

**Rikonstruksion i godinës së Qendrës Shëndetësore Pustec dhe
përshtatja e saj për strehimin e zyrave të Bashkisë Pustec**

*Riconstruction of the building of Health Care Center Pustec and its adaptation
into the headquarters of the Municipality of Pustec*

SPECIFIKIME TEKNIKE

TECHNICAL SPECIFICATIONS

ARKITEKT / ARCHITECT : ODHISE ZOTO

INXHINIER ELEKTRIK / ELECTRICAL ENGINEER : SOKOL SHYTI

INXHINIER HIDROSANITAR / HYDRAULIC ENGINEER : MAMICA BABI

INXHINIER MEKANIK / MECHANICAL ENGINEER : ALMA KOKA

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Technical Specifications

Note 1	<p>All material supplied as well as all activities and works performed in the building shall comply with, match and follow Standards and Norms in force:</p> <p>The Albanian Standard for the Construction Materials and Construction Law No. 9290, date 7.10.2004 "ON CONSTRUCTION PRODUCTS" Law No. 8402, date 10.9.1998 "ON CONTROL AND DISCIPLINATION OF CONSTRUCTION WORKS" Law No. 9780, date 16.7.2007 "ON CONSTRUCTION INSPECTION" CMD No. 98, date 6.2.2013 ON THE APPROVAL OF THE LIST OF ALBANIAN HARMONIZED STANDARDS, WHICH HAVE REFERENCE CHARACTER FOR CONFORMITY CONSUMPTION FOR CONSTRUCTION PRODUCTS " CMD No. 312, date 5.5.2010 ON THE APPROVAL OF THE REGULATION "ON SAFETY ON SITE" CMD No. 68, date 15.2.2001 ON THE APPROVAL OF STANDARDS AND TECHNICAL CONDITIONS OF THE DESIGN AND IMPLEMENTATION OF CONSTRUCTION WORKS CMD No. 447, dated 19.9.1994 ON PROHIBITION OF THE USE OF ASBESTOS AS A THERMAL INSULATION MATERIAL IN ALL TYPES OF CONSTRUCTION Instruction No. 2, date 13.5.2005 ON THE IMPLEMENTATION OF CONSTRUCTION WORKS Instruction No. 3, date 15.2.2001 ON SUPERVISION AND TESTING OF CONSTRUCTION WORKS</p>
Note 2	<p>The figures and data (thickness, dimensions, diameters, width, length etc.), as well as the materials mentioned in this document are to be considered by the Contractor as minimum standards. Fixing materials and appurtenance shall be of the same or better quality than described and of the same minimum dimensions. Samples or detailed technical specifications of the proposed materials, goods, equipment, fittings and devices that the Contractor intends to provide and fix have to be submitted to the Project Engineer for a previous approval.</p>
Note 3	<p>All tools needed to perform the work must be provided by the contractor at his own expense</p>
Note 4	<p>Materials used and fittings installed without the Project Engineer approval shall be immediately removed.</p>
Note 5	<p>Brand names, address information, telephone and fax numbers of any manufacturer or supplier of devices, fittings and goods provided and installed into the building shall be transferred to the Project Engineer together with the respective certificates of origin and the operating and maintenance manuals.</p>

Note 6	<p>The contractor shall submit sample of all materials necessary for the execution of the Works. All materials are required to comply with ISO standards and the Supplier shall submit to the Project Engineer Affidavits of Compliance furnished by manufacturers of the materials indication's conformance to the applicable requirements of the standards and that all tests specified therein have been performed and all test requirements have been met. Unless specified otherwise, the latest edition of any Nominated Standards shall apply. In cases where no particular specification is given for any article or material to be used under the Contract, the appropriate ISO Standards of their approved equivalent shall apply. Unless otherwise specified, whenever in the specification's samples are required, the Contractor shall submit not less than three (3) samples of each such item or material to the Project Engineer for approval at no additional cost to the investor. Samples, as required herein, shall be submitted for approval a minimum of fourteen (14) working days prior to ordering such material for delivery to the job site, and shall be submitted in an orderly sequence so that dependent materials or equipment can be assembled and reviewed without causing delays in the work. All samples shall be individually and indelibly labelled or tagged, indicating thereon all specified physical characteristics and manufacturer's names for identification and submittal to the Project Engineer for approval. Upon receiving approval from the Project Engineer, one set of the samples will be stamped and dated by the Project Engineer and returned to the Contractor for safe keeping at the site office until completion of the Work. Unless otherwise specified, all colors and textures of specified items will be selected by the the Project Engineer from the manufacturer's standard colors and standard product lines.</p>
Note 7	<p>Any or all of the materials supplied by the Contractor for use in any of the Works shall be subject in advance to such tests as may be specified in the relevant Standard, the specifications or as may from time to time be deemed necessary by the Project Engineer. All tests of materials and works shall be undertaken on Contractor's expense, as described below in the Technical Specification or as required by the Project Engineer, by contracting a specialized, licensed laboratory or institute under the presence of the Project Engineer either at the construction site or in laboratory/ institute environment. All test reports shall be submitted to the Project Engineer for comparison and approval prior to starting a next phase of works. Where the methods of test are not specified in the standards, or if there are options in the relevant standards, the Contractor shall submit to the Project Engineer for approval the methods by which he proposes to conduct these tests.</p>
Note 8	<p>Provide Field Construction Mock ups prior to start works prepare sample panels and sample areas in approximate size of 1m² and allow waiting period of durations of not less than 7 calendar days after completion of sample panels for negative reaction. Sample Panels should be prepared for the following as per Drawing Details:</p> <ul style="list-style-type: none"> • Façade render • Ceramic Tiling Works (for balcony area) • Floor Works (for each area)
Note 9	<p>Before any part of construction phase can be closed, filled or covered the contractor is obliged to inform the Project Engineer. A position can be closed, filled or covered only after the Project Engineer's approval.</p>
Note 10	<p>The explanations described below in the technical specification must be strictly followed but not limited to ensure a high construction works performance.</p>

