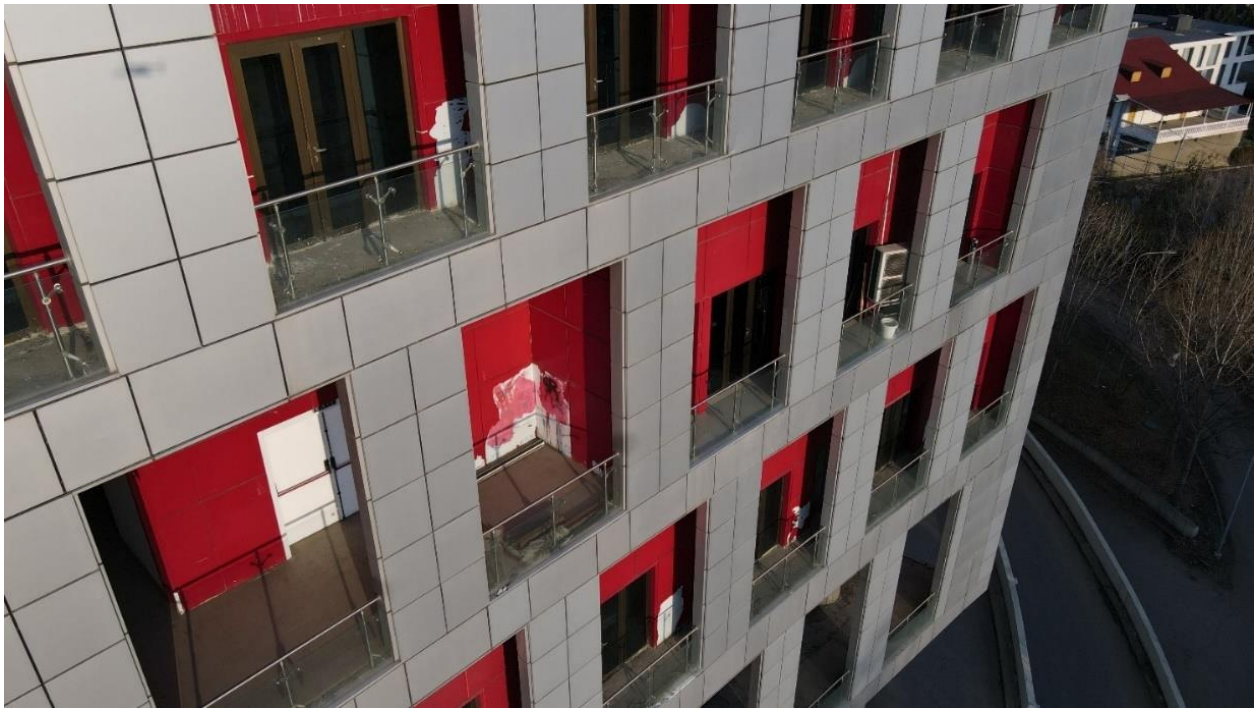


Figure 5.2.24. Facade made of suspended aluminum panels. Local areas with remnants of installation and transport film

Figure 5.2.25. Absence of aluminum panels on the facade

Figure 5.2.26. Ventilation grilles on the curtain wall in axes 1-3/A-C


Figure 5.2.27. The ventilation grilles are currently not functional. These grilles are subject to leaks from precipitation (indirect defects). The inside is sealed with steel sheets and polyurethane sealant.


Figure 5.2.28. The ventilation grilles are currently not functional. These grilles are subject to leaks from precipitation (indirect defects). The inside is sealed with steel sheets and polyurethane sealant

6. CONCLUSIONS.

6.1. Based on the analysis of the results of the inspection of the facade of the Tbilisi Mall shopping center, in accordance with the agreement dated December 2, 2025.

6.1.1. In accordance with the requirements of GOST 31937-2024 and SP 13-102-2003:

The technical condition category of the facade structures of the light insulation system in axes 1-6/A-B and **1-6/B-III is limited operational** technical condition.

Technical condition category of the ventilation facade hanging system structures at elevation 0.000...6.000 in axes 1-6/A-B with porcelain stoneware panels - **III Limited operational** technical condition.

Technical condition category of the suspended ventilation facade system structures at elevation 0.000...23.800 in axes 1-3/A-B with aluminum panels - **II - operational (satisfactory) condition**.

6.1.2. In accordance with the identified defects, it is recommended to fence off two sections due to cracks and delamination of the insulation structure from the wall; the diagram is shown in Figures 7.2-7.4.

6.1.3. The numerous defects identified are the result of a violation of production technology during the construction of this facade. Due to the lack of project documentation, it is impossible to assess the compliance of the work performed with the project.

6.1.4. Installation defects include:

- Failure to fill gaps wider than 2 mm between insulation boards. **This defect leads to the formation of cold bridges, local overcooling of the building envelope, and uneven distribution of thermal deformations in the facade system.**

- Insufficient number of disc dowels for fastening expanded polystyrene insulation boards**. This defect reduces the resistance of the thermal insulation layer to tensile loads and is one of the causes of insulation detachment and stress cracks in the finishing layer.**

- Absence of reinforced facade glass mesh in the construction of the finishing layer of the pilasters**. This defect leads to a decrease in the crack resistance of the finishing layer, especially in areas of stress concentration and under the influence of increased wind loads.**

- Poor quality bonding of expanded polystyrene insulation boards (insufficient bonding area, work performed on an uneven base exceeding permissible deviations). **This defect leads to the formation of voids behind the insulation, reduced adhesion, and subsequent detachment of the thermal insulation layer from the base.**

- Absence of a support (starting) profile for the facade system (not provided for in the design documentation or violation of installation technology). This defect causes displacement of the bottom row of insulation boards, violation of the geometry of the facade system, and an increase in deformation loads on the adhesive and mechanical fastenings.

- Absence or insufficient tightening of nuts securing steel pillar frames to load-bearing

walls (violation of metal structure installation requirements, lack of quality control of installation joints). **This defect reduces the spatial rigidity of the frame and may lead to additional deformation of facade elements.**

- Installation of the finishing layer of the facade pilasters with fastening exclusively with adhesive to the metal frame, without the use of mechanical fastening (partial destruction of the finishing layer has been recorded in some areas**). This defect leads to a reduction in the reliability of the finishing layer fastening, the development of detachments and cracking, as well as accelerated destruction of the finish under the influence of wind and temperature loads.**

Damage caused during operation includes:

- Destruction (peeling) of the protective and decorative layer of the facade thermal insulation system (exposure to atmospheric factors, freeze-thaw cycles, moisture due to damage to the integrity of the finishing layer). **This defect is accompanied by a loss of the protective properties of the coating and accelerated wear of the underlying layers of the facade system.**

- Destruction of the finishing layer of the facade pilasters, mainly on the north side of the building (exposure to increased wind loads, moisture, lack of reinforcement of the finishing layer). **These factors lead to the development of fatigue deformations and local destruction of the protective coating.**

- Surface corrosion of the metal frame of the pilasters (partial destruction of the protective and finishing coating of the metal, exposure to atmospheric moisture and aggressive environmental factors). **Corrosion processes lead to a gradual reduction in the cross-section of the frame elements and a decrease in their load-bearing capacity.**

- Detachment of the thermal insulation layer from the base with the formation of stress cracks in the finishing layer (combined effect of operational loads in the presence of installation defects, including insufficient mechanical fastening and unevenness of the bonding base). **This defect is progressive in nature and requires timely elimination.**

- Defect in the form of delamination of slats and panels from the frame posts of the curtain wall system. This is due to **physical wear of the adhesive composition and a decrease in its adhesive properties during operation, which leads to a weakening of the fastening of the facing elements.**

- Destruction of the cladding in the area of the decorative inscription "TBILISI MALL". The damage is operational in nature and is caused by atmospheric factors, wind loads, and mechanical impact on the structure.

- Mechanical damage (dents) to aluminum panels. **The damage is localized and, as a rule, is associated with external mechanical influences during operation**.

- Broken stained glass in axes 3/A. The defect is operational in nature and is not related to the load-bearing capacity of the facade structures.

6.2. Further safe operation of the facade structure during restoration repairs, design

loads, and periodic condition monitoring, strict compliance with all operational requirements, and direct functional use is permitted after the recommendations reflected in Chapter 7 of this conclusion have been implemented.

6.3. This conclusion is issued as a separate volume, is of a recommendatory nature, and is not included in the design documentation.

7. RECOMMENDATIONS:

7.1. Due to the identified defects in the facade of the lightweight insulation system, in axes 1-6/A-B, it is necessary to carry out a number of measures (the location of the defects is presented in Appendix B):

7.1.1. In areas of destruction (peeling) of the finishing layer of wall insulation, repair local sections of the finishing layer in a volume of 120 m2.

The work will involve removing peeling areas, restoring the base reinforced layer using a facade glass mesh, and then applying a leveling and decorative protective coating compatible with the existing facade system.

Repair of cracks in a lightweight thermal insulation system with a volume of 270 l.m.

If the Customer decides to carry out a major overhaul of the facade, these local works do not need to be carried out in local sections, but in full across 12,270 m2.

7.1.2. When performing major repairs (in the case of local repairs, these works are performed only in accessible areas without dismantling the facade). In areas where gaps wider than 2 mm between insulation elements are not filled, restore the integrity of the thermal insulation layer.

Fill the gaps between the polystyrene foam boards with polyurethane foam or similar insulating material, then trim them flush. Before beginning work, clean the surface of any dirt or loose debris. The scope of this work should be determined during production.

7.1.3. Due to the unsatisfactory condition of the finishing and steel frames of the vertical and horizontal pilasters of the facade in axes 1-6/A-B.

Recommended:

1. Complete dismantling of the finishing layer, dismantling in full ~1702 m2.
2. Next, carry out mechanical cleaning of the steel frame to a degree not lower than class St3, treatment with anti-corrosion primers and application of a protective finishing coating that ensures the required corrosion resistance under operating conditions, these works in a volume of ~1124 m2.
3. When planning renovations, pay particular attention to the adequacy of the fastening points of the steel pilaster frames to the building walls, ensuring they support the loads. No instability or deformations were detected in the frame structure during the inspection. If necessary, add mounting points to the existing frames. The estimated number of frames is 1,330; it is recommended to add two mounting points per frame, or 2,660.
4. During work, inspect all assembly components for their condition, presence, and tightness. If necessary, adjust these components to comply with design documentation.
5. Complete the final coating of these pilasters (~1702 m2). The final coating option will be adopted in accordance with the developed renovation design documentation.
6. During the work, damaged wires were discovered. These utility lines will be inspected during the repair work. This defect was caused by the deterioration of the facade pilaster finish.


Figure 7.1. Areas of wire separation in the facade pilasters

7.1.4. When making decisions on major repairs by the Client, the General Designer shall consider the need to install the starting profile in accordance with the adopted facade system to ensure the geometric stability of the lower and subsequent rows of insulation and to improve the operational reliability of the facade. The scope of this work is 681 linear meters. The final decision will be made based on the design documentation.

7.1.5. Based on the results of the autopsy and exposed sections of the facade, a defect was identified in the form of an insufficient number of plate dowels for fastening the polystyrene foam insulation boards (in fact, only two dowels were installed per board). Develop design measures to strengthen the mechanical fastening of the facade thermal insulation system.

Recommended (in case of local repair):

- Mark facade sections for additional fastening with dowels. Perform localized openings of the protective-decorative and base reinforced layers. Additional fastening is to be performed using facade plate dowels, bringing their number up to standard values, taking into account wind loads, building height, and the location of facade zones. After installing the dowels, restore the base reinforced layer and protective-decorative coating of the facade . This work must be combined with the repair of the facade elements. The average number of plate dowels is 7 pcs/m²; according to this calculation, an additional 11,408 dowels are required for the entire lightweight insulation system of the building.

7.1.6. In places of defect in the form of separation of the insulating layer from the wall and the formation of stress cracks, in axes A–B/1 and 5–6/A (see Fig. 7.2.–7.4.). It is recommended to fence off these areas before starting repair work.

Dismantle defective sections of the facade system. Before restoration, level the base, bringing any deviations to acceptable levels according to regulatory requirements (no more than 10 mm). Strength characteristics must also comply with regulatory requirements.

