

Section VI
TECHNICAL SPECIFICATIONS

REFURBISHMENT WORKS OF THE SCHOOL FOR SECONDARY AND HIGHER
VOCATIONAL EDUCATION "SERGIJE STANIĆ", PODGORICA

Section 1: Project description

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List of abbreviations

Abbreviation	Full Reference
ACAD	Auto-CAD- computer aided design
AHD	Average Haul Distance
BoQ	Bill of Quantities
CA	Contracting Authority
CB	Construction Book (evidence of work performed)
Cca	Circa (approximately)
CE	Conformity European
CEDIS	Montenegrin Electricity Distribution System
CGES	Montenegrin Electricity Transmission System
CSNU	Central Supervisory and Control System
Day	Calendar Day
DD	Detailed Design
DEA	Diesel electric generator
DIN	German Standard (i.e Deutsches Institut fur Normung)
DN	Diameter Nominal
DNP	Defects Notification Period
EMP	Environmental Management Plan
EN	European Norms
ENEC	European Norms Electrical Certification
EU	European Union
FFL	Final floor level
FP	Fire Protection
GC	General Conditions
GF	Ground floor
GRO	Main distribution cabinet
GSIP	Main Bus for Potential Equalization

h	hour
H&S	Health and Safety
H&S&E	Health, Safety and Environment
HAVC	Heat, Air Ventilation, and Cooling
HDPE	High density extruded polyethylene
ICT	Information and Communications Technologies
IEC	International Electro technical Commission
ISO	International Organization for Standardization
JUS	Yugoslavian Standard
kg	kilogram
km	kilometer
KRK	Cable Connection
kW	kilowatt (1000 watts)
l	liter
LAN	Local Area Network
LED	Light-emitting Diode
L.S.	lump sum
m	meter
m ²	square meter
m ³	cubic meter
m/d	man-day
MCB	Main Circuit Board
Misc.	Miscellaneous
mm	millimeter
MS	Method Statement
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
PAC	Provisional Acceptance Certificate

PCT	Perforated Cable Tray
PE	Polyethylene
PM	Project Manager
PP	Polypropylene
pcs	pieces
PVC	Polyvinyl Chloride
RAL	Coloring system (Reichs-Ausschul3 fUr Lieferbedingungen und Gtitesicherung)
RC	Reinforced Concrete
MNE	Montenegro
TA	Technical Assistant
TMP	Traffic Management Plan
TS	Technical Specifications
TUV	Technischer Uberwachungsverein (Technical Inspection Association)

Section 1. - Project Description

The School for Secondary and Higher Vocational Education "Sergije Stanić" is located next to the Boulevard Crnogorskih Serdara and Street Kralja Nikola Street in Podgorica. Within the school complex there are two buildings (building A and building B).

Pedestrian access to the schools is provided from Street Kralja Nikola and Bulevar Crnogorskih Serdara. Road access to the facility is provided through existing access road that has connection to Bulevar Crnogorskih Serdara and parking is provided behind the buildings.

The building "A" has it has variable storeys ground floor, ground floor and first floor, with total gross area of 2.959,92 m². The building is divided into functional units, administration, classrooms, sanitary facilities and the sport block.

The building "B" has also variable storeys: ground floor, ground and first floor, and total gross area of 1.117,14m². The building is divided into functional units: administration (offices for employees), classrooms, toilets as well as the amphitheater and practice room, which are covered by another design and are not subject of this.

Building "A"

The administrative block consisting of the office of the director, assistant director, school secretary, teacher lounge and toilets for employees, 13 classrooms, toilets for students, sports hall with dressing rooms, storage for sport equipment, storages, changing rooms, boiler room and other technical premises are placed on the ground floor. On the first floor of the building there are 15 classrooms, 5 offices, archive, laundry room and common toilets for employees and students. Vertical communications are located in the central part of the building.