Note 11	The below technical specifications describe shortly all steps of the material producing process and its further composition to avoid any misunderstanding or mixing up of construction elements with similar or approximate properties.
Note 12	It is the responsibility of the Contractor to fully respect the applicable local (Albania) Laws concerning Health and Safety at works for his workers and third parties too.
Note 13	It is the responsibility of the Contractor to fully respect the applicable local (Albania) Laws concerning observance of daily and weekly Working hours for his workers.
Note 14	At the beginning of the works Contractor should provide the Program of Works for all positions from BoQ according to Schedules and Milestones given on Bidding Preliminary Program of Works. Contractor is obliged to provide a Weekly Program of Works to the UNOPS Project Engineer at least 3-days before starting the next week.
Note 15	The current staff of the Health Care Center and other institutions will be removed from the building, in order to perform the interventions.

No. An.	Description
1-1	GROUNDWORK
	<p>The aim of this work section is to clear the site and put in place adequate environmental controls to allow the commencement of earthworks and/or building works. Submit the methods and equipment proposed for the earthworks, including the following: - Dewatering and groundwater control and disposal of surface water; - Control of erosion and contamination of the site, surrounding areas and drainage systems; - Dust control; - Noise control. Keep the area within the drip line free of construction material and debris. Do not place bulk materials and harmful materials under or near trees. Do not place spoil from excavations against tree trunks. Prevent wind-blown materials such as cement from harming trees and plants. Prevent damage to tree bark. Do not attach stays, guys and the like to trees. If excavation is required near trees to be retained, give notice and obtain instructions. Open up excavations under tree canopies for as short a period as possible. Use hand methods to locate, expose and cleanly remove the roots on the line of excavation. If it is necessary to excavate within the drip line, use hand methods such that root systems are preserved intact and undamaged. Backfill to excavations around tree roots with backfill free from weed growth and harmful materials. Place the backfill layers, each of 300 mm maximum depth, compacted to a dry density similar to that of the original or surrounding soil. Do not backfill around tree trunks to a height greater than 300 mm above the original ground surface. Immediately after backfilling, thoroughly water the root zone surrounding the tree. Water trees as necessary, including where roots are exposed at ambient temperature > 35°C.</p> <p>Before commencing earthworks, locate and mark existing underground services in the areas which will be affected by the earthwork's operations including clearing, excavating and trenching. Any damage to existing installations is the responsibility of the contractor and must be repaired at his own expense.</p>
2.37/5b	Transport of construction materials and soil by car up to 10km
	<p>Transportation of any material by the Contractor, will be done by suitable machines, which when charged do not cause spillage and the entire load to be secured. Any car that does not meet this requirement or any of the traffic rules or laws will be removed from the site. All materials brought by the Contractor, must be stacked or stored in order to suitable to protect them from slipping, damage, breakage, theft and available, to be checked by the Supervisor of Works at any time.</p> <p>All excess material excavated, or from demolition will be removed to approved sites. When it is necessary to transport material over paved roads or places the Contractor should provide this material from spills on the road or those paved places.</p>
1-2	BRICK MASONRY
	<p>Contractor will provide for construction of Masonry Inside made by clay bricks, clay blocks and partition walls according to the Detail Design. Contractor will provide for construction of Masonry Inside with different thickness.</p>
2.64/2	Solid brick wall in height up to 3m, with mixed mortar M25
	<p>Contractor shall supply and install hollow clay bricks for masonry internal walls in the part where walls should be demolished. Dimensions of clay brick 25 x 12 x 6.5 cm. In calculation should be included needed mortar for bonding bricks.</p>