The restoration will be completed using adhesive and mechanical fastening of the insulation, the installation of a reinforced base layer, and subsequent application of a protective and decorative coating. This work will be performed on a 130 m² area.

Figure 7.2. Recommended areas for fencing. Insulation boards are torn away from the surface.

Figure 7.3 Recommended area for fencing in axes 5-6/A. Separation of insulation boards from the surface

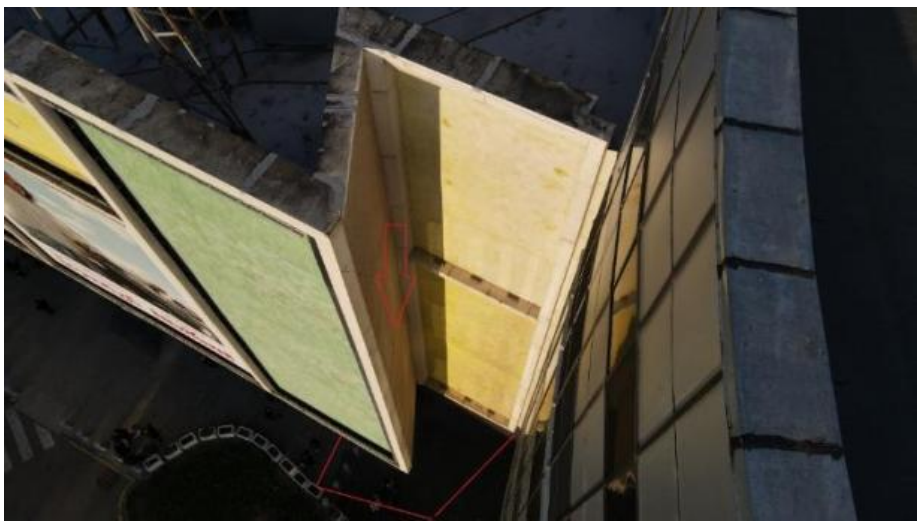


Figure 7.4. Recommended area for fencing in axes A–B/1. Separation of insulation boards from the surface

7.2. Due to the identified defects in the curtain wall system, in axes 1-6/A-B, it is necessary to carry out a number of measures (the location of the defects is presented in Appendix B):

7.2.1. Strengthen the mechanical fastening of the thermal insulation layer. During the

renovation of the curtain wall, in axes 1-6/A and at elevations 0.000…+6.000, install additional fastenings using disc-shaped facade dowels with spacers ensuring standard anchorage in the supporting base, bringing their number up to the requirements of current codes and design solutions. The work and scope are described in Section 7.1.5.

7.2.2. In areas where gaps wider than 2 mm between insulation elements are not filled, restore the integrity of the thermal insulation layer. Fill the gaps between the polystyrene foam boards with foam or similar insulating material, then trim them flush. Before starting work, clean the surface of any dirt or loose fragments. The scope of this work can only be assessed during dismantling and repair work.

7.2.3. Re-installation of the slats and panels of the curtain wall system. Before restoration, clean the contact surfaces and remove any remaining degraded adhesive. Fasten the cladding elements using the mechanical fastening specified in the design and system and (if necessary) an auxiliary adhesive bond. Perform the work in compliance with the curtain wall system manufacturer's requirements. The area of the curtain wall system with porcelain stoneware slabs is 2121 m2.

7.2.4. During the facade repair, inspect the fasteners. Install missing fasteners, tighten nuts with controlled torque, and, if necessary, replace damaged fasteners. After completing the work, ensure anti-corrosion protection of the repaired components. The scope of this work can only be assessed during dismantling and repair work.

7.2.5. Restore the cladding in the area of the "TBILISI MALL" sign in axes 4-5/A using new cladding elements with fasteners (actual material: aluminum composite) corresponding to the adopted curtain wall system, taking into account wind loads and operational impacts. The scope of this work is ~60 m2.

7.2.6. Perform mechanical cleaning of the steel frame under the suspended porcelain stoneware panels and aluminum panels to a degree not lower than class St3, treatment with anti-corrosion primers and application of a protective finishing coating that ensures the required corrosion resistance under operating conditions. These works shall be carried out in the following volume:

~2048 m2 of frame for facade with aluminum panels;

~310 m2 of frame for a facade with porcelain stoneware panels.

7.2.7. In areas of mechanical damage (dents) and missing aluminum panels in axes 2–3/A', replace or restore damaged cladding elements depending on the extent of damage and the requirements for the architectural appearance of the facade in a volume of 24 m2.

7.2.8. Due to the lack of a waterproofing and vapor barrier membrane (a rolled bitumen material is used), this material is not suitable for this type of work, as well as surface corrosion of the steel frame and localized areas of destruction (degradation) of the sealed joint. Consider dismantling the curtain wall system with aluminum panels, restoring the anti-corrosion properties of the steel frame (2,048 m2), installing a waterproofing and vapor barrier membrane (1,953 m2), and reinstalling the aluminum panels (1,953 m2).

7.2.9. Due to leaks and lack of use of ventilation grilles on the facade, they must be

replaced in an area of 145 m2.

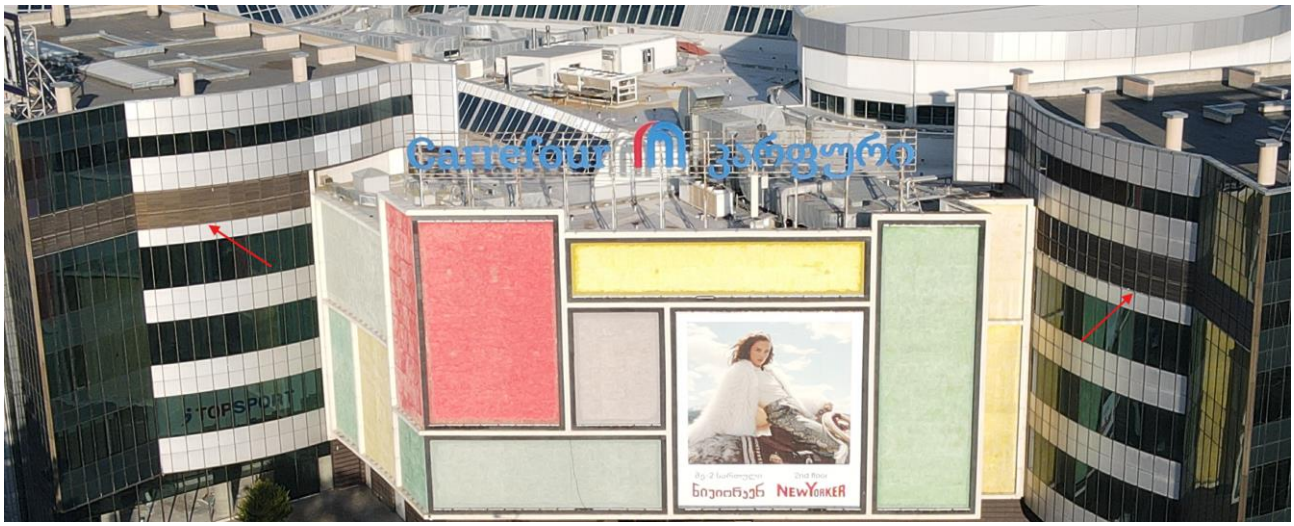


Figure 7.4. Ventilation grilles on the building facade

7.2.10. In the place of broken glazing of the stained-glass window in axes 3/A, dismantle the damaged glass unit and install new glazing that meets the strength and safety requirements.

7.3. These recommendations do not constitute working documentation. To implement the above measures, it is necessary to develop design and estimate documentation (construction project) in accordance with the requirements of current standards and regulations.

All technical solutions for restoring operational suitability are advisory in nature and may be replaced by the developers of design documentation at the discretion of the designer or based on the capabilities of the construction and installation organization performing repair work on the given facility.

8.Bill of Quantities

№	Name of work	Unit	Quantity	Note / calculation	Indication in section 7. Recommendations	Location of defects (indicated in Appendix B)
1	Local dismantling of the destroyed protective and decorative layer of EIFS	m²	120	Areas of flaking and peeling. During local repair	item 7.1.1.	1-6/A-C
2	Cleaning the base from loosely held fragments	m²	120	Before restoration		
3	Restoration of the base reinforced layer with facade fiberglass mesh	m²	120	Compatible with the existing system		
4	Application of leveling layer	m²	120			
5	Applying a protective and decorative coating to the facade	m²	120			
6	Repair of cracks in the EIFS system	l.m.	270	Local repair	item 7.1.1.	1-6/A-C
7	Filling gaps between insulation boards (>2 mm) with монтажной пеной	m²	in fact	During major repairs / after opening	item 7.1.2.	1-6/A-C
8	Trimming the insulation flush	m²	in fact	Accompanying operation		
9	Dismantling of the finishing layer of facade pilasters	m²	1702	In full	item 7.1.3.	1-6/A-C
10	Mechanical cleaning of the steel frame of pilasters to St3	m²	1124			
11	Anti-corrosion primer for steel frame	m²	1124			
12	Applying a protective and decorative coating to the steel frame	m²	1124			
13	Revision and reinforcement of fastening points of pilaster frames	set	in fact	During the repair. Number of frames ~1330. Additional fastening 2pcs. Per frame		
14	Revision and tightening of mounting nodes	set	in fact	With tightening control		
15	Installation of finishing coating of pilasters	m²	1702	Type according to the project		
16	Revision of damaged utilities in pilasters	set	in fact	During work	item 7.1.3.	1-6/A-C
17	Installation of the starting profile of EIFS	l.m.	681	During major repairs	item 7.1.4.	1-6/A-C
18	Local opening of the protective-decorative layer for additional doweling	m²	included	Combined with repair	item 7.1.5.	1-6/A-C
19	Additional fastening of insulation with plate dowels	pcs	11408	Average 7 pcs/m²		

20	Restoration of the base and protective-decorative layer after doweling	m²	included			
21	Fencing of emergency areas of the facade	set	1	Before starting work	item 7.1.6.	B/1-2 and A/4-5
22	Dismantling of defective sections of EIFS (tile detachment)	m²	130			
23	Base leveling (≤10 mm)	m²	130	Before restoration		
24	Installation of finishing layer of EIFS	m²	12270	During major repairs		
25	Restoration of EIFS with adhesive and mechanical fastening	m²	130	Full cycle		
26	Additional fastening of insulation with plate dowels	pcs	included	Similarly to clause 7.1.5	item 7.2.1.	1-6/A-C
27	Filling gaps between insulation boards	m²	in fact	After dismantling	item 7.2.2.	1-6/A-C
28	Restoration of fastening of lamellas and ventilated facade panels	m²	2121	Granite	7.2.3.	1-6/A-C
29	Cleaning of contact surfaces from old glue	m²	2121	Panel 600x300x10		
30	Revision and replacement of ventilated facade fasteners	set	in fact	With anti-corrosion protection		
31	Restoration of the cladding in the area of the inscription «TBILISI MALL»	m²	60	New elements	7.2.5.	4-5/A
32	Cleaning of the steel frame for aluminum panels to St3	m²	2048		7.2.6.	1-3/A-C
33	Anti-corrosion protection of the frame for aluminum panels	m²	2048			
34	Cleaning of the steel frame for granite to St3	m²	310			1-6/A-C
35	Anti-corrosion protection of the frame for granite	m²	310			
36	Replacement / restoration of damaged aluminum panels	m²	24	Absence/Dents	7.2.7.	2-3/A and 1/B
37	Dismantling of aluminum ventilated facade panels	m²	1953	For complex repairs	7.2.8.	1-3/A-C
38	Installation of hydro-vapor barrier membrane	m²	1953			
39	Reverse installation of aluminum panels	m²	1953			
40	Replacement of facade ventilation grilles	m²	145		7.2.9.	1-3/A-C
41	Dismantling of damaged stained glass window	pcs	1	Axis 3/A	7.2.10.	3/A
42	Installation of a new double-glazed window	pcs	1	According to safety requirements		

