TECHNICAL SPECIFICATIONS

Project Title:

Reconstruction of 9-Year School "Emin Duraku", Municipality of Tiranë

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ARCHITECTURAL TECHNICAL SPECIFICATIONS

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1. General

Standarts used in these "Technical Specifications" and that will be used further do not support only on drawings, but also in legal manuals and advisory books like:

- No.1 Manual of "Technical Analysis Production of Building Materials,

Tirane -15.07.2015 (Republic of Albania –General Directorate of Taxes, Ministry of Transport and Infrastructure, Council of Ministers)

- No. 2 Manual of "Technical Analysis for Building Construction Works", Tirane – (Republic of Albania – General Directorate of Taxes, Ministry of Transport and Infrastructure, Council of Ministers with No.629, date 15.07.2015).

2. Demolition and Removal

2.1. General Demolition

Demolition of an entire building or part of a building using any tool, including:

- props, service scaffolding, taking measures for the application of all relevant acts of safety of protection of workers and the population,
- day and night signals as well as the personnel for the notification of the passers-by,
- works for temporary fences,
- repairing for possible damages that may be caused to third parties and restoration of public and private pipelines,
- loading of materials resulting from decay, including transport and unloading.

3. Excavations of Soil

3.1. Landing:

Flattening and leveling of soil, carried out by hand or mechanical means, on land of any nature and consistency, dried or wet (clay even if compacted, sand, gravel, stones, etc.), including cutting and removing roots, trunks, stones and parts with a volume up to 0,30 m^3, including and fulfilling obligations related to underground constructions as

sewage canals, pipelines in general, etc., including the transport of all waste to an authorized public place.

3.2. Excavation, Depth for Foundations, Wells and Underground Works

Excavation of soil for foundations or underground works, up to a depth of 1.5 m from the ground, on soil of any nature and consistency, dry or wet (clay even if it is compact, sand, gravel, stones, etc.), including cutting and removal of roots, trunks, stones and parts with a volume of up to 0,30 m^3, fulfillment of obligations related to underground constructions such as sewage canals, pipelines in general, etc., reinforcement of any marks and resistance, filling of the parts that remain empty after the realization of the foundations with the excavation material performed by hand, as well as the transport of all the waste in an authorized public place.
Any temporary work that will be needed during the excavation process, depending on the process of the excavation (escarpment protection, water removal, etc.), will be included in the Excavation item given in the bill of quantities.

4. Masonry Works

4.1.Bricks Masonry:

4.1.1. Masonry with hollow bricks 10cm dhe 12cm:

Masonry with hollow bricks 10cm and 12cm and mortar M-15, with dosage per m^3: bricks no.177, mortar 0,10 m3, cement (m-400) 14 kg and water, for any thickness including any workmanship and material for connecting teeth, corners, openings in window railings, service scaffolding and everything else needed for finishing the masonry and its realization in a perfect way. On the ground floor, the brick masonry will be built on a layer of bitumen with a minimum thickness of 3mm. Two coats of hot liquid bitumen are accepted.

4.1.2. Masonry with hollow bricks 25cm:

Masonry with lightened bricks 25 cm and mortar m-15, with dosage per m3: bricks no. 205,mortar 0,29 m3, cement (m-400) 44 kg and water, for any thickness including any workmanship and material for connecting teeth, corners, openings in window railings, service scaffolding and everything else needed for finishing the masonry and its realization in a perfect way. On the ground floor, the brick masonry will be built on a layer of bitumen with a minimum thickness of 3 mm. Two coats of hot liquid bitumen are accepted.

5. Plastering Works

All surfaces to be plastered must first be wetted with water. Where necessary, other materials will be added to the water, in order to guarantee the perfect plastering. In any case, the Contractor is the only one responsible for the final realization of the plastering works.

5.1. Mortar

The following ratios for mortar, used for construction works and referring to specific items, are valid for 1 (one) m3 volume. These standards are based on Manual no.1 "Technical Analysis for the production of construction materials, guidelines and criteria" date Tirana - December 2010 (Republic of Albania - Ministry of Construction).).

5.1.1. Bastard Mortar Class 15

Bastard mortar class 15 with natural river sand (wet, addition in volume 20% and porosity 40%) formed with cement: white lime: sand in ratios 1: 0,8: 8. Quenched lime lt 110, cement 300 kg 150, sand m3 1,29.

5.1.2. Bastard Mortar class 25 with natural sand

Bastard mortar class 25 with natural river sand (wet, addition in volume 20% and porosity 40%) formed with cement: white lime: sand in ratios 1: 0,5: 5,5. Quenched lime lt 92, cement 300 kg 212, sand m3 1,22.