1-3	CONCRETE AND REINFORCED CONCRETE
	<p>The Contractor shall carry out the works described in accordance with the appropriate standards, as mentioned in Note 01.</p> <p>Materials used in the works shall be new, good and of the qualities and kinds specified herein and equal to the approved samples. Delivery shall be made sufficiently in advance to enable further samples to be taken and tested if required. Materials not approved shall be immediately removed from the works at the Contractor's cost. All specified properties of the concrete-making materials shall be tested with a frequency to ensure continuous compliance with the requirements, and whenever new materials are to be used. Materials shall be transported, handled and stored on the site or elsewhere in such a manner as to prevent damage, deterioration, or contamination.</p>
2.119/1	Reinforced Concrete beams and lintels C-16/20, h~4m
	<p>Lintels are realized in the entire width of the masonry with min support. 25 cm beyond side shoulders, with different heights depending on the light space, reinforced regularly and according to the instructions in the project, prepared from concrete M 200 and M 300, including service scaffolding, molds, reinforcements, reinforcement iron and any reinforcement next for finishing work.</p>
2.121/1	Reinforced Concrete antiseismic belt C-16/20, h~8m
	<p>Realization of the antiseismic belt, in the entire width of the masonry and with a height from 15 to 20 cm, reinforced according to KTZ and STASH, made with concrete produced on site, added to well-vibrated thin layers, concrete M 150 to M 250 with inert, including castings, reinforcements, reinforcing iron, service scaffolding or scaffolding, as well as any other obligation to complete the work.</p>
2.122/1a	Reinforced Concrete Solid slab C 20/25, t = 10cm, h ~ 4m
	<p>Regular monolithic concrete slabs, made of concrete M 200-300, realized on site in well-vibrated thin layers, including iron, castings, punches, reinforcements, service scaffolding or scaffolding, as well as any other obligation for finishing the work.</p>
R.227	Reinforced Concrete stairs
	<p>Stairs for the entrance of UKT, as well as the ramps for the disabled persons, made of concrete M 250 to M 300, including castings, reinforcements, service scaffolding, excavations for foundations, reinforcement iron, as well as any other obligation to complete the job.</p>
1-4	WATERPROOFING AND ROOF
2.197	Waterproofing with bitumen emulsion with 2 layers of tar
	<p>Waterproofing should be laid on a dry surface, previously leveled, including vertical surfaces, treated with bituminous first coat as first coating. Above this two bituminous sheets are placed, with mineral fiber, each with a thickness of min. 3 mm, adjacent to flame, with membranes located at right angles to each other, on the surface of sloping or vertical, ensuring that the overlap of the joined elements is 12 cm. Vertical or sloping insulating membrane protection will be realized with a layer of mortar or 3 cm thick cement mortar (mortar type 1: 2), slabs or mortar layer will be realized in the form of a square 2 x 2 m, with joints of 2 cm, which will be filled with bitumen as required.</p>

2.200	Cement varnish layer 1:2, t = 20mm
	<p>Cement screed thickness should be min. 50 mm to 150mm to create the necessary decrease, or according to the detailed design, for the flat roof of the building. The screed is at greater risk of micro-cracks, which reduce its strength. Reduce this risk with one of the following approaches: - Mix the polypropylene fibers into the screed mixture before adding water; - Alternatively, position the cracking control steel mesh on your subfloor so that it will be placed in the upper half of the screed.</p> <p>The mechanical resistance of the screed must be at least 25 Mpa. The screed must be compact and homogeneous on the surface and in all thickness. Presence of layers or areas with poor, low stability, is a sign of weak mechanical properties that may cause the floor to decay or break off. These areas should be carefully assessed and depending on the severity and extent of the defect, they should be removed and repaired or consolidated with suitable products. Before installing the floor, it is absolutely essential that the screed be cured and that most of the shrinkage be completed. In fact, during the curing cycle, the esters are prone to hygrometric shrinkage due to a portion of the mixing water evaporating or drying out. This can cause twisting or cracking. If cracks are caused after floor installation, the floor covering may be damaged. The curing time for a traditional sand cement screed is about 7-10 days per centimeter of thickness in good weather. It is possible to significantly reduce the cure time by using special supplements, or using special binders or predetermined, controlled shrinkage, fast drying and placement of mortar in the mixture. The surface of the screed must be perfectly clean. Dust, dirt, detached areas, debris and any other material or substance on the screed surface must be removed before installing the floor to prevent compressed adhesion between the floor and the screed. The level of moisture remaining in the screed must be checked. It must conform to the maximum level for that type of floor and must be uniform throughout the overall thickness of the screed, especially when laying moisture-sensitive floors. For cement-based screeds, levels less than 2% are considered acceptable, for wooden floors less than 2.5-3% also for PVC, rubber and linoleum. The level of residual moisture in a screed is measured using an electric or carbide hygrometer. The leveling is controlled by extending a straightener at least 2 meters long in all directions on the surface of the screed. The maximum acceptable tolerance with this straightener is 2 mm, although the acceptable tolerance varies based on the length of the straightener used to control leveling. If leveling is not within the limits of tolerance the surface should be leveled using a suitable product before installing the floor.</p>
2.203	Reinforced concrete tile on the terrace parapet
	<p>The Contractor shall provide all the material needed to cover the attic walls of the flat roof of the building with galvanized and plasticized metal sheeting of thickness $th = 0.60\text{mm}$ and width up to 1.0m. The calculation shall include all steel supporting and fastening elements, screws, etc. based on the detailed design and according to the manufacturer's manual.</p>
2.209/a	Vertical discharge gutter with PVC Ø120mm
	<p>The Contractor shall provide all necessary material and installation of vertical gutters 125mm in diameter, from $th = 0.60\text{mm}$ thick galvanized and plasticized metal sheeting.</p> <p>The calculation should include all the connecting elements, connecting joints, retainers, screws, etc. based on the detailed design and according to the manufacturer's manual.</p>
2.206	Discharge tape with xingat sheet metal
	<p>During the construction of the roof layers, leave the spaces for the placement of the catchments and their connecting nodes, the spaces with diameter $d = 125\text{ mm}$, for the horizontal and vertical penetrations, for the vertical gutters.</p>