REFERENCES

1. **SNiP II-23-81** "Steel Structures"
2. **SNiP 2.02.01-83** "Foundations of Buildings and Structures."
3. **SNiP 3.03.01-87** "Load-bearing and enclosing structures."
4. **SNiP 2.03.01-84** Concrete and reinforced concrete structures. SNiP 52-01-2003 "Concrete and reinforced concrete structures. Basic provisions."
5. **SNiP 2.03.11-85** "Protection of building structures against corrosion."
6. **SP14.13330.2018** "Construction in seismic areas." Updated version of SNiP 11-7 81
7. **SP 522.1325800.2023** "Ventilated facade systems"
8. **SP 293.1325800.2017 "**Composite facade thermal insulation systems with external plaster layers"
9. **SP 12-101-98** "Technical rules for the production of external thermal insulation of buildings with thin plaster for insulation"

REFERENCE MATERIALS

1. SP 1.04.04-2023 "Inspection and reinforcement of steel structures"

2. SP 13-102-2003 "Rules for the inspection of load-bearing building structures and structures"

3. SP 5.03.01-2020 "Concrete and reinforced concrete structures."

4. GOST 31937-2024 "Buildings and structures. Rules for technical inspection and monitoring of technical condition"

5. SNiP 52-01-2003 "Concrete and reinforced concrete structures. Basic provisions."

6. SP 28.13330.2017 "SNiP 2.03.11-85 Protection of building structures from corrosion"

7. Guide to the design and installation of Capatect thermal insulation systems

Appendix B

Schedule of drawings

Sheet	Name	Note
1	Schedule of drawings	A4
2	Facade 6 – 1 (M 1:200), Facade 1 – 6 (M 1:200)	A2x5
3	Facade C – A (M 1:200), Facade A – C (M 1:200)	A3x6
4	Construction detail $\frac{1}{4}$ (M 1:20), Construction detail $\frac{1.1}{4}$ (M 1:10), Section 1 – 1 (M 1:20)	A4
5	Construction detail $\frac{2}{5}$ (M 1:20), Construction detail $\frac{2.1}{5}$ (M 1:20), Section 2 – 2 (M 1:20)	A4
6	Construction detail $\frac{3}{6}$ (M 1:10), Construction detail $\frac{3.1}{6}$ (M 1:20), Section 3 – 3 (M 1:20)	A4
7	Construction detail $\frac{4}{7}$ (M 1:10), Construction detail $\frac{4.1}{7}$ (M 1:10), Section 4 – 4 (M 1:10)	A4
8	Construction detail $\frac{5}{8}$ (M 1:20), Section 5 – 5 (M 1:20)	A4
9	Construction detail $\frac{6}{9}$ (M 1:20), Section 6 – 6 (M 1:20), Section 7 – 7 (M 1:20)	A4
10	Construction detail $\frac{7}{10}$ (M 1:20), Section 8 – 8 (M 1:20), Section 9– 9 (M 1:20)	A4
11	Construction detail $\frac{8}{11}$ (M 1:20), Section 10 – 10 (M1:20), Section 11 – 11 (M1:20), Section 12 – 12 (M1:20)	A3
12	Construction detail $\frac{9}{12}$ (M 1:20), Section 13 – 13 (M1:20), Section 14 – 14 (M1:20), Section 15 – 15 (M1:20)	A3
13	Grid line layout plan	A1x3

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Director		Savchenko			12.2025
Engineer		Shuranov			12.2025

01/12-2025-TR-B

Inspection of the technical condition of the Tbilisi Mall facade

Stage	Sheet	Sheets
	1	13

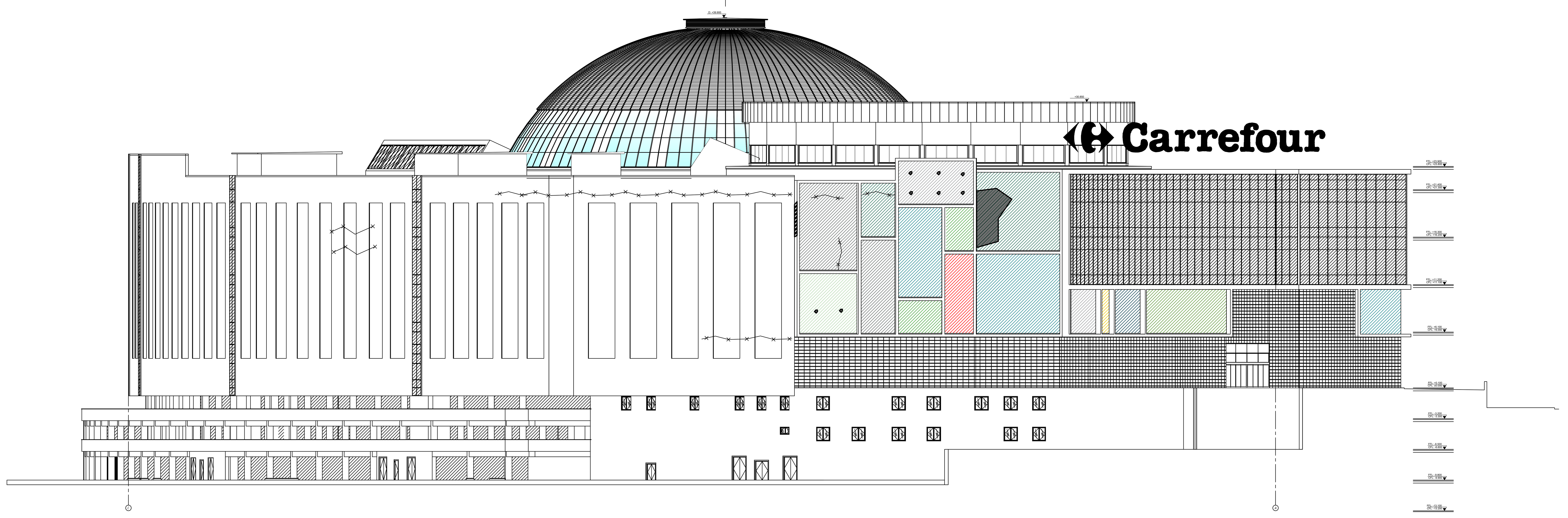
Schedule of drawings

PROBUILD EXPERT

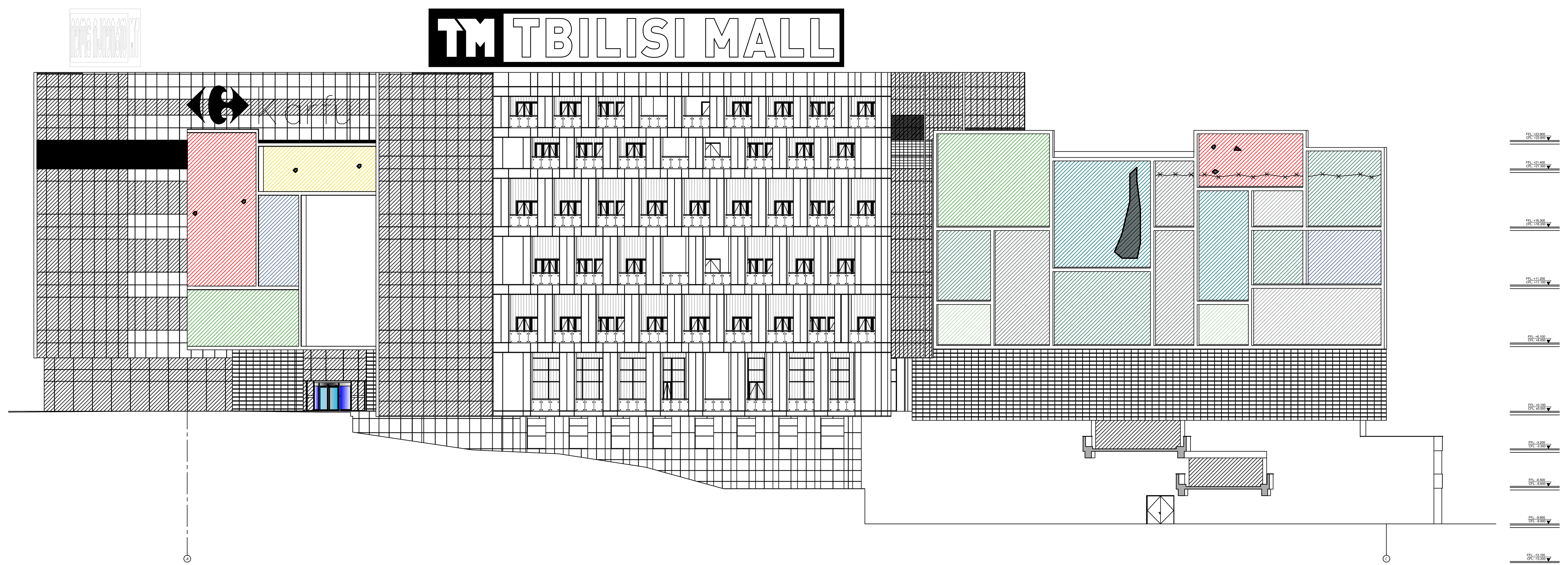
Facade 6 - 1 (M 1:200)

Facade 1 - 6 (M 1:200)

Facade C – A (M 1:200)



Facade A – C (M 1:200)



Defect Marking:

- – damaged / missing ventilated facade elements (30 m2)
- – deterioration of the plaster layer and damage to the polystyrene insulation (25 m2)
- – destruction of the finishing layer (95 m2)
- – damage to the cladding elements of the "TBILISI MALL" sign (60 m2)
- – Due to leaks and lack of use of ventilation grilles on the facade, they must be replaced in an area of 145 m2
- – crack in the finish layer of the facade with a lightweight insulation system (270 l.m.)
- – crack in the building façade with delamination of the insulation

Note: Defects on projecting decorative elements (pilasters) on the façades are not indicated, as cracking and peeling of the paint layer are present over the entire surface of the pilasters.

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						01/12-2025-TR-B	Sheet
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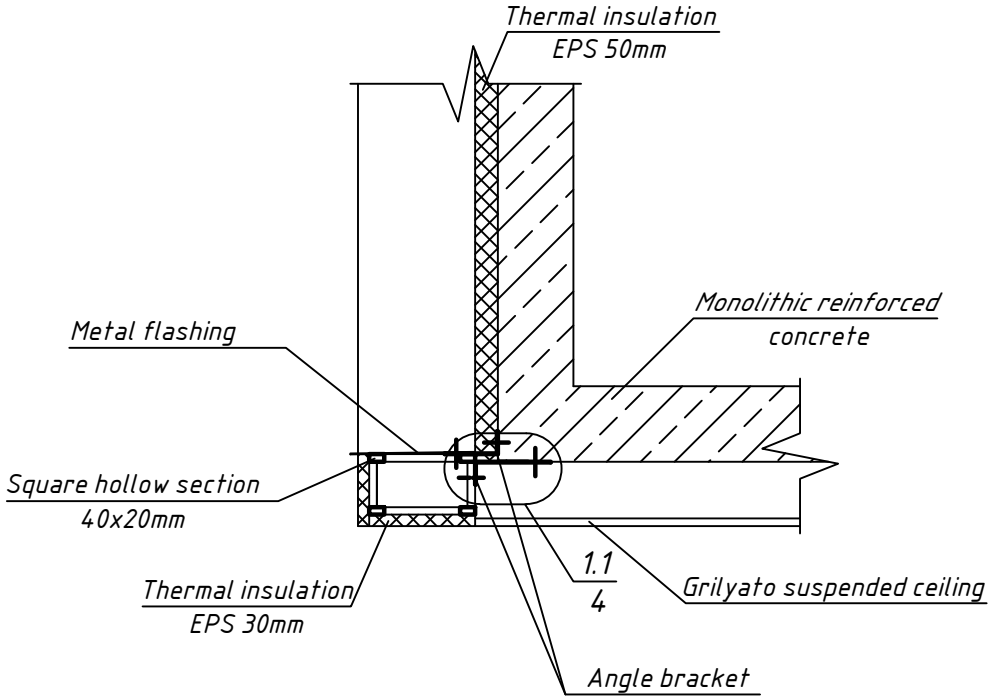
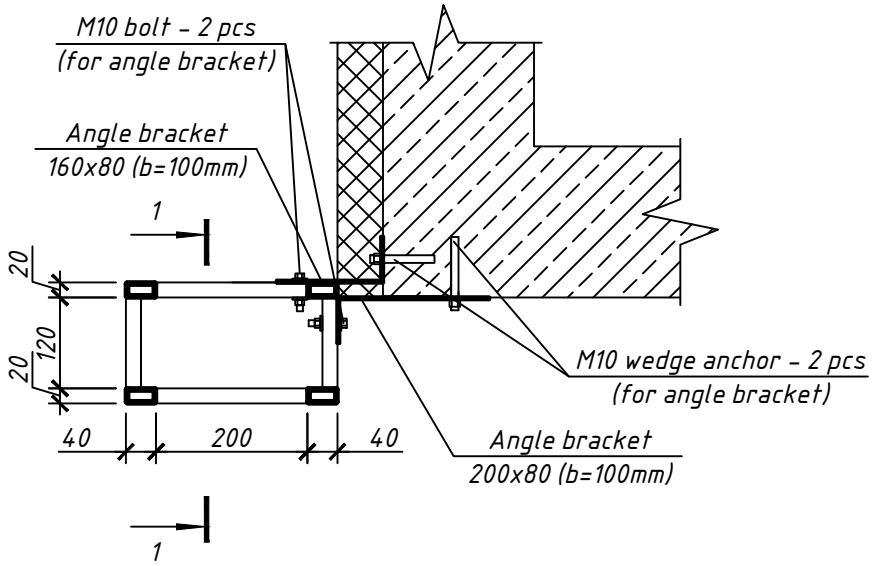
Формат А3х6