5.1.3. Bastard Mortar class 15 with washed sand

Bastard mortar class 15 with washed sand (porosity 35%) e formed with cement: white lime: sand in ratios 1: 0,8: 8. Quenched lime lt 105, cement 300 kg 144, sand m3 1,03.

5.1.4. Bastard Mortar class 25 with washed sand

Bastard mortar class 25 with washed sand (porosity 35%) e formed with cement: white lime: sand in ratios 1: 0,5: 5,5. Quenched lime lt 87, cement 300 kg 206, sand m3 1,01.

5.1.5. Bastard Mortar class 1:2 with washed sand

Bastard mortar class 1:2 with washed sand (porosity 35%) e formed with cement: sand in ratios 1:2.Cement 400

kg 527, sand m3 0,89.

5.2. Interior Plastering

- Spraying the walls and ceilings, with liquid cement mortar to improve the adhesion of the plaster and reinforce the masonry surfaces, including service scaffolding and any other obligation to completely end the spraying.
- Plastering made of a layer with a thickness of 2 cm bastard mortar m-25 with dosage per m2: washed sand 0,005 m3, bastard mortar(m-1:2) 0.03 m3, cement (m-400) 6.6 kg, water, applied, based on instructions prepared on walls and ceilings, and polished with trowel and squeegees, including service scaffolding and any other obligation to completely finish plastering perfectly.

5.3. Exterior Plastering

- Spraying the walls and ceilings, with liquid cement mortar to improve the adhesion of the plaster and reinforce the masonry surfaces, including service scaffolding and any other obligation to completely end the spraying.
- Plastering realized by a layer with a thickness of 2 cm bastard mortar m-25 with dosage per m2: washed sand 0,005 m3, bastard mortar (m-1:2) 0.03 m3, cement (m-400) 6.6 kg, water, applied, based on the instructions prepared on the walls and ceilings, and polished with trowel and squeegees, including service scaffolding as well as any other obligation to completely finish the plastering perfectly.

5.4. Patching in Gypsum Sufaces

Patching on gypsum walls and ceilings, on previously plastered and leveled surfaces:

- patching will be done with ready material in dry condition, which is mixed with water according to the instructions of the product itself;
- including service scaffolding as well as any other obligation to completely finish plastering perfectly.

6. Floor Layers

6.1. Soil and Gravel Layer

6.1.1. Well Compacted Soil Layer

It results from on-site excavations or off-site transport, arranged in several layers up to the height.

6.1.2. Gravel Coating and Filling

Gravel layer and filling on the well-compacted terrain before, with river gravel without clay composition and with height according to the instructions in the project, as well as any other obligation to finish the work.

6.2. Floors

6.2.1. Lightweight Concrete

Technological or leveling layer (foam concrete), formed of thin layers, including any other obligation for finishing work in a regular manner.

6.2.2. Cement Glazed Floors

With a minimum thickness of 5 cm, on the defined surfaces. Applied with cement mortar m-1: 2, polished to the surface with trowel and cement powder, including any other obligation for the complete finishing of the floor perfectly.

6.2.3. Geotextile Artificial Blanket Protective Layer

Set including any other obligation for the complete finishing of the layer perfectly.

6.2.4. Floors with Stoneware Tiles

The gluing of the tiles is done with a layer of cough, cutting with tile cutters and embedding inlays in the wall,placement in the work in a completely compressed manner between them and plastered with cement paint in the joints washing and cleaning,

6.2.5. Engineering wood parquet floor (Gym)

The floor must meet the norms for sports and gymnastic facilities. The floor surface should be paved with oak parquet (engineering wood).

This layer is fixed on pressed sawdust tiles (1x1m and 15mm thick).

The layer for each parquet tile should not exceed the size 1x1m.

The surface should be rough and on it, one or two coats of varnish will be applied.

All channels and protrusions of the sawdust tile should be well glued to each other, so as not to create protruding surfaces in the parquet layer.

Before applying the last coat of varnish, the surface should be polished, polished and then cleaned.

Enamel varnish should be applied twice on the paved surface and treated.

The change in surface leveling should be a maximum of 2 mm for 10 m length.