The building structure is in good condition without visible cracks. Floor slabs are reinforced concrete moonlit and ribbed type "Avramenko" supported on reinforced concrete beams and in both directions and partially on concrete tie-beam of masonry walls. The ceilings are made of reeds covered with a layer of mortar, only with mortar, wooden slats, while in some rooms a suspended ceiling is made of plasterboard or panel of mineralized sawdust type „durisol“. The flooring is parquet, terrazzo partially covered with laminate, vinflex/linoleum and ceramic tiles and in some technical rooms, the flooring is concrete. The walls are coated with a semi-dispersive paint, ceramics tiles, wooden slats and in some premises with oil-based paint up to height 170 cm.

Facade and interior windows and doors are mostly made of wood and black hardware that has been deteriorated and not fully functional, and fewer pieces has been replaced.

The entire facade cladding is made with cement mortar coated with waterproof paint without thermal insulation. The existing roof is a flat impassable roof with a final layer of waterproofing bituminous membrane. A part of the roof surfaces was been renovated in the previous period (between axes 5-12 and axes A'-D'). A part of the roof of approx. 75 m² is covered with trapezoidal sheet metal.

The plumbing and sewage installations are dilapidated and obsolete and need to be replaced, while the electrical installations are in good condition except the lighting, which needs to be replaced. Heating in

the building is provided by pellet boilers and cast-iron radiators. The heating installation is fully functional except for a certain number of valves, on the radiators and pipe network, which need to be replaced.

Planned State

In accordance with the Terms of Reference and the requirements of the User, the facility premises have been reorganized.

The ground floor was reorganized in way that the area of the meeting room is increased, the buffet with a kitchenette is moved to the administrative block, while an additional classroom is planned in its place. In addition, the library is displaced in the building "2B". Toilets for students are reorganized and a new toilet for the disabled is designed. Due the difference of levels of the ground slab, in the part of the administrative block, an additional slab is designed. The shop in the hallway is dislocated to the room next to the sports hall (No. 40), what eliminates the crowding at the entrance. In the atrium No.1, the existing toilet for the disabled is demolished and the metal stairs are dismantled. In all atriums, it is planned to demolish the concrete surfaces and green the entire surface of the atrium.

The offices of the director and secretary of the school have been dislocated from the ground to the first floor. Also, one of the existing offices on the first floor has been expanded and converted into a meeting room. The existing shared toilets have been reorganized, providing separate toilets for employees and students. Due to level difference of the floor slabs in the room No. 1-hall with hallway and room No. 24-office, the new metal staircase has been design.

For all rooms separately, their purpose, as well as the finishes of floors, walls and ceilings, their volume and clear height are given in the drawings.