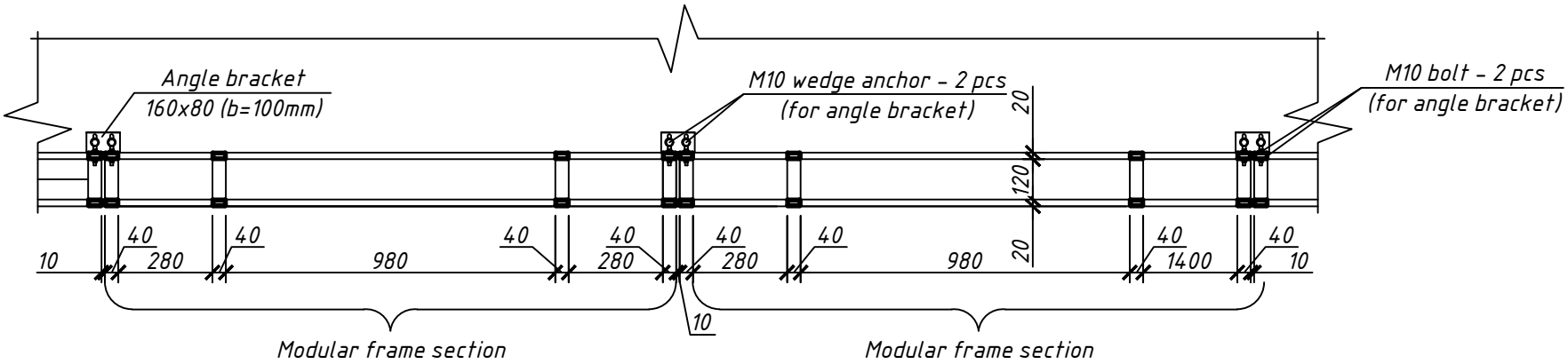
Construction detail 1/4 (M 1:20)



Construction detail 1.1/4 (M 1:10)



Section 1 – 1 (M 1:20)



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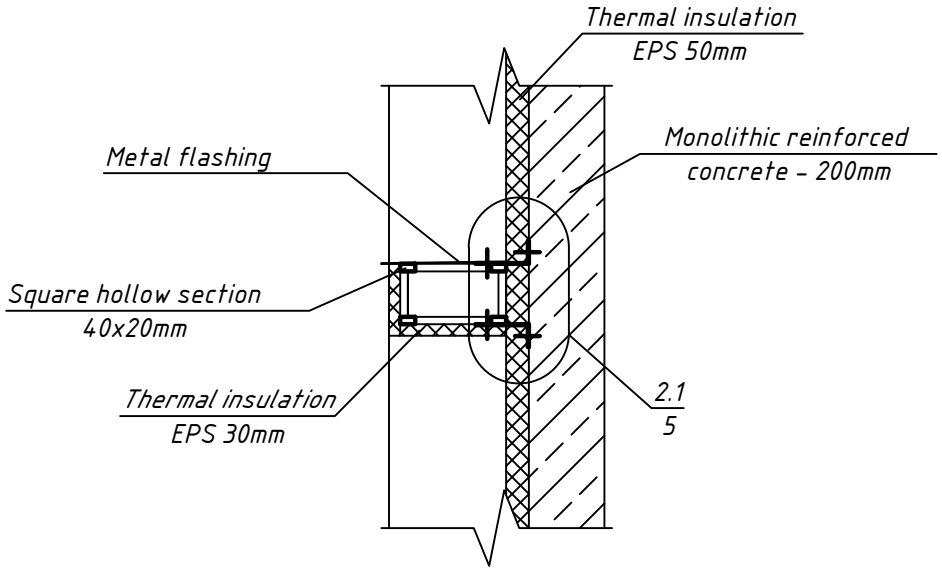
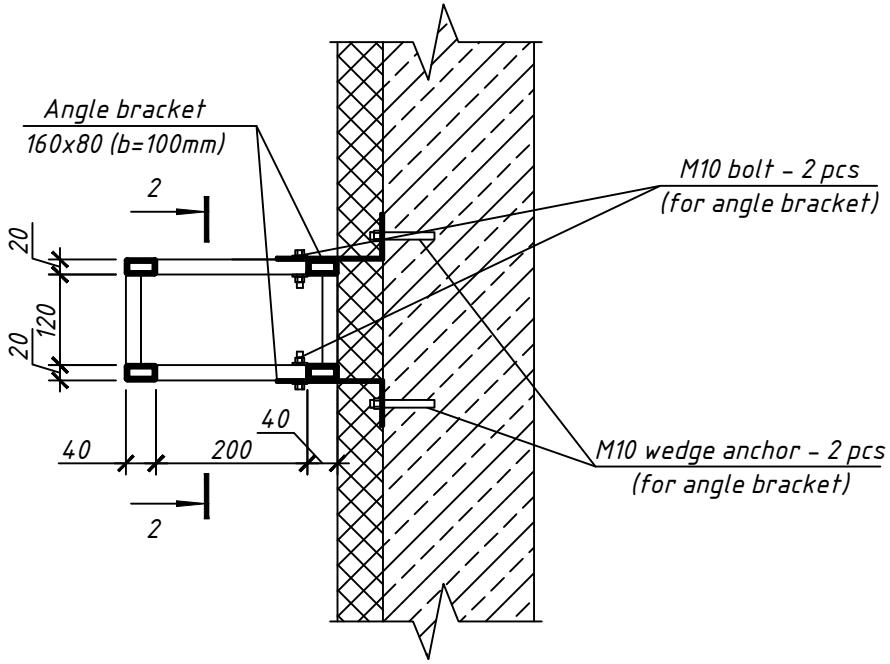
Формат А4

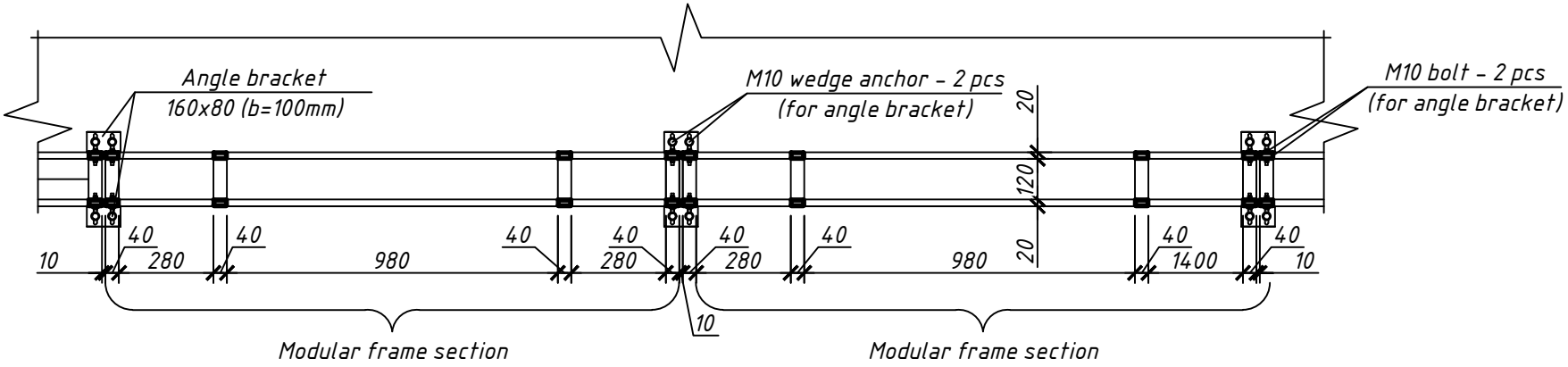
Construction detail $\frac{2}{5}$ (M 1:20)



Construction detail $\frac{2.1}{5}$ (M 1:10)



Section 2 – 2 (M 1:20)



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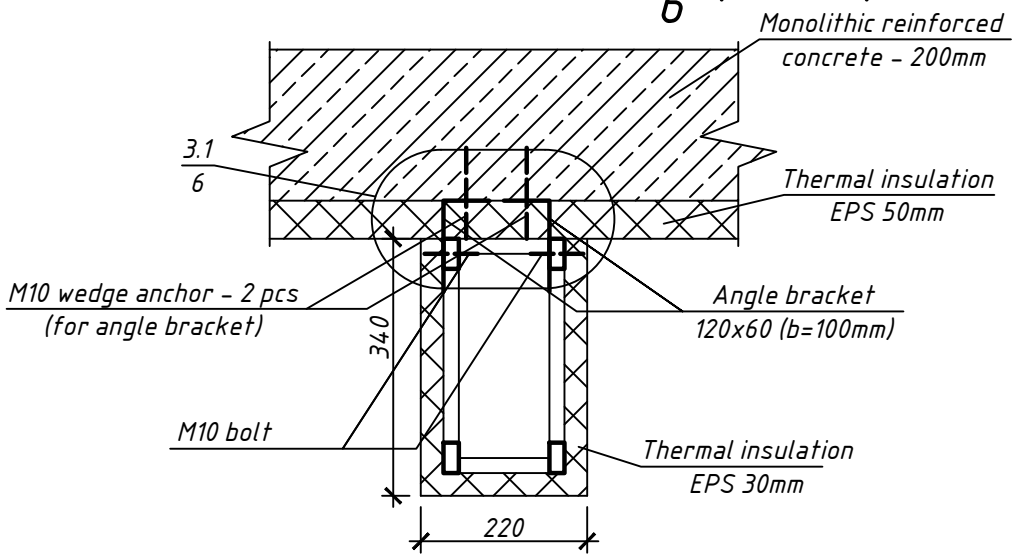
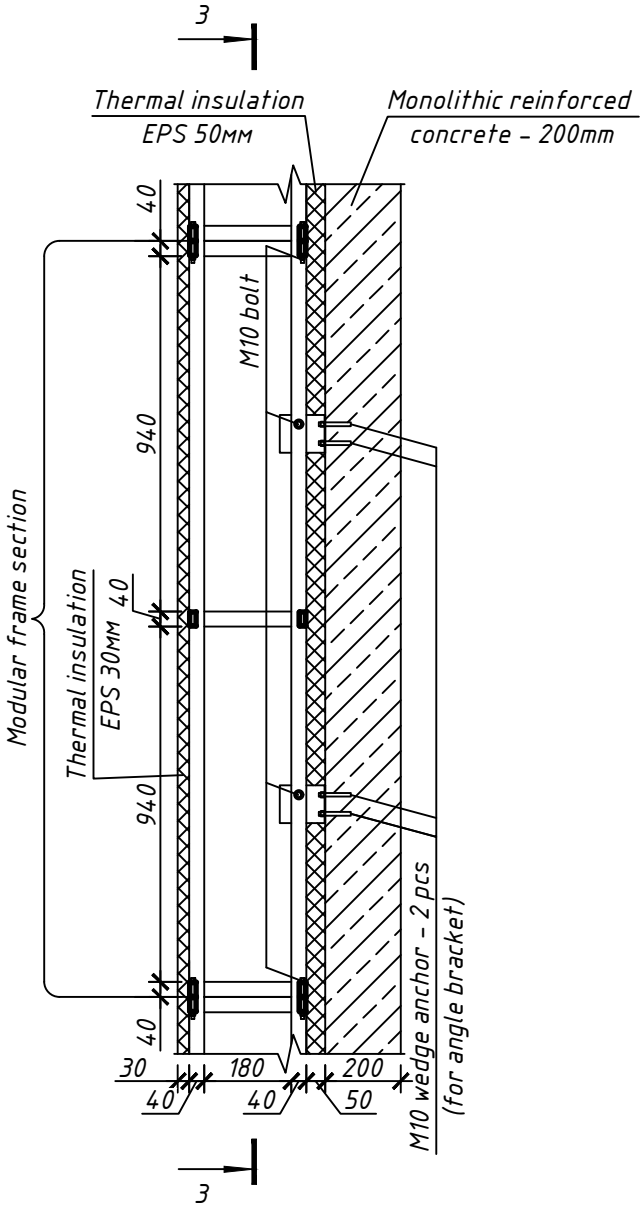
Формат А4