2.196/b	Mapej one-layer waterproofing
	<p>Contractor shall provide Cold Waterproofing made by- one-component mortar based on cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers dispersed in water, blended according to a producer Formula updates instructions, Technical Specifications and Detailed Design. Calculation should do for each point different size.</p> <p>Do not use Cold Waterproofing for thick coatings (more than 2 mm per coat). Do not apply Cold Waterproofing at temperatures below +8°C Do not add cement, aggregates or water to Cold Waterproofing. Protect from rain and water spillage for the first 24 hours after application.</p>
An.	Thermal insulation layer with polystyrene t = 10cm
	<p>Supply of all necessary material and installation of XPS- Extruded polystyrene insulation layer on the flat roof, by connecting with a suitable adhesive.</p> <p>- Weight; $w \geq 30 \text{ kg/m}^3$; - Thickness $t_h=5 \text{ cm}$; - Thermal Conductivity; $\lambda=0,035 \text{ W/m}^2\text{K}$; - Compressive stress at 10% compression $\sigma_{10}; \geq 300 \text{ kPa}$; - Duration compressive stress σ_2 in upsetting $\leq 2\%$; $\sigma_2 \geq 45 \text{ kPa}$; - Water vapor diffusion resistor; $\mu=30/70$.</p> <p>In this position, the PVC foil that is placed on the XPS boards must also be calculated. The thermal insulation shall lay with crossed joints. Where indicated, provide can't strips at intersections of roof with walls, parapets, and curbs extending above roof. The expanded polystyrene foam insulation shall be undertaken by bonding with a suitable adhesive for insulation directly to the surface of the vapor barrier, which itself has been bonded directly to the concrete roof. Prior to order the Material and start the works Contractor should submit the following: - Shop Drawings; - Certificates and other test reports to the SUPERVISOR Project Engineer for approval. Certificates and Technical Specifications; - Test Reports from Independent bodies / Laboratory showing Results indicated on Certificates and Brochures; - Manufacturer's Instructions Brochures and Technical Specifications.</p>
1-5	FLOOR LAYERS
	<p>The contractor will be responsible for setting up and maintaining the given levels. The given characteristic level "Zero" will be the floor level given in the Detail Design.</p>

2.264	Cement varnish layer 1:2
	<p>Contractor shall provide high quality cement screed in layer approximately th=approx. 70 mm above concrete floor slabs for floor levelling. Screed is at greater risk of micro cracks, which reduce its strength. Reduce this risk with one of the following approaches:</p> <ul style="list-style-type: none"> - Mix polypropylene fibers into the screed mix before adding water. - Alternatively, position crack control steel mesh over your subfloor so it will sit in the top half of your screed. <p>Mechanically resistant: The mechanical strength of a screed must be at least 25 Mpa.</p> <p>The screed must be compact and homogeneous on the surface and through the whole thickness. The presence of layers or areas of crumbly, lower consistency is a sign of poor mechanical characteristics which could cause breakage or detachment of the flooring. These areas must be carefully assessed and, according to the seriousness and extent of the defect, they must be removed and repaired or consolidated with suitable products.</p> <p>Before installing of flooring, it is absolutely essential that the screed is cured and that most of the shrinkage is completed. In fact, during the curing cycle, screeds are prone to hygrometric shrinkage due to part of the mixing water evaporating or drying off. This may cause curling or cracking. If cracks develop after installing the flooring, the floor covering could be damaged.</p> <p>The curing time for a traditional sand-cement screed is around 7-10 days per centimeter of thickness in good weather. It is possible to reduce curing times considerably by using special admixtures, or by using special binders or pre blended, controlled-shrinkage, rapid-drying and setting mortar in the mix.</p> <p>The surface of the screed must be perfectly clean. Dust, dirt, detached areas, rubble and any other material or substance on the surface of the screed must be removed before installing the flooring to prevent compromising adhesion between the flooring and the screed.</p> <p>The level of residual humidity in the screed must be checked. It must conform to the maximum level for that type of floor covering and must be uniform through the whole thickness of the screed, especially when installing flooring sensitive to humidity. The level of residual humidity in a screed is measured using an electric or carbide hygrometer. flatness is checked by lying a straightedge at least 2 meters long in all directions on the surface of the screed. The maximum acceptable tolerance with this particular straightedge is 2 mm, although the acceptable tolerance varies according to the length of the straightedge used to check for flatness. If the flatness is not in tolerance, the surface must be levelled off using a suitable product before installing the flooring.</p>
2.266	Layer with ordinary granular tiles 30x30cm
	<p>The Contractor shall provide & install high quality, first class, ceramic tiles, earthenware products which are suitable for floor covering. Nominal facial dimensions and thickness 400 by 400 x 10 mm which have to be non-slip characteristic and apply stoneware product.</p> <p>Material should be stone granulate bonded with synthetic resins, for Inside Floor Coverings for Floor with cement mortar binder as per Producer Manual, Technical Description and Detailed Design. Type and color to be determined by SUPERVISOR Project Engineer.</p>
2.289	Cementitious pavement, without concrete curb
	<p>The base and sub-base must meet the necessary technical conditions in terms of compaction and good material.</p>
1-6	CEILING AND PLASTER
	<p>Fiberglass reinforcing mesh shall be installed on the ceiling surfaces with the matching lines with of constructive volumes, the matching lines of structural units, edges angles etc. with fiberglass mesh including adhesive.</p>