Technical Specifications

br. prostorje room no.	namjena prostorje / room purpose	površina / area (m²)	svjetla visina / room height (m)	obrada podova, zidova, plafona / floor, wall and ceiling finish			obim prostora / room scope
Osnova prizemlja / Ground floor plan				pod / floor	zid / wall	plafon / ceiling	
1a	VJETROBRAN / WINDBREAK ROOM	11.36	3.69	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	14.61
1b	HOL / HALL	142.87	3.69	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	59.68
2	HODNIK / HALLWAY	23.27	3.66-3.90	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	25.18
3	HODNIK / HALLWAY	66.54	3.68	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	61.79
4	KABINET PSIHOLOGIJE I SOCIOLOGIJE/ PSYCHOLOGY & SOCIOLOGY ED. CLASSROOM	34.05	3.69	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	24.30
5	KABINET HEMJE I BIOLOGIJE / CHEMISTRY AND BIOLOGY ED. CLASSROOM	33.74	3.71	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	24.19
6	KABINET HEMJE I BIOLOGIJE / CHEMISTRY AND BIOLOGY ED. CLASSROOM	34.38	3.71	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	24.43
7	KABINET ISTORIJE I GEOGRAFIJE/ HISTORY AND GEOGRAPHY ED. CLASSROOM	33.96	3.71	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	24.30
8	KABINET / CLASSROOM	35.84	3.70	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	25.32
9	KABINET EKONOMSKO- TURISTIČKI / ECONOMY - TOURISM ED. CLASSROOM	36.35	3.70	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	25.18
10	KABINET EKONOMSKO- TURISTIČKI / ECONOMY - TOURISM ED. CLASSROOM	36.35	3.69	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	25.18
11	KABINET EKONOMSKO- TURISTIČKI / ECONOMY - TOURISM ED. CLASSROOM	36.72	3.69	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	25.28
12	OSTAVA / STORAGE	16.77	2.73	pvc	disperzija / water dispersion-based paint	disperzija / water dispersion-based paint	19.11
13	STEPENIŠTE/STAIRCASE	4.51	3.69	granitna keramika / granite tiles	disperzija / water dispersion-based paint	disperzija / water dispersion-based paint	8.35
14	POMOĆNIK DIREKTORA/DEPUTY DIRECTOR	12.92	3.68	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	15.20
15	ZBORNICA / TEACHERS LOUNGE	71.42	3.64	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	44.36
16	BIFE/BUFFET	18.35	3.90	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	20.85
17	TOALETI ZA ZAPOSLENE/ TOILETS FOR EMPLOYEES	8.98	2.57	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	19.07
18	PREDPROSTOR/ANTEROOM	2.92	3.06	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	6.91
19	TOALETI/TOILETS	14.05	3.06	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	15
20	TOALETI/TOILETS	13.97	3.06	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	14.96
21	TOALET ZA LICA SMANJENE POKRETLIVOSTI /ACCESSIBLE TOILET	4.35	3.06	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	8.36
22a	SVLAČONICA/DRESSING ROOM	8.68	3.10	keramika / tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	12.19
22b	SVLAČONICA/DRESSING ROOM	8.68	3.10	keramika / tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	12.01
23	HODNIK/HALLWAY	128.60	3.67	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	111.69
24	KABINET RESTORATRSTVA/RESTAURANT ED. CLASSROOM	57.5	3.65	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	30.38
25	KABINET RESTORATRSTVA/RESTAURANT ED. CLASSROOM	57.5	3.65	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	30.38
26	FISKULTURNA SALA/SPORTS HALL	393.34	6.92	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	89.39
27	KABINET TURIZMA/TOURISM ED. CLASSROOM	37.73	3.22-3.65	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	25.47
28	KABINET/CLASSROOM	37.73	3.22-3.65	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	25.47
29	KABINET KULINARSTVA/ CULINARY ED. CLASSROOM	57.5	3.66	kiselootporna keramika acid resistant tiles	keramika / tiles	spušteni plafon / suspended ceiling	30.38
30	KABINET KULINARSTVA/ CULINARY ED. CLASSROOM	57.5	3.64	kiselootporna keramika/ acid resistant tiles	keramika / tiles	spušteni plafon / suspended ceiling	30.38
31	OSTAVA/STORAGE	4.91	3.64	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	8.8
32	SVLAČONICA/DRESSING ROOM	2.85	3.63	keramika / tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	6.92
33	OSTAVA / STORAGE	6.79	2.73	pvc	disperzija / water dispersion-based paint	disperzija / water dispersion-based paint	11.4
34	KOTLARNA/BOILER ROOM	9.77	2.62-3.13	betonska ploča / concrete slab	disperzija / water dispersion-based paint	disperzija / water dispersion-based paint	12.72
35	HOL/HALL	14.10	2.58	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	15.4
36	HODNIK/HALLWAY	7.34	2.56	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	13.76
37	TOALETI/TOILETS	9.06	2.56	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	20.72
38	KANCELARIJA/OFFICE	7.92	2.55	pvc	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	12.88
39	SVLAČONICA/DRESSING ROOM	16.82	2.58	keramika / tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	17.02
40	PRODAVNICA/SHOP	11.06	2.57	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	14.65
41	HODNIK/HALLWAY	6.56	2.56	granitna keramika / granite tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	12.88
42	TOALETI/TOILETS	9.06	2.56	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	20.72
43	OSTAVA ZA REKVIZITE/EQUIPMENT STORAGE	5.70	2.55	keramika / tiles	disperzija / water dispersion-based paint	disperzija / water dispersion-based paint	11.48
44	SVLAČONICA/DRESSING ROOM	16.25	2.58	keramika / tiles	disperzija / water dispersion-based paint	spušteni plafon / suspended ceiling	16.94
45	OSTAVA/STORAGE	11.32	2.58	keramika / tiles	keramika / tiles	disperzija / water dispersion-based paint	14.81
46	OSTAVA ZA REKVIZITE/EQUIPMENT STORAGE	22.90	2.61	granitna keramika / granite tiles	disperzija / water dispersion-based paint	disperzija / water dispersion-based paint	19.96
47	KOTLARNA/BOILER ROOM	14.81	2.61	teraco / terazzo	disperzija / water dispersion-based paint	disperzija / water dispersion-based paint	15.43
	ATRIJUM 1/ATRIUM 1	16.70	/	betonska ploča i zelenilo/ concrete and greenery	/	/	16.61
	ATRIJUM 2/ATRIUM 2	28.25	/	betonska ploča i zelenilo/ concrete and greenery	/	/	22.46
	ATRIJUM 3/ATRIUM 3	43.21	/	betonska ploča i zelenilo/ concrete and greenery	/	/	30.89
	ATRIJUM 4/ATRIUM 4	30.10	/	betonska ploča i zelenilo/ concrete and greenery	/	/	36.81