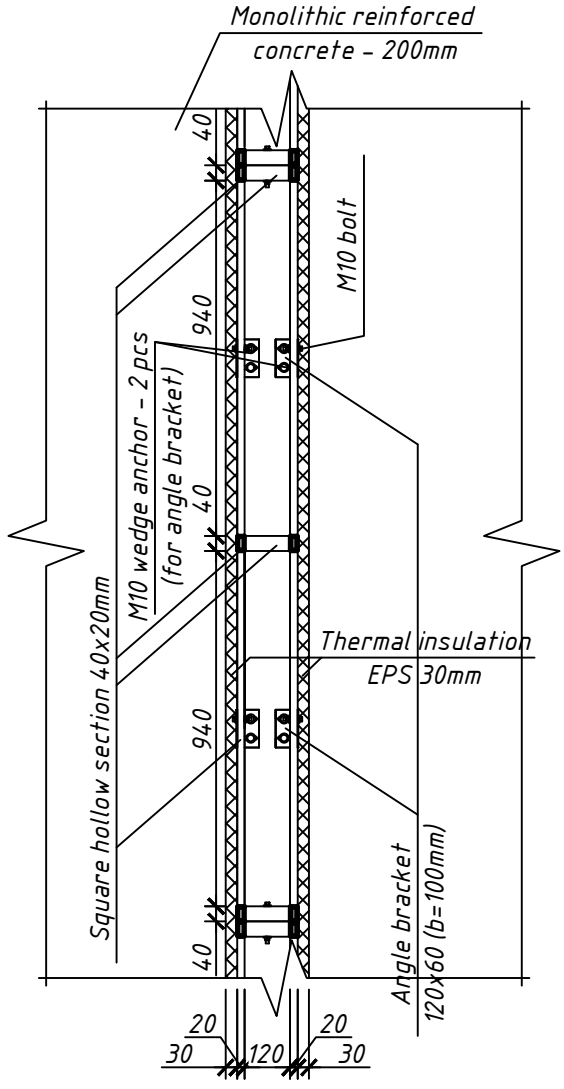
Construction detail 3/6 (M 1:10)



Construction detail (M 1:20)



Section 3 – 3 (M 1:20)



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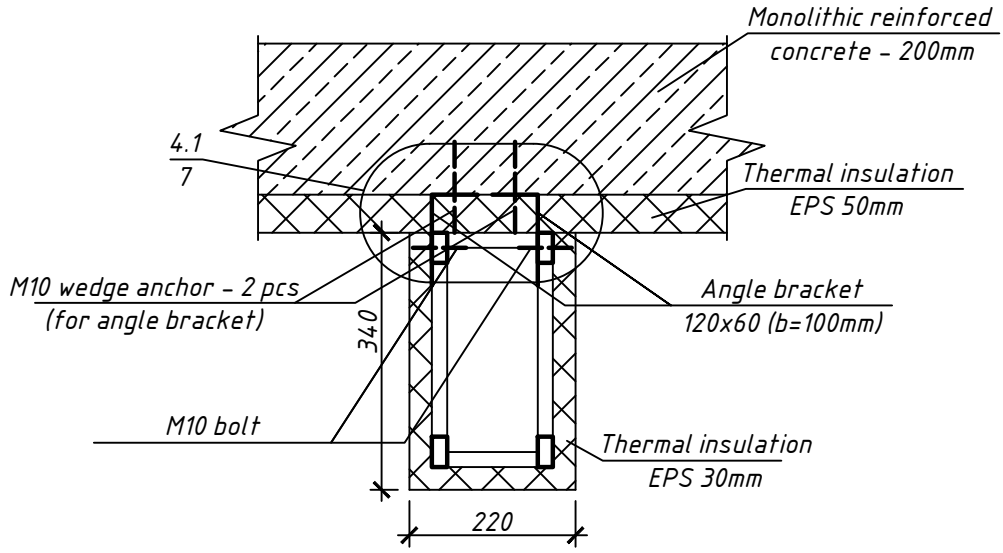
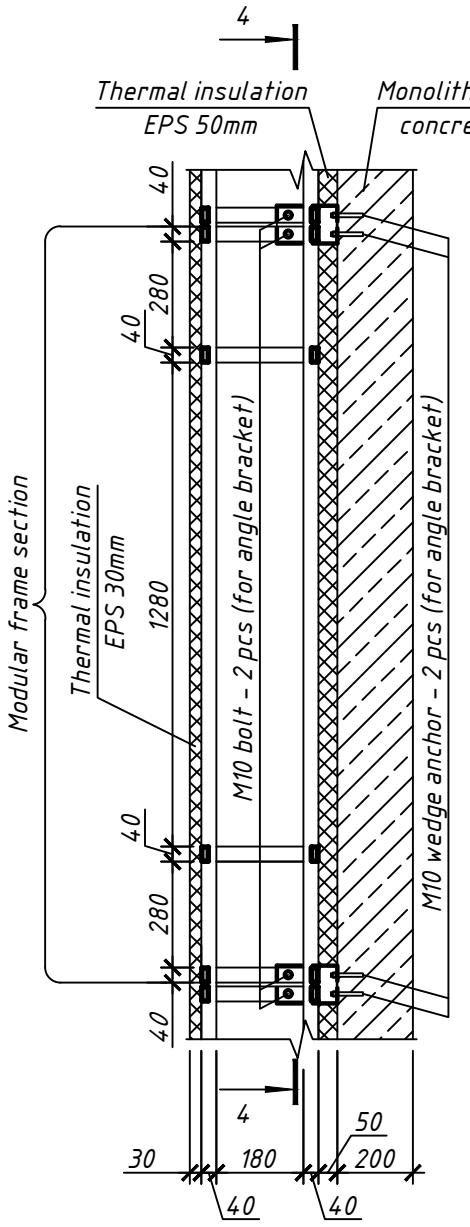
Формат А4

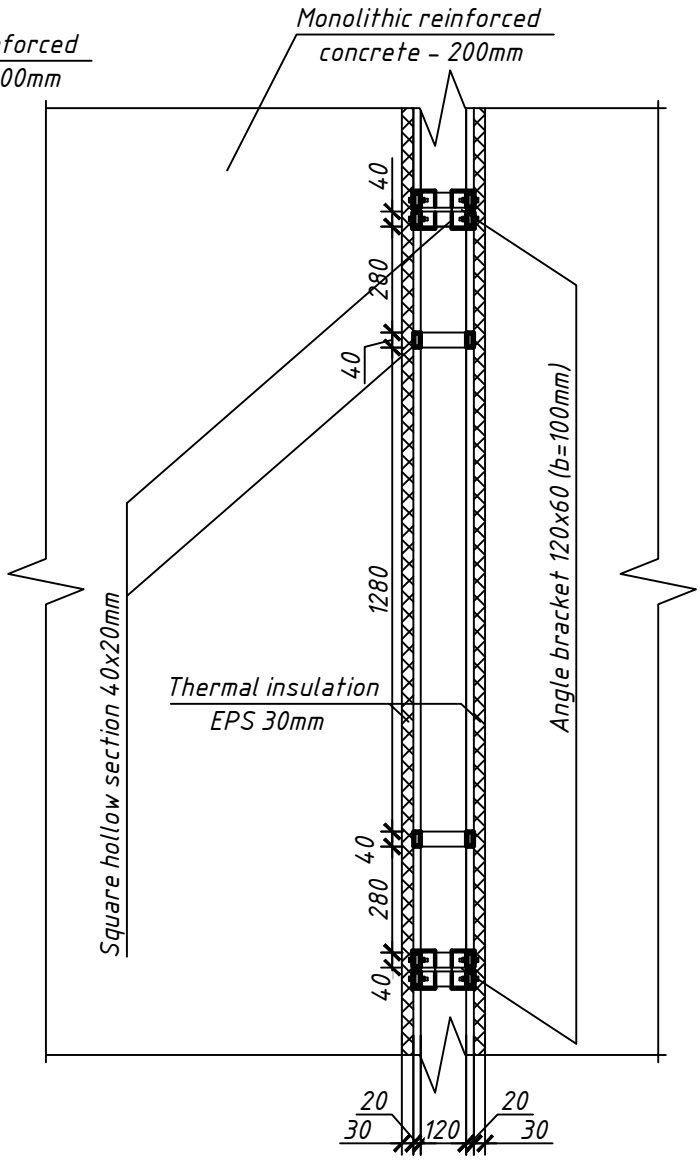
Construction detail (M 1:10)



Construction detail (M 1:10)



Section (M 1:10)