2.300/1	Slab plaster h ~ 4m with guide, with pump
2.310/1	Interior brick wall plaster h ~ 4m with pump, mixed mortar M25
	Contractor shall supply and installation of cement lime mortar, which is pre mixed mortar based on cement, which only requires adding water. Cement mortar offers high adhesion to the substrate; excellent workability; simple application; ideal for application with mortar pumps. Standardized and stable features; very good properties for the areas with water vapor. It is suitable for outdoor and indoor environments. It is classified as mortar of category GP CS II, W0 based on the standard EN-998-1.
2.324a	Porcelain tiles plinths
	They the same as the floor tile, 8 cm high and 1.5 cm thick, placed with mortar or with adhesive. Mortar for plinths should be dosed for m ² : washed sand 0.005 m ³ ; cement 400, 4 kg and water including putty, cleaning as well and any other obligation to complete the work perfectly.
1-7	PLASTER AND CLADDING
2.326	Coat with majolica tile
	The Contractor shall provide & install high quality, first class, earthenware products for wall covering. Nominal facial dimensions and thickness 400 by 200 x 8 mm which has to be high-slip characteristic and apply stoneware product (i.e., clay product without glaze. Material should be stone granulate bonded with synthetic resins, with cement mortar binder as per Producer Manual, Technical Description and Detailed Design. Type and color to be determinate by SUPERVISOR Project Engineer.

2.358/c	Facade cladding with compact green polystyrene t = 5cm + mesh + plaster
	<p>Thermal losses through external walls account for up to 40% of losses generally in the uninsulated building. Therefore, the insulation of exterior walls is always the first measure of improving energy efficiency. XPS is a chemical composition of extruded polystyrene foam which is melted in an extruder foamed up by adding a blowing agent and formed into a continuous web of foam material. The blowing agent used is normally carbon dioxide which after production escapes from material and is replaced by air. XPS absorbs very little water and has a high compressive strength. It has a diffusion resistance, but is not resistant to ultraviolet radiations and cannot resist solvents. The maximum temperature for applications is +75 °C. Laying an adhesive layer on the XPS panels is done with a trowel, from bottom to top. prepared, cement-based mortar, composed from Portland Cement with excellent qualities, carbonate stone filler with selected granulometry, synthetic resins and special additives, which improve the workability, adhesion, flexibility and increase the hydrophobicity of the dry mortar. After application leave to dry for 3-5 days before applying further coatings. The coating shall appear uniformly dry with no damp areas (dark patches). Based on an ambient temperature of +20°C and relative humidity ≤ 70%. Unfavorable weather conditions may prolong the setting time. Highly impact resistant, unique fiber combination, resistant to weather conditions and resistant to hairlines and cracks. The mesh (fiberglass mesh) is pressed on the top layer of the newly applied adhesive (outer third), with overlap at least 10 cm. It is necessary to use corner profiles with integrated mesh in all corners and openings, which additionally protect the insulation in these sensitive places. The mesh is pressed 2 mm into the previously applied adhesive, so that it stays on the outer third of the adhesive thickness. Mesh pieces are installed diagonally around the opening in the façade to prevent the formation of cracks. Zones of anticipated concentrated tension - openings – shall be reinforced by cuts of wire mesh of the minimum dimensions of 300x200 mm, placed diagonally in the corners. In the case of reinforcement of corners to increase the resistance to mechanical damage, pieces of the wire mesh should be overlapped by 100mm. The wire mesh from glass fibers should be applied to the entire surface from top to bottom; the strips must overlap at least by 100 mm. In the case of double reinforcement, the whole process must be repeated before drying of the previously applied layer.</p>
	<p><i>Preparatory works</i></p> <p>The works which needs to be performed on a solid basis to ensure adequate tightening and normal function of thermal insulation: - Visual inspection in order to assess the nature and quality of the substrate and, in particular, the dampness of the substrate, the risk of penetration of moisture into the ETICS and in order to identify any cracks in the substrate; - The plaster detached from the solid base must be removed completely; - Dusty surfaces shall be cleaned; - Wet walls should dry; - The solid and retaining plaster shall be cleaned; - The cracks shall be closed; - Primer layer- concrete painting with brush all concrete wall parts where facade will be applied; - Primer- contact preparation, to be painted in all parts where facade will be applied.</p> <p>For all absorbent materials, vapor permeable, deeply penetrating and improves bonding of materials. During the application and drying phase, the ambient and surface temperature should not fall below + 5 ° C. Protection of the facade insulation must be done before moisture acts and cover as soon as possible with reinforcement layer.</p>