Technical Specifications

br. prostorije room no.	namjena prostorije / room purpose	površina / area (m²)	svijetla visina / room height (m)	obrada podova, zidova, plafona / floor, wall and ceiling finish			obim prostora / room scope
	Osnova sprata / First floor plan			pod / floor	zid / wall	plafon / ceiling	
1	HOL SA HODNIKOM / HALL WITH HALLWAY	180.63	3.50	granitna keramika / granite tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	133.77
2	KANCELARIJA ZA SEKRETARA/ OFFICE FOR THE SECRETARY	10.53	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	13.03
3a	KANCELARIJA ZA DIREKTORA/ OFFICE FOR THE DIRECTOR	13.60	3.01	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	15.02
3b	SALA ZA SASTANKE / MEETING ROOM	14.23	3.01	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	15.30
4	ARHIVA / ARCHIVE	20.41	3.67	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	13.25
5	HODNIK / HALLWAY	5.62	3.01	pvc	keramika / tiles	spušteni plafon / suspended ceiling	9.61
6	TOALETI ZA ZAPOSLENE / TOILETS FOR EMPLOYEES	4.62	3.01	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	8.89
7	TOALETI / TOILETS	9.31	3.01	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	12.42
8	HODNIK / HALLWAY	4.30	3.01	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	9.72
9	TOALETI / TOILETS	10.81	3.01	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling	13.30
10	KABINET / CLASSROOM	36.63	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	25.28
11	KABINET / CLASSROOM	36.33	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	25.18
12	KABINET / CLASSROOM	36.33	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	25.19
13	KABINET / CLASSROOM	36.01	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	25.32
14	KABINET / CLASSROOM	42.49	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	27
15	KABINET / CLASSROOM	42.29	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	26.89
16	KABINET / CLASSROOM	41.84	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	26.89
17	KABINET / CLASSROOM	41.70	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	27.41
18	KABINET INFORMATIKE/ COMPUTER CLASSROOM	47.82	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	29.08
19	KABINET KNJIŽEVNOSTI/LITERATURE ED. CLASSROOM	41.80	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	26.77
20	KABINET/CLASSROOM	23.03	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	19.64
21	KABINET RAČUNARSTVA/INFORMATICS CLASSROOM	35.87	3.50	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	25.26
22	KANCELARIJA ŠEFA RAČUNOVODSTVA/ OFFICE OF HEAD OF ACCOUNTING	12.80	3.49	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	15.63
23	STEPENIŠTE / STAIRCASE	24.69		keramika / tiles	disperzija /water dispersion-based paint	disperzija /water dispersion-based paint	21.51
24	KANCELARIJA / OFFICE	27.24	3.67	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling	22.39

Building "A"	Ground Floor	I floor	Total
<i>NET area (m²)</i>	1.708,48	790,74	2.499,22
<i>GROSS area (m²)</i>	2.060,34	899,58	2.959,92

Note: Gross area is calculated without canopies and atriums.