Conditions of sub-structures:

- Last layer of concrete at least 15 cm strong (B200)
- Waterproofing (at least with two layers of bitumen)
- Thermal insulation (polystyrene plate 5 cm)
- PVC plastic (at least 0.02 mm strong)
- Floor composition (at least 5 cm strong)

Construction of the rocking base:

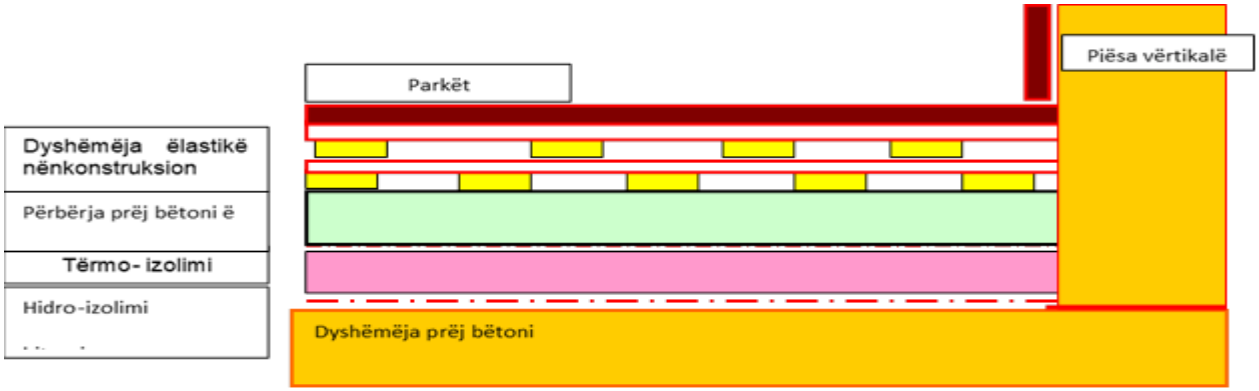
Parts of the rocking base: width = 4-10cm; height = 20-40 mm; distance = approximately 30 cm.

Edges of the lower part of the fluctuating soil are made of planks with a thickness of 18-23 mm, width = 10-14 cm, height 18-23mm, distance = close.30 cm.

The curbs of the upper part of the shaky ground are made of frames of shaky earth boards 18-23 mm, boards 10-14 cm wide; thickness 18-23 mm, distance = close. 30 cm.

Basic planks for the floor (width = 10-15 cm; thickness = 18-23 mm; distance = max. 5 cm distance between the wooden floor.

Supply and installation of hardwood flooring, thickness = 12mm; width = 30 cm; floor width = 5 cm above the existing floor the surface is glued (fastened and fixed in channels with steel screws) is non-slip and paved twice with enamel varnish.



6.2.6. Laminate flooring (Preschool classroom)

Laminate flooring t = 12mm will be realized in the classroom environment for preschool. The color of the parquet will be determined by the architect in the project. The laminate will be of the first quality verified in the packaging.

6.3. Staircase Coatings (with Granil)

First quality of the selected type, including:

- The gluing of the tiles is done with a layer of polished cement 2cm
- Cutting with tile cutters and embedding the inlays in the wall, placing in the work in a completely compressed way between them and plastered with cement paint in the joints
- Washing and cleaning
- Proposed samples must be submitted to the Site Supervisor for prior approval, as well as in consultation with the architect..

6.4. Mouldings

6.4.1. Wood moulding with height 10 cm and thickness 1 cm

Placed on the work with special glue, including plastering and cleaning, as well as any other obligation for the complete completion of the work perfectly.

6.4.1. Granil moulding with height 10 cm and thickness 1 cm

Placed in mortar work with dosage per m^2: washed sand m3 0.005, cement (m-400) 4 kg and water,including plastering, cleaning and any other obligation to complete the work perfectly.

7. Wall Coverings

7.1. Coatings with ceramic tiles in sanitary facilities

Coated ceramic tiles of the first quality, supplied and placed in the work on a previously prepared surface, glued with mortar with dosage in m2: washed sand 0,005 m3, cement (m-400) 4 kg, plastering with white cement, thorough cleaning, shearing scaffolding as well as any other obligation to finish the dressing perfectly.

The tiles in the corner, if necessary, will be cut with suitable tile cutters, will be drilled with drills and will not be interrupted where there is sanitary equipment.

8. Terraces and Waterproofing

The terrace of the building is divided into 3 areas: 1-area above the school; 2- terrace area above the metal structure of the plaster; 3-areas of small terraces (stair coverings). In each of them the layers are given with the respective detail.