	<p><i>Setting the initial profile</i></p> <ul style="list-style-type: none"> • Aluminum profiles are installed at a width equal to the thickness of the polystyrene. • The horizontal level of the profile is checked, in order to become a good basis for further placement of tiles; if the surface is uneven, spacers are placed where necessary. • Use adhesives intended for stone wool. • Depending on the manufacturer's recommendation, the board is impregnated around the perimeter, or the entire surface (using a thin layer of adhesive). • Air should not circulate between the board and the substrate, so it is necessary to place an adhesive layer along the perimeter of the entire board (the so-called edge strip about 5 cm wide), as well as in the middle, in 2-3 seats, each about 15cm in diameter. The total adhesive coverage should be min 40%. Only this type of adhesive ensures the durability of the facade. Lack of perimeter climbing is the most common reason for facades to fall during strong wind gusts. • The rock wool panels are glued from the bottom up, close to each other, from the initial profile. • The second row extends from the 1/2 of panel. • Pay attention to the gluing of the panels in the corners, that the joints of the planks are not in the corners of the building (should be done so-called comb), as well as around the openings, it is better to cut the panel around the holes and avoid cracks in the corners that can often be seen on unprofessionally applied facades). • In the opening around the window, paste the so-called Elements of casing in thickness of min 2 cm.
	<p><i>Fixing of polystyrene panels</i></p> <ul style="list-style-type: none"> • Due to its weight, rock wool should also be fixed with anchors intended for rock wool (with steel wedges). • Min. 8 anchors per m², furthermore, the peripheral parts are additionally fastened at both ends of the edges. • Only start drilling after the adhesive has hardened sufficiently (generally 2–3 days) • The anchors are fitted with an expanding metal mandrel and insulated plastic head and are designed for fixing mineral wool boards to solid substrates (concrete, solid brick) and on porous substrates. Min. anchoring depth: 50 mm; fastener diameter: 8 mm; flange diameter: 60 mm. The anchors' fixing depth in the load-bearing layer of the wall should comply with the Technical Approval (usually 5-6 cm for solid materials and 8-12 cm for porous materials).
	<p><i>Reinforcement of the angle</i></p> <ul style="list-style-type: none"> • It is necessary to use corner profiles with integrated mesh in all corners and openings, which additionally protect the insulation in these sensitive places. • The mesh is pressed 2 mm into the previously applied adhesive, so that it stays on the outer third of the adhesive thickness. • Mesh pieces are installed diagonally around the opening in the façade to prevent the formation of cracks. • Should be install windows sill profiles on windows, due to rainwater drainage.

	<p><i>Installing the mesh and adhesive</i></p> <p>Laying an adhesive layer on the rockwool panels is done with a trowel, from bottom to top</p> <p>Adhesive: prepared, cement-based mortar, composed from Portland Cement with excellent qualities, carbonate stone filler with selected granulometry, synthetic resins and special additives, which improve the workability, adhesion, flexibility and increase the hydrophobicity of the dry mortar. After application leave to dry for 3-5 days before applying further coatings. The coating shall appear uniformly dry with no damp areas (dark patches). Based on an ambient temperature of +20°C and relative humidity ≤ 70%. Unfavorable weather conditions may prolong the setting time.</p> <p>Material characteristics: Highly impact resistant, unique fibber combination, resistant to weather conditions and resistant to hairlines and cracks.</p> <p>The mesh (fiberglass mesh) is pressed on the top layer of the newly applied adhesive (outer third), with overlap at least 10 cm.</p> <p>Mesh dimensions: 4x4mm, treated fabric weight: ≥160 g/m², tensile strength: warp 2075 N/5cm and weft 2180 N/5cm, with 100 mm overlapping edges). Material characteristics: alkali-resistant, slip proof and tear proof.</p> <ul style="list-style-type: none"> • It is necessary to use corner profiles with integrated mesh in all corners and openings, which additionally protect the insulation in these sensitive places. • The mesh is pressed 2 mm into the previously applied adhesive, so that it stays on the outer third of the adhesive thickness. • Mesh pieces are installed diagonally around the opening in the façade to prevent the formation of cracks. <p>Zones of anticipated concentrated tension - openings – shall be reinforced by cuts of wire mesh of the minimum dimensions of 300x200 mm, placed diagonally in the corners. In the case of reinforcement of corners to increase the resistance to mechanical damage, pieces of the wire mesh should be overlapped by 100mm. The wire mesh from glass fibers should be applied to the entire surface from top to bottom; the strips must overlap at least by 100 mm. In the case of double reinforcement, the whole process must be repeated before drying of the previously applied layer.</p>
	<p>Formation of edges, outer and inner corners</p>