Outside Surfaces

Design envisages cladding of the facade surfaces with thermal insulation panels d=8,0 cm, with the finishing layer made of decorative plaster in several shades in order to emphasize facade elements. The entrance portal and columns, on the south-eastern facade, will be cladded with aluminum composite panel in grey color. Also, on south-eastern façade aluminum sun-shading elements will be installed.

The facade windows and doors shall be made of polyvinyl chloride (PVC) profiles in white color, glazed with two-layers insulation glass.

Reparation of the existing roof surfaces is planned with a new ballast-type polyvinyl chloride membrane, over the previously installed thermal insulation and protective drainage and separation layers, in everything according to the details given in the drawings.

The gutter verticals are planned to be replaced and new ones made of plasticized steel sheet in the color of the facade.

Inside surfaces

All floors are planned as floating floors to prevent the transmission of impact sound.

Depending on the purpose of the rooms, the finishes of the floor are polyvinyl chloride (PVC); granite, acid-resistant or ceramic tiles, while in the technical rooms the existing floor finishes are retained. In the sports hall, a multisport system approved by the International Handball Organization (IHF), and the International Basketball Organization (FIBA) designed for sports halls, gymnasiums and school sports halls.

New interior partition walls made of ytong blocks d=10/20/30 cm are plastered on two sides. In the toilets, prefabricated partitions made of high-pressure laminate (HPL) panels with aluminum construction are foreseen, as the simplest solution for the formation, organization and maintenance of these spaces.

Depending on the purpose, the finishings of the wall are water dispersion-based paint, oil-based paint, acid-resistant or ceramic tiles.

All ceilings are suspended and made of moisture-resistant gypsum plasterboard in toilets, made of mineralized sawdust type „durisol“ in the sports hall and made of gypsum plasterboard panels in all other rooms;

Depending on the purpose of the rooms and their specific requirements, several types of internal glass walls, doors and windows are planned:

- Aluminum without thermal break, with chipboard panel coated on both sides with melamine resin impregnated decorative paper and opening 25x85cm glazed with glass type pamplex 3.3.1
- Aluminum without thermal break, glazed with glass type pamplex 3.3.1
- Aluminum without thermal break, with chipboard panel coated on both sides with melamine resin impregnated decorative paper
- Aluminum without thermal break, with aluminum sandwich filling panel d=10/20mm

The color of the profiles and fillings is RAL 7035.

Installation of handrails and new stair fence on the internal stairs.

The design envisages installation of the new equipment in the sports hall.

Installation

The replacement of the installation of water supply and sewerage, all sanitary elements, as well as the adequate acceptance and drainage of storm water from the roofs is planned. Also it is planned to replace complete electrical lighting installations as well as the necessary interventions in the switchboards.

For purposes of heating, it is planned to replace the worn-out valves on the radiators and pipe network.

A detailed description of the designed installations is given in the Main design of installation.

Building "B"

On the ground floor 10 classrooms, meeting room, 3 offices, 2 dressing rooms, storage room, workshop for janitor, toilets for employees and students, amphitheater and practice cabinet are located. On the first floor there are 3 offices.

The building structure is a combination of columns and load-bearing masonry walls. The roof girders are supported on load-bearing walls or columns. On the lower side of the roof girders, slats are installed over which a reed ceiling with plaster is placed, in some rooms covered with a suspended ceiling, and on the upper side, slats are installed on which the roof covering is mounted. The roof covering is corrugated metal sheet, except on the higher part of the building, where the roof covering is made of corrugated fiberboards. Slabs were made as reinforced concrete ribbed type "Avramenko". The flooring is parquet, terrazzo, laminate, vinflex/linoleum and ceramic tiles and in some rooms the flooring is concrete. The walls are coated with a semi-dispersive paint, oil-based paint, ceramics tiles and wooden slats.

Facade and interior windows and doors are mostly made of wood and black hardware that has been deteriorated and not fully functional, and fewer pieces has been replaced.

The entire facade cladding is made with cement mortar coated with waterproof paint without thermal insulation.