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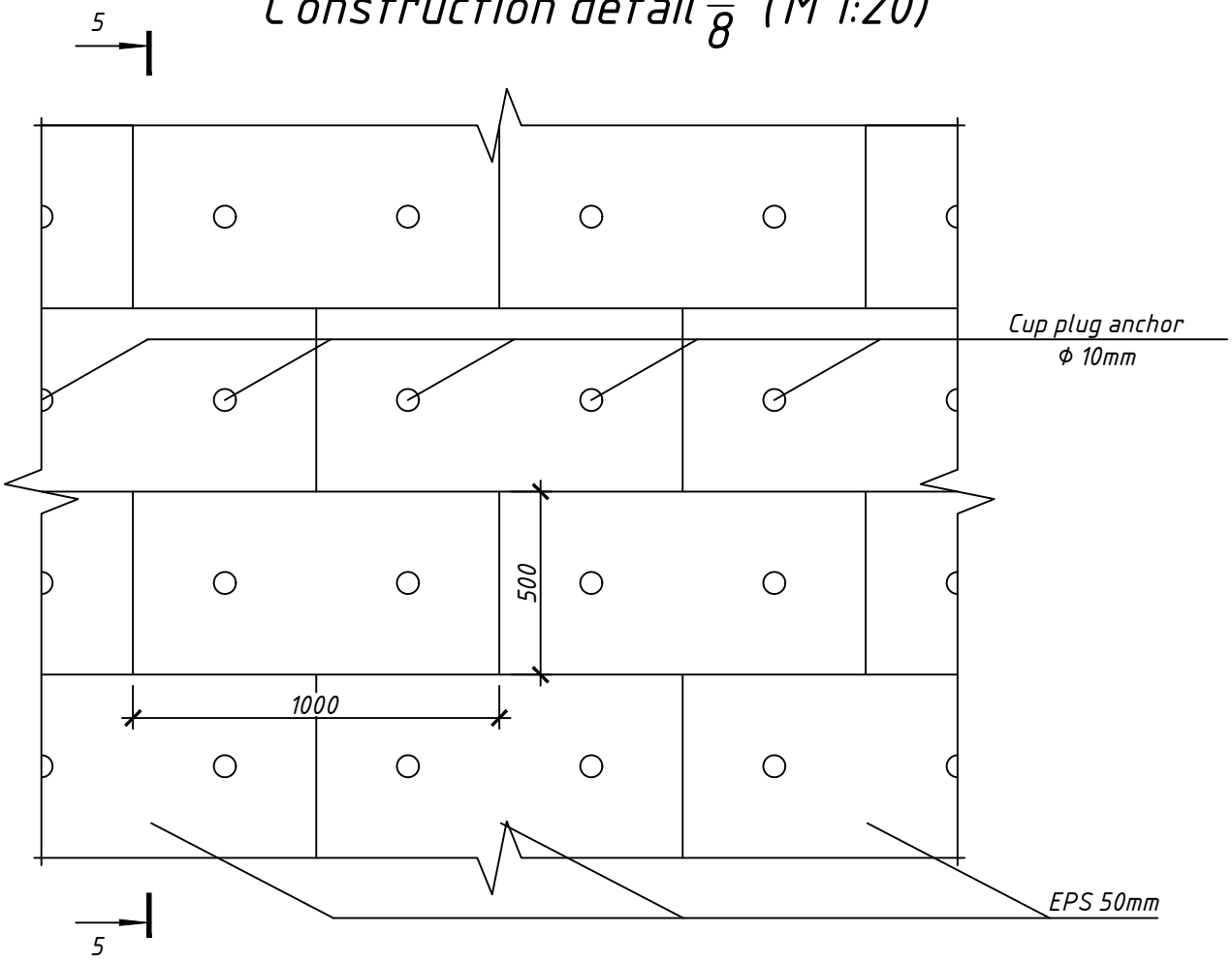
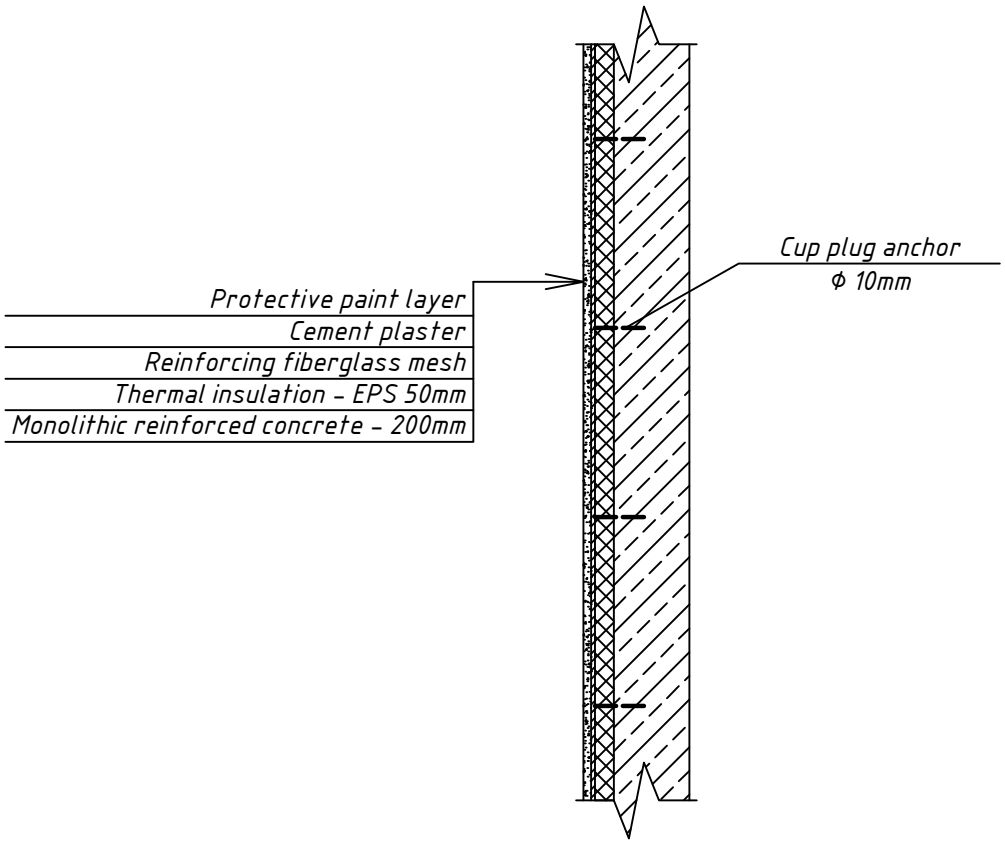
Формат А4

Construction detail $\frac{5}{8}$ (M 1:20)



Section 5 – 5 (M 1:20)



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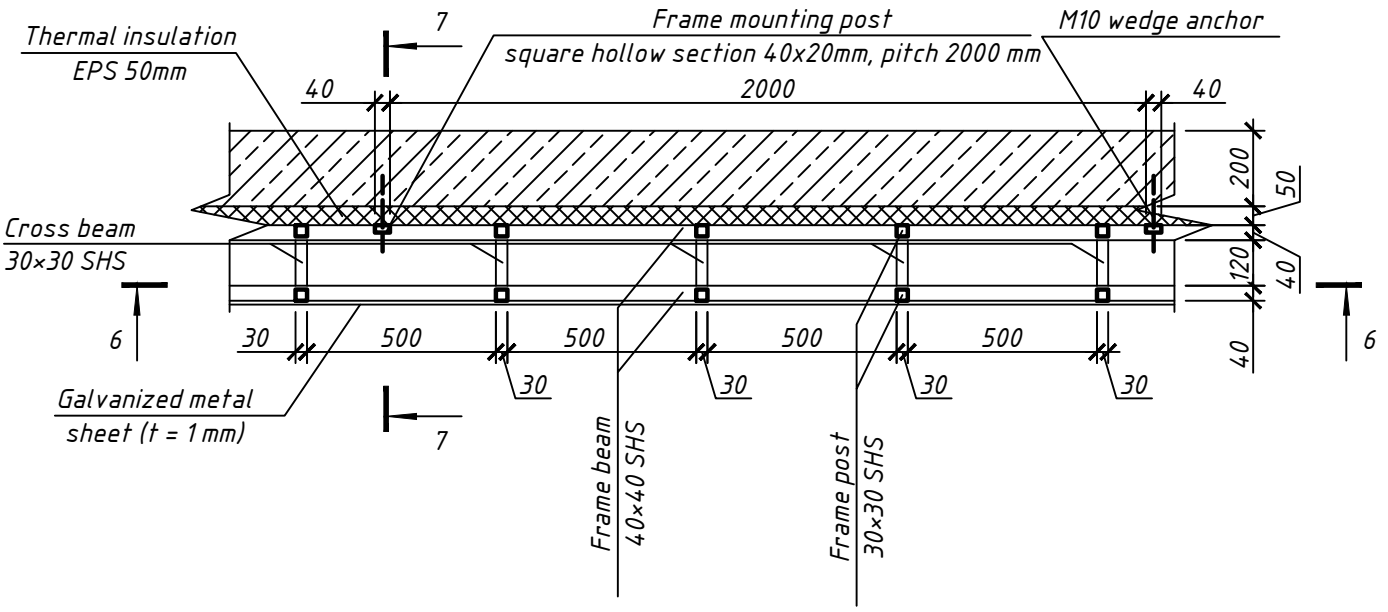
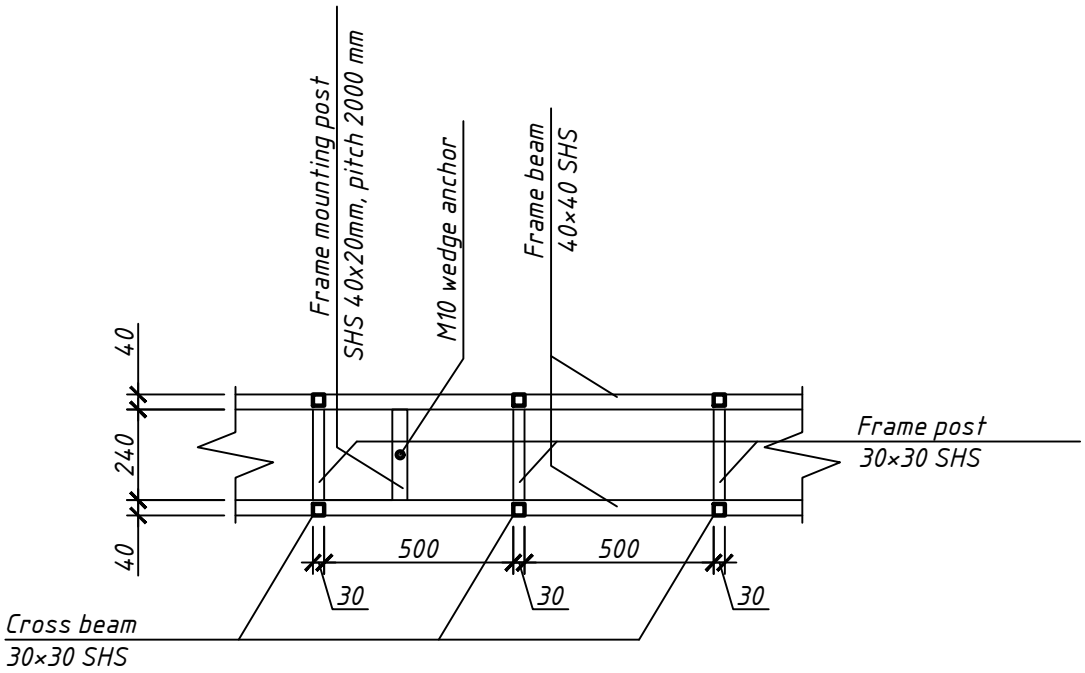
Формат А4

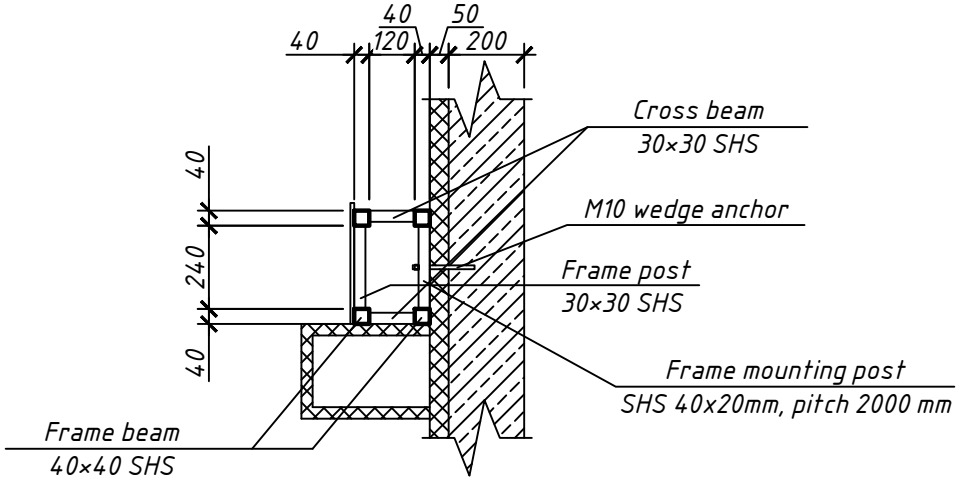
Construction detail (M 1:20)



Section 6 – 6 (M 1:20)



Section 7 – 7 (M 1:20)