	<p>Finishing / decorative layer of the façade</p> <ul style="list-style-type: none"> • Before applying the final layer/decorative layer, should be applied a primer, after the softening glue has completely dried; provides good adhesion of the reinforcing and decorative layer of the façade <p>Base coat: water dispersion of synthetic resins with mineral fillers. Primer with high covering power, ready to use, solvent free dispersion, bonding agent, density: approx. 1.5 kg/dm³, solid contents: approx. 8%, ph: approx. 8),</p> <p>The decorative layer: Final coat 1.5-2mm (ready to use pasty, silicone resin bound final coat with rubbed or grooved structures for exterior use:</p> <p>Density: approx. 1.7 kg/dm³, thermal conductivity: $\lambda=0.61W/(m^{\circ}K)$ acc. EN 15824, water vapor permeability: V1 acc. EN 15824, water absorption: W3 acc. EN 15824, adhesion: 0.6 MPa acc. EN 15824, impact resistance: category 1 acc. ETAG 004, water vapor permeability: V1 m acc. ETAG 004, fire classification: A2-s1; d0, acc. EN 13501-1. (European manufactured and certified). Final color and structure to be determined by the supervising architect.</p> <p>Material characteristics: self-cleaning effect (highly resistant to dirt), high elasticity and impact resistant, high resistant to weather conditions and very low absorption and high vapor permeability.</p> <p>The Contractor shall provide and apply the base coat and final coating to the air and substrate temperature which shall not be less than + 5°C and above +20°C in direct sunlight (until the material is fully set) and simply dry out physically by water evaporation. The drying time depends on the temperature and relative humidity.</p> <p>At +20°C and 65% relative humidity, the material may be adhered after approximately 24 hours. The product will be completely dry after approx. 14 days. The drying time will be extended depending on the temperature.</p>
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1-8	DOORS AND WINDOWS
2.375/1	Supply and Installation, Windows d / aluminum plastic with double glazing
2.373/1	Supply and Installation, Windows-Doors d/aluminum plastic with double glazing
	<p>To have a correct calculation the contractor must visit the site to identify in more detail the windows, to make accurate measurements in order to identify the dimensions. Any deviation from surfaces or additional interference within BoQ are no reason to request additions. It should be referred to the window schemes with the features given for the Aluminum windows. All windows and doors marketed by EU countries but also other countries and specially manufactured for this Project must be CE certified. The abbreviation CE stands for "Communautés Européennes" - European Community and indicates that the product complies with the relevant directives. For doors and windows, the main European guideline is the Construction Products Directive which is implemented by national laws. Glazing work shall comply with BS 6262: 1982. Prior to proceeding with any works, the Contractor must take all necessary measurements on site to verify other dimensions and specifications given in the drawings. The Contractor shall protect all glazing work from damage during subsequent operations, make good any defects, clear away upon, clean throughout and leave all work in perfect condition to the satisfaction of the Engineer. The Contractor shall fix all glass in accordance with the glass manufacturer's instructions. The contractor shall be responsible for the adequate protection of all installed glazing and will replace any scratched, cracked or broken glass and clean all glazing on both sides prior to hand over. All windows are equipped with mechanical openings. The ratio between the opening part and the fixed part of the window depends on the size of the window and the project. Aluminum windows larger than 3 meters (or if the project envisages otherwise) must be reinforced with an additional metal profile.</p>
An.	Entrance doors
	<p>Supply, production and installation of aluminum entrance door according to heavy duty door manufacturing technology including: handles, hinges, complete locking mechanism (cylinder, plates, keys), locks, rubber opening limiter, sill profile etc. The door handles should be made of high quality, processed with stainless steel (Inox). Rust, acid and scratch resistant.</p>