The plumbing and sewage installations in toilets are dilapidated and obsolete and need to be replaced, while the electrical installations are in solid condition except the lighting and lightning protection

installation, which needs to be replaced. Heating and cooling in the building is provided by air conditioners.

Planned State

In accordance with the Terms of Reference and the requirements of the User, the facility premises have been reorganized.

The ground floor is reorganized in way that the existing two classrooms are joined and a library is formed.

For all rooms separately, their purpose, as well as the finishes of floors, walls and ceilings, their volume and clear height are given in the drawings.

br. prostorije / room no.	namjena prostorije / room purpose	površina / area (m²)	svijetla visina / room height (m)	obrada podova, zidova, plafona / floor, wall and ceiling finish		
Osnova prizemlja / Ground floor plan				pod / floor	zid / wall	plafon / ceiling
1a	VJETROBRAN / WINDBREAK ROOM	7.52	3.10	granitna keramika / granite tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
1b	PORTIRNICA / PORTER LODGE	4.24	3.10	granitna keramika / granite tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
2	HOL / ENTRANCE HALL	24.10	3.10	granitna keramika / granite tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
3	SALA ZA SASTANKE / MEETING ROOM	23.00	3.04	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
4	KABINET STRANIH JEZIKA / FOREIGN LANGUAGE CLASSROOM	46.87	3.15	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
5	KABINET ZA TURIZAM / TOURISM EDUCATION CLASSROOM	45.72	3.19	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
6	KUHINJA / KITCHEN	45.78	3.11	keramika / tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
7	KABINET RESTORATERSTVA / RESTAURANT EDUCATION CLASSROOM	41.54	3.10	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
8	BIBLIOTEKA / LIBRARY	91.52	3.13	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
9	PREDPROSTOR / ANTEROOM	4.34	5.54	laminat / laminate	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
10	KUHINJA-OSTAVA / KITCHEN-STORAGE	7.39	3.12	keramika / tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
11	DOMAR-RADIONICA / JANITOR-WORKSHOP	22.47	3.12	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
12	SVLAČIONICA ZA KUVARE / LOCKER ROOMS FOR COOKS	10.18	3.16	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
13	KANCELARIJA / OFFICE	9.69	3.18	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
14	SVLAČIONICA ZA KONOBARE / LOCKER ROOMS FOR WAITERS	10.79	3.10	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
15	AMFITEATAR / AMPHITHEATER	159.30	4.75-5.50	parket / parquet	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
16	HODNIK / HALLWAY	9.34	4.57-5.50	laminat / laminate	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
17	KABINET ZA PRAKSU (TRGOVINA) / PRACTICE ROOM (TRADE EDUCATION)	64.38	3.70	laminat / laminate	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
18	UČIONICA / CLASSROOM	22.41	2.51	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
19	RADNI PROSTOR / WORKSHOP	10.64	2.51	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
20	UČIONICA / CLASSROOM	18.30	2.51	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
21	KANCELARIJA / OFFICE	11.53	2.51	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
22a	HODNIK / HALLWAY	21.52	2.08-2.52	granitna keramika / granite tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
22b	HODNIK / HALLWAY	71.67	3.10	granitna keramika / granite tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
23a	TOALETI / TOILETS	12.84	3.10	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling
23b	TOALETI / TOILETS	6.63	3.10	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling
23c	TOALETI / TOILETS	6.14	3.10	keramika / tiles	keramika / tiles	spušteni plafon / suspended ceiling
24	KANCELARIJA / OFFICE	12.20	3.10	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
25	KANCELARIJA / OFFICE	15.34	3.10	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
26	KABINET INFORMATIKE / INFORMATICS WORKSHOP	25.51	3.03	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
27	KABINET INFORMATIKE / INFORMATICS WORKSHOP	26.44	3.03	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling

Technical Specifications

br. prostorije / room no.	namjena prostorije / room purpose	površina / area (m²)	svjetla visina / room height (m)	obrada podova, zidova, plafona / floor, wall and ceiling finish		
Osnova sprata / First floor plan				pod / floor	zid / wall	plafon / ceiling
1	STEPENIŠTE / STAIRCASE	4.65	/	keramika / tiles	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
2	PREDPROSTOR SA / ANTEROOM ARHIVOM WITH ARCHIVE	11.49	2.46	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
3	KANCELARIJA / OFFICE	11.53	2.54	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
4	PREDPROSTOR / ANTEROOM	10.80	2.54	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
5	KANCELARIJA / OFFICE	18.54	2.54	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling
6	KANCELARIJA / OFFICE	22.41	2.54	pvc	disperzija /water dispersion-based paint	spušteni plafon / suspended ceiling

Building "B"	Ground Floor	I floor	Total
NET area (m2)	889,34	79,42	968,76
GROSS area (m2)	1.015,4	101,65	1.117,05

Outside Surfaces

Design envisages cladding of the facade surfaces with thermal insulation panels d=8,0 cm, with the finishing layer made of decorative plaster in several shades in order to emphasize facade elements.

The facade windows and doors shall be made of polyvinyl chloride (PVC) profiles with 5 Chambers, in white color, glazed with two-layers insulation glass.

Reparation of the existing roof surfaces is planned with corrugated metal sheet but only for higher part of the building., in everything according to the details given in the drawings.

The gutter verticals are planned to be replaced and new ones made of plasticized steel sheet in the color of the facade.

Inside surfaces

Depending on the purpose of the rooms, the finishes of the floor are polyvinyl chloride (PVC); granite, acid-resistant or ceramic tiles,.

Depending on the purpose, the finishings of the walls are water dispersion-based paint, oil-based paint, acid-resistant or ceramic tiles.

Section 2. General Requirements

Introduction

Under this Contract, the Contractor shall take responsibility for supply and construction/ installation of the works, all as described hereunder and presented in other contractual documentation such as Drawings, BoQ and Price Schedule.

2.1. Scope of Works

The Contractor's scope of works shall include all required activities to ensure the correct and proper realization of the refurbishment works of the School for Secondary and Higher Vocational Education "Sergije Stanić", Podgorica as defined in the contractual documents.

The works shall include but not limited to, the following:

- drafting a Programme of tasks showing the critical path for all the Works, receiving approval from the Supervisor and keeping it updated;
- receiving site from the Beneficiaries;
- setting up site and making the safe and secure to avoid accidents and damage to neighboring assets throughout the construction process until final completion;
- procurement and installation of construction site boards in accordance with the Montenegrin Law
- drafting a Health and Safety Plan and Environmental Protection Plan, receiving approval from the Supervisor and keeping it updated;
- providing temporary: electricity, water, etc. to the site for construction purposes;
- providing all relevant security for the entire construction period and displaying warning signs
- placing elements of visibility
- supplying and delivering of all materials, building and installing as to the provided in detailed drawings and these Technical Specifications;
- providing shop drawings specifically for architectural, electrical, mechanical works, and any other required, for the approval of the Supervisor;
- providing samples and attests of relevant materials, for the approval of the Supervisor prior to placing orders;
- testing, commissioning of completed work
- preparing as-built drawings, maintenance manuals and any other documentation necessary for the beneficiary to be able to operate and maintain the facilities;
- complying with all instructions received during the provisional and final acceptance (e.g., remedying of defects, etc.).

2.1.1. Regulations, Standards, Testing

During the progress of the works, all required tests shall be carried out on materials and workmanship in order to ensure compliance with these Technical Specifications.

Copies of all the test results must be delivered by the Contractor to the Supervisor immediately after testing.

2.1.2. Case of conflict

In case of conflict between the Requirements of these Technical Specifications and any other requirements, the order of preference is specified in the Contact form.

2.1.3. Methods of Testing

All tests shall be made in accordance with the standard methods prescribed by the following, in order of preference as ordered by the Supervisor.

- MEST: Montenegrin standards
- EN: European Standards
- JUS: Yugoslav standards
- DIN: Deutsches Institut für Normung (Abbreviation: DIN).

In addition to the above, standard specifications or test methods of other bodies may be referred to this specification, or test methods may be described where no acceptable standard methods exist.