Note: SHS – Square hollow section

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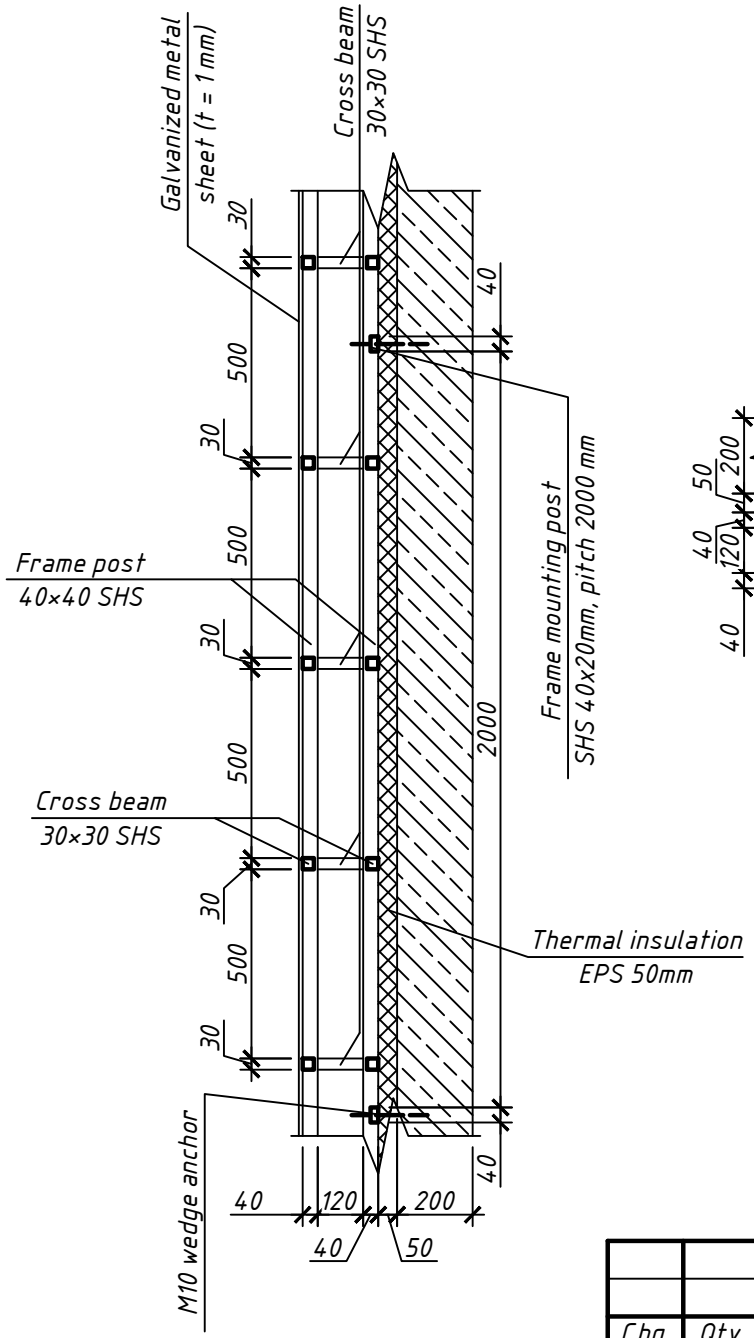
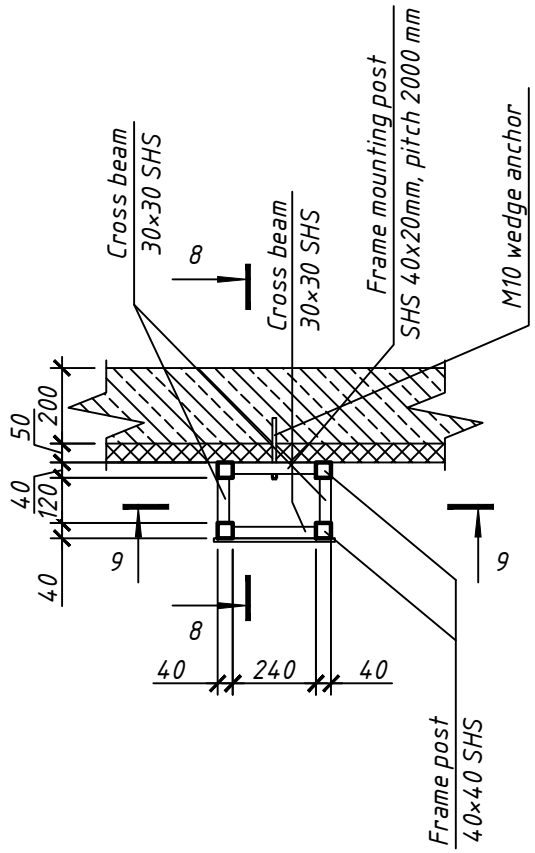
Формат А4

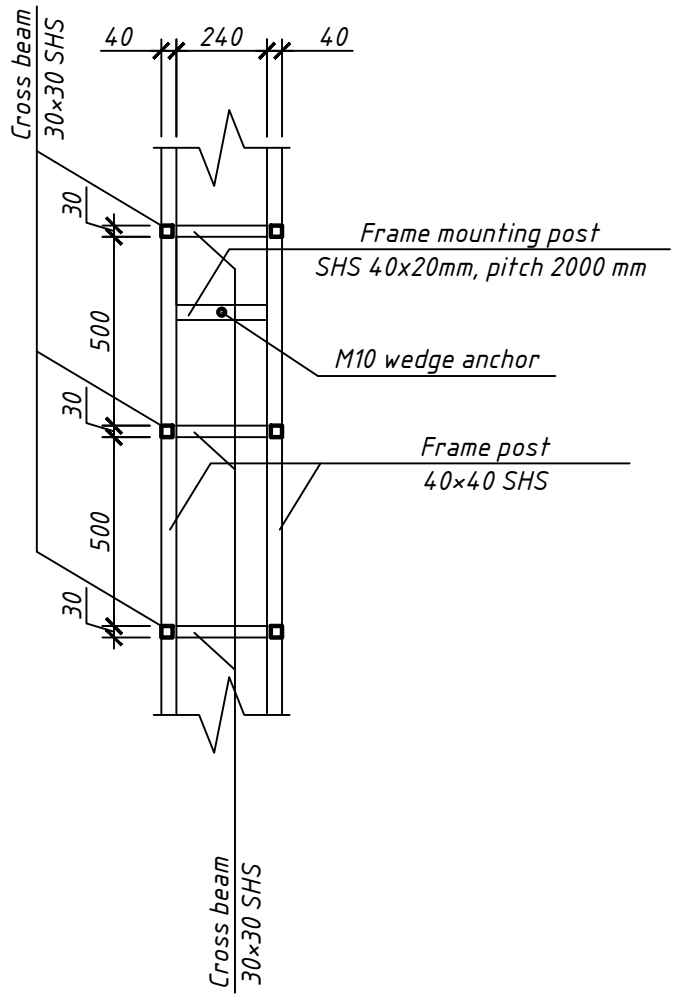
Section 8 – 8 (M 1:20)



Construction detail $\frac{7}{10}$ (M 1:20)



Section 9 – 9 (M 1:20)



Note: SHS – Square hollow section

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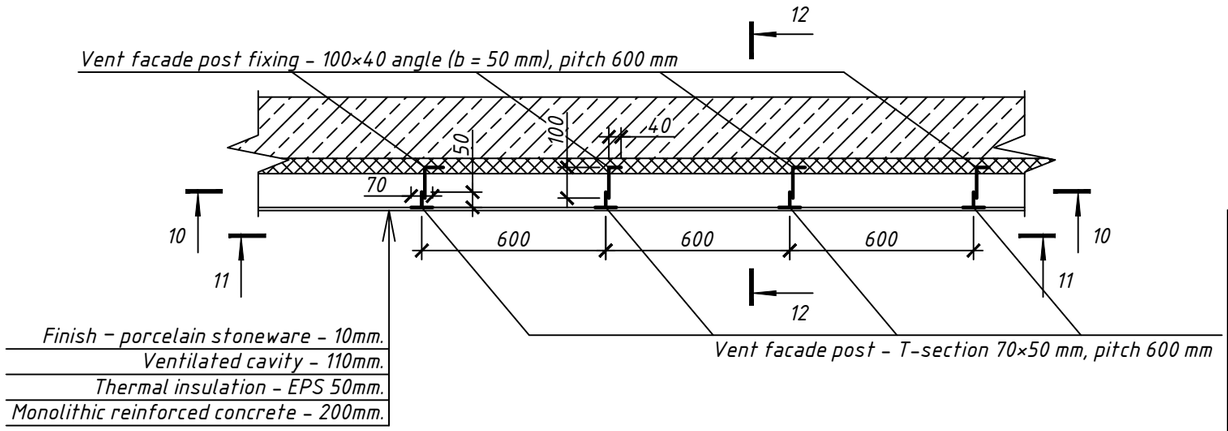
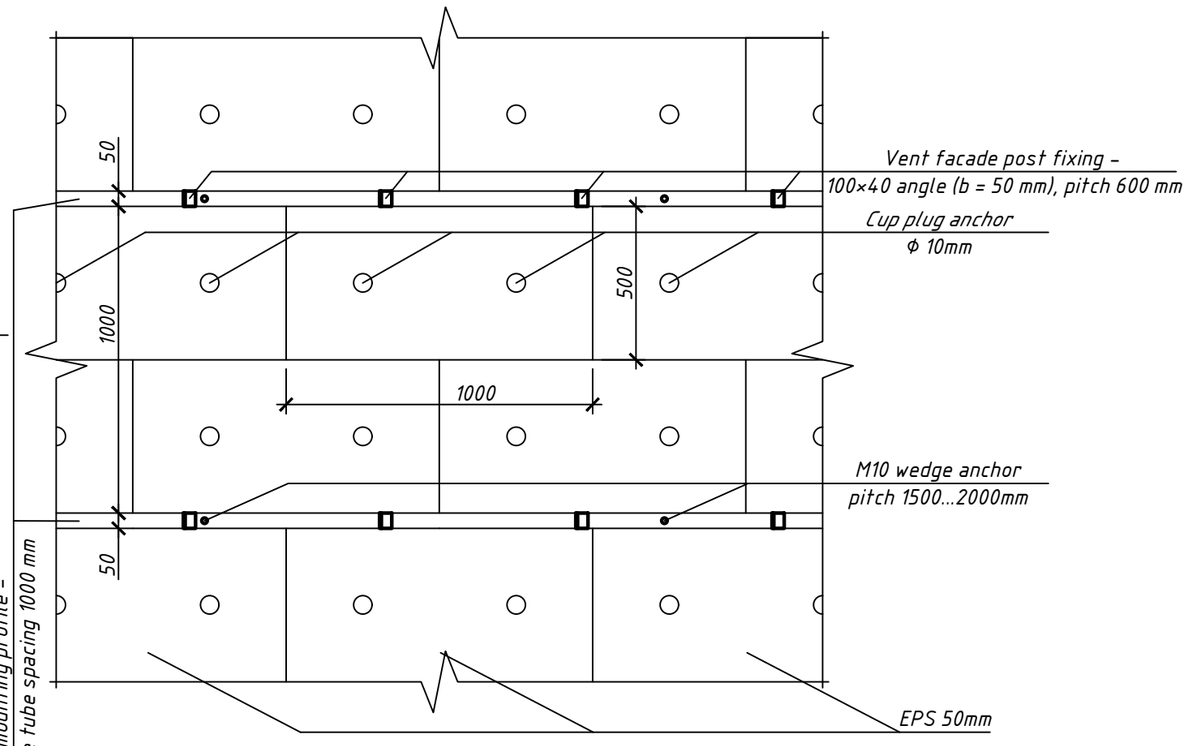
Формат А4

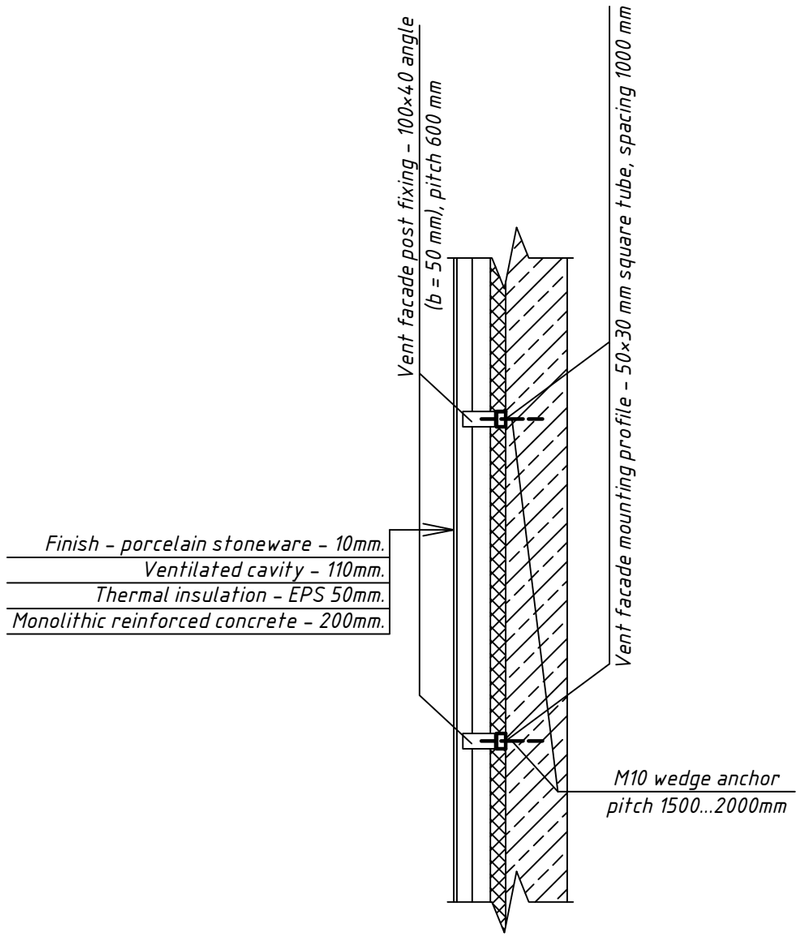
Construction detail 8/11 (M 1:20)