2.388	Wooden doors with wooden heart, wooden frame, 1/2 glass
	<p>Install doors so that the frames:</p> <ul style="list-style-type: none"> • Are plumb, level and straight within acceptable building tolerances. • Are fixed or anchored to the building structure to resist the wind loading. • Will not carry any building loads, including loads caused by structural deflection. • Allow for thermal movement. <p>Use materials compatible with the item being fixed and of sufficient strength, size and quality to perform their function. Provide a corrosion resistant finish. Match exposed fixings to the material being fixed. Provide appropriate back support (for example blocking and backing plates) for hardware fixings. Pack behind fixing points with durable full width packing. If fixing timber door frames into existing prepared openings with fastenings through the frame face, make the fastener heads finish below the surface and fill the hole for a smooth surface finish. Make accurately fitted tight joints so that neither fasteners nor fixing devices such as pins, screws, adhesives and pressure indentations are visible on exposed surfaces. Ensure moving parts operate freely and smoothly, without binding or sticking and are lubricated. Contractor shall ensure that the surface finish has a resistance to marking of at least class 3 and will be capable of withstanding cleaning with hot water containing mild non-abrasive detergents and disinfectants as part of a regular cleaning program.</p> <p>Contractor shall ensure that the surface finishes of door sets and their associated hardware used in kitchens, changing facilities, toilets and other areas likely to be subject to intermittent contact with water and water vapor meet the requirements for no deformability.</p> <p>Contractor will incorporate door stops fitted as close to the leading edge of the leaf and no less than two thirds of the door width away from the hinge line. It is also important to ensure door stops are never located in positions where they may constitute a trip hazard.</p>
R.98/1	Door / window disassembly
	Removal of doors and windows is carried out before the demolition of the wall, including the case, frames, etc. Material found on site must be disposed of and stored at a designated site.
1-9	PAINTING
	All wall surfaces with solid material (clay blocks, aerated concrete, concrete walls, brick walls and others) should be cleaned from debris and dirt with, air – dried under pressure and then completely painted with primer layer as a base for gluing of other layers. Calculation of performed works in “m ² ” net is completed.
2.404	Hydroplastic paint

	<p>The term “paint” as used herein includes emulsion, varnish, adhesive and other coatings, organic or inorganic, used as primary, intermediate or final coat. All painting work will be performed by skilled and experienced workman in this field. Painting of walls, columns, ceilings and other elements with latex color with ecological content and paint resistant to scratches and cleaning according to directive EN 13300, in tones and spectrum according to recommendations from designer, synthetic base according to DIN 55945, moisture resistant – class 1 according to the standard DIN EN 53778. The price should include the placement of the base coat before the colors. Calculation of works performed in “m²” net is completed. The paint should be for indoor use, environmentally friendly and cleanable. The product is characterized by the extremely small number of evaporating substances. It must not contain softening agents or heavy metals and must comply with the requirements of “Commission Decision 2002 / 739 EC. The surface should be firm, dry and clean, free of dust particles, oil stains or other cleanliness.</p>
1-10	DIFFERENT WORKS AND DEMOLITION
	<p>Demolition of materials and types of various structures currently installed or constructed in the building, and transportation of demolished materials to the authorized landfill. In special cases, include storage for reuse of existing parts. As it is described on BoQ contractor should calculate all expenditures for force labor, equipment uses and other needs to perform below activities: - Removal of all debris, shrubs, existing fences, cutting the grass and cleaning all area of the New / Designed Plot and transportation of material to the authorized dumpsite as per SUPERVISOR Project Engineer Instructions; - Demolition of Existing Fixtures in the plot, buildings, canopies, structures, fences, lights, walls, booths, containers, antennas, coverings & cladding and all other plots by different material and type of structures, installed or constructed currently in the New / Designed Limits and transportation of the demolished material to the authorized dumpsite. In calculation to be included preservation for reusing of the existing demolished Existing Fixtures too; - Relocation of Existing Fixtures as per SUPERVISOR Project Engineer. In calculation to be all works activities and any additional material in order to enable continues works as per current activities; - Demolition of Existing Pavements & Asphalt shall include the transportation of material to the authorized dumpsite as per SUPERVISOR Project Engineer Instructions; - Dismantling carefully of Existing Electrical, Water & Sewage, and HVAC Installation and associated fixtures (pipes, chambers, manholes etc. by preparing the System ready for Future New Installation use and appropriation of System for other neighborhood buildings without interruption of those systems during construction in phases in accordance and appropriation with Detail Design as per SUPERVISOR Project Engineer Instructions. In calculation to be included transportation of demolished material to the authorized dumpsite to be included in calculation too; - Dismantling or Demolition carefully of other not specified Materials or Structures, Installation in accordance and appropriation with DD and transportation of demolished material to the authorized dumpsite; - Calculate the working activities for crushing of the stones, concrete or other structures hidden or not-showed upper surface. In calculation to be included manpower, tool using and all necessary fuels, electricity or other spare parts needed, as well as transportation of material to the authorized dumpsite.</p>
2.405	Window sills with reinforced granite tile
	<p>The window sills should be sharp and dotted on the outside. They should come out min. 3cm from the finished surface of the facade, to avoid licking water on the facade.</p>

2.246	Brick wall demolition without cleaning
	Demolition of masonry with solid bricks, of any type and dimension, even plastered or coated with majolica, which is realized by any means and of any height or depth, including service scaffolding or scaffolding, possible fittings for it supporting or protecting surrounding structures or buildings, repairing damage caused to third parties for interruptions and normal restoration of public and private pipelines (sewers, water, lights, etc., making arrangements within the site area.
1-11	SCAFFOLDING AND FRAMEWORK
2.431	Metal pier with facade pipes > 12m
	Scaffolding is included in the overall price. Scaffolding services include transporting, assembling and bringing the scaffolding to usable condition and then dismantling and removing it from the workshop once the work is completed.