8.1. Waterproofing of Terraces

- Polished cement t=2 cm
- Evaporating layer with aluminum barrier
- PVC waterproofing layer t=5mm, plus metal fixing accessories, on previously leveled surface, including vertical parts, with all angles and corners well rounded before, treated with 100% adhesive.
- PVC adhesive layer, applied according to the details given in V.T., including the vertical part, with all corners and corners well rounded before, with 100% adhesive.
- Thermal insulating layer with thickness t=12cm, with stone wool 175kg/m^3, according to the instructions in the project, put it in the work forming a unique surface.
- Protective layer with artificial geotextile blanket, which is placed on the thermal insulation layer of stone wool
- Concrete with electro-welded grill t=4cm
- Placement of gutters in rain wells;

- Everything else needed for the completion and realization of the terrace in a perfect way

8.2. Vertical Gutters

Vertical tubular gutter with sheet metal xingat, with a minimum diameter of 10 cm and a thickness of 0.8 mm. In each gutter should be collected the waters of a terrace surface not larger than 80 m2.
Gutters should be placed on the upper part of the building by means of the corresponding corrugated iron collars, fixed on the walls every 2 m.
Terrace water should be collected through a plate of corrugated sheet metal, lined with two bitumen membranes placed in the flame, with a thickness of 4 mm, placed diagonally between the masonry and the parapet, with a slope of 1%, according to the project instructions.

8.3. Waterproofing of floors

Waterproofing layer for the floor in the basement, consisting of a layer of guaino 4mm plus primer is placed up to a height of 20 cm above the unplastered walls of the premises. The samples will be presented to the Site Supervisor for prior approval. Any other obligation and mastery for the completion of the work in a perfect way.

8.4. Waterproofing of sanitary joints

Hydro-insulation layer for all floors of sanitary joints, consisting of a 4mm guaino layer plus primer. Samples of the proposed guaino and adhesive will be submitted to the Site Supervisor for prior approval. Any other obligation and craftsmanship to finish the job in a perfect way.

9. Doors – Windows

9.1. Wood Windows

Placement of windows in the work, with color and corresponding dimensions according to V.T. Their selection will be made in consultation with the architect, must be determined by the contractor, consisting of:

- Wooden case, acoustic gasket; sound reduction index >40 dB; case with air permeability class 4

-good thermal insulation;

- Double glazing; laminated glass with 9 mm air intercarpet ; total width 27 mm

- Collect door hinges with weight bearing depending on the weight of the flap calculated for 200'000 openings, counters;

-With open flaps

Includes repair of patches, as well as any other equipment for finishing work perfectly All masonry work as well as any other equipment for finishing work perfectly. Samples of the proposed items will be presented to the site supervisor for prior approval in consultation with the architect.

9.2. Wood Doors

Supply and installation of interior doors with a shutter, in colors and dimensions specified in the project. Their selection will be made in consultation with the architect, must be determined by the contractor, consisting of: -a contract on stained pine wood (3 cm thick) impregnated, with dimensions according to the width of the wall (which increases as a result of different wall coverings), which will be fixed to the walls with suitable iron bandages (every 1 m) and with cement mortar.-a wooden canvas, which will be placed in the contracture after plastering and painting works. According to the drawing of the door in V.T., the frame will be equipped with hinges and locks suitable according to the type of door, etc.

10. Steel Works

10.1. Steel Parapets for Stairs

Realized: pre-prepared

- Scales of service as well as any other obligation and work for finishing the work in a perfect way. Samples must be presented to the Construction Site Supervisor before fixing.

10.2. Stainless steel constructions for the outer ramp

Painting with some coats of synthetic oil paint (0.2 kg/m2) on their surfaces, until the work is completed perfectly.

- Service scaffolding as well as any other obligations and work for finishing the work perfectly;

- Any work and crafts needed for the complete completion of the work in a perfect way.

- Samples must be presented in advance to the site supervisor.

11. Painting Works

11.1. Painting with hydro-plastic paint for walls

Plastering and polishing the plaster with synthetic putty, where necessary, to have perfectly painted surfaces.

Paper protection of surfaces that will not be painted (door and window profiles, plinths, floors, etc.).

A single layer suitable primer, applied with a brush on the walls. Three layers painting of the walls with white or colored hydro-plastic paint, until the work is completed perfectly.

Any work and crafts needed for the complete completion of the work in a perfect way. Samples must be presented in advance to the site supervisor.

11.2. Painting on steel surfaces with oil paint

A single coat of primer or anti-rust paint is required in advance, with a dosage of 0.08 kg per m2.

- Painting with some coats of synthetic oil paint (0.2kg/m2) until the end of the work perfectly.
- Any work and crafts needed for the complete completion of the work in a perfect way.
- Champs must be presented in advance to the site supervisor.

12. Arrangement and Landscape Works

Casting soil filling and flattening;

Filling with and vegetable;

Grass planting

For the realization of this process any other obligation to completely end the process perfectly

Hydajet TOTA

Legal Representative of

HT Construction (High Tech Construction) ltd

Lic. N.6886/3