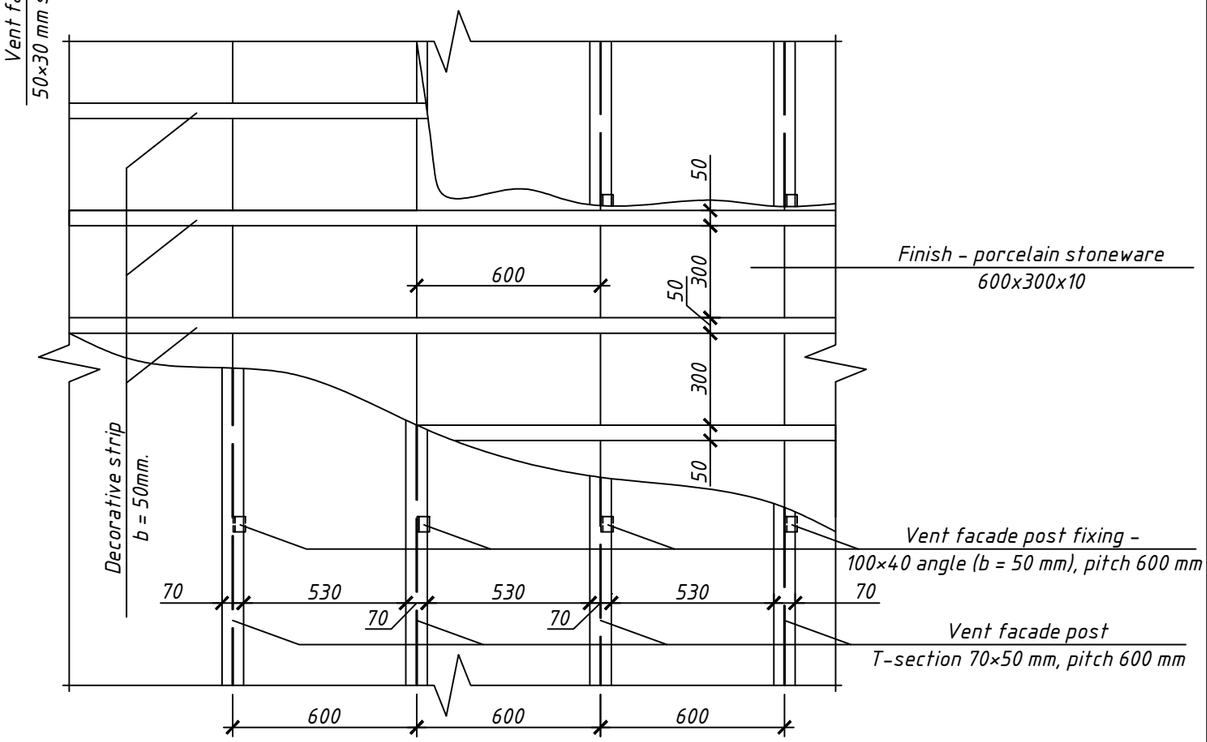
Section 10 – 10 (M1:20)



Section 12 – 12 (M1:20)



Section 11 – 11 (M1:20)



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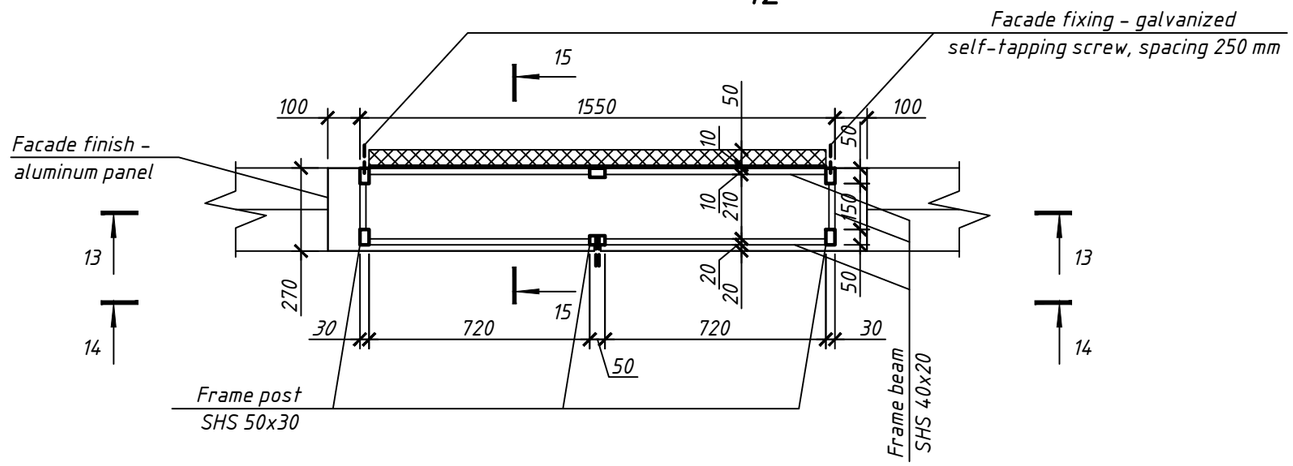
Формат А3

Construction detail 9/12 (M 1:20)



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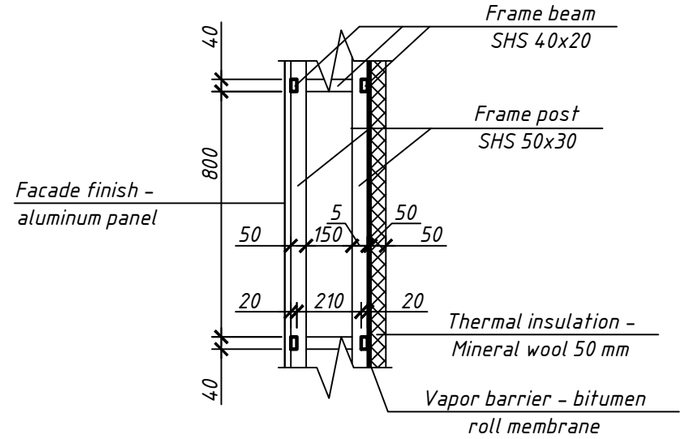

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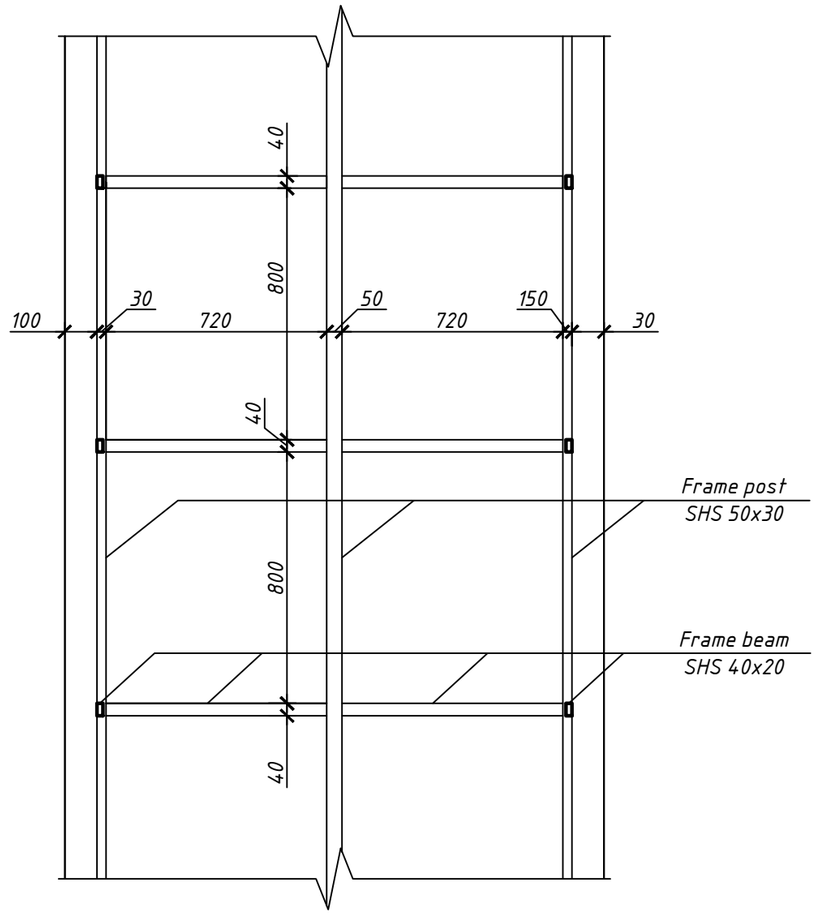
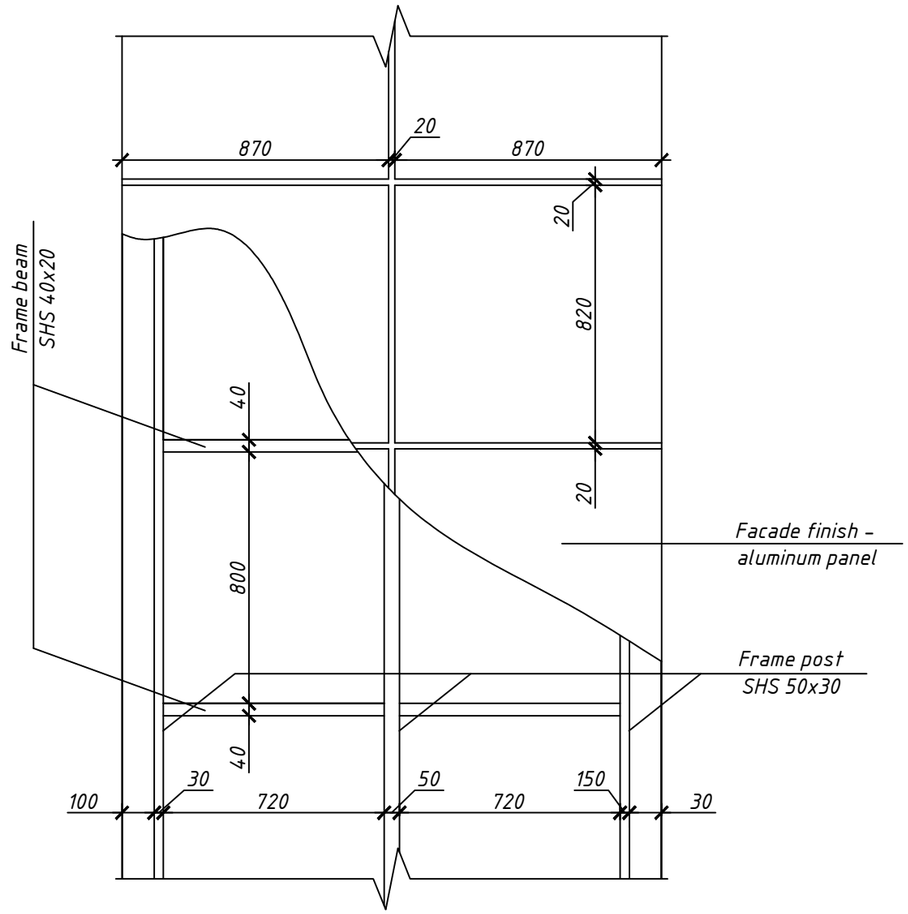


Section 14 – 14 (M1:20)



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Формат А3

Grid line layout plan

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Sheet 13