2.1.4. Cost of Testing

The cost of all provision of samples and testing of materials and workmanship undertaken to ensure compliance with the technical specifications shall be at the Contractor expenses.

The Contractor shall provide all necessary temporary works in connection with the test, and shall remove the same on successful completion of the test. All tests shall be done in the presence of the Supervisor' and the results of such tests shall be signed by the Contractor and handed to the Supervisor' who shall prepare the required test reports.

All equipment, labor, materials and water necessary for the carrying out of these tests to the complete satisfaction of the Supervisor' shall be provided by the Contractor at his own expense. Should any test fail, the Contractor shall carry out further tests all as described above until such tests meet with the requirements contained herein. All such tests and retests shall be at the expense of the Contractor.

2.1.5. Additional Testing

The Supervisor shall have the right to take any samples and to order any additional tests on materials or workmanship supplied by the Contractor if the Supervisor has reasonable doubt as to their quality.

2.1.6. Sampling

Where it is required that the Contractor submits samples of materials to the Supervisor for approval prior to their use in the works, the use of these materials without the Supervisor's

written approval shall constitute default on the part of the Contractor for the consequences of which default he shall be liable. All samples shall be submitted in sufficient time for proper testing.

Same applies to testing of finishing materials for internal as well as external use and installations.

2.2. Performance Specifications

All materials, workmanship, and tests shall comply with Standards and Codes of the State Authorities, Contracting Authority and the Supervisor.

It shall be the responsibility of the Contractor to include all works necessary to ensure the intended performance of the works in all respects. The sole responsibility rests with the Contractor to produce work which conforms in quality and accuracy of detail, to the Contracting Authority Technical Specifications, Main design and other relevant documents.

The Contractor must establish a quality control system and provide experienced execution and quality control personnel, together with all transports, instruments and equipment, to ensure adequate supervision and positive control of the Works at all times.

2.3. Approval and Instruction by the Supervisor

All requests for instruction, approval of documents and drawings should be submitted to the Supervisor.

The Supervisor is the only actor who can give instruction, direction or approval to the Contractor. The Supervisor will supervise the works and give instructions according to Law on Planning and Construction these TS and Contract.

Approvals, instructions or directions by the Supervisor shall not relieve the Contractor from its liabilities and responsibilities under the Contract.

2.4. Contractor drawings, As-built Design and Operation and Maintenance Manuals

Contractor shall prepare any required shop drawings and reflect the same on the as-built drawings.

The As-built Design/Drawings and Operation and Maintenance Manuals shall be prepared in English and Montenegrin languages in 3 (three) hard copies and digital format. All documents must be approved by the Supervisor on behalf of the Contracting Authority.

The Contractor shall submit to the Supervisor, all such documentation as well as all warranties and/or guarantees and operation manuals for the installed plant and equipment, all in three copies and in electronic format.

This item shall be paid as a lump sum.

2.5. *The Contractor's Control and Documentation*

2.5.1. *General*

The language of the contract is English.

The documents, which are to be presented to state authorities (for the purpose of issuing permits, an inspection, etc.) will be, in addition to English, also in Montenegrin.

When submitted as electronic files, the documents shall be compatible with following formats: Adobe Acrobat (.pdf), MS Word (.docx), MS Excel (.xlsx), Auto Cad (.dwg), MS Project (.mpp).

During the entire period of implementation (execution of works and DNP) the Contractor is obliged to act in line with the Contract and its addendums (if applicable), all Laws, and Rulebooks and Standards valid at the time of implementation of the Contract.

Laws and regulations include, but are not limited to Law on Spatial Planning and Construction of Structures, Law on Occupational Health and Safety, Fire Protection regulation, etc.

The Contractor shall be liable to provide the Supervisor with due documentation as per local Regulations. The Contractor shall prepare documentation, all according to Rulebook on the manner of preparation and content of the construction log and measurement book ("Official Gazette of Montenegro", No. 068/18 of 10 October 2018).

During the Contract period, the Contractor shall, to the level of Supervisor satisfaction, keep all necessary documents in office on site. As well the Contractor shall present regularly that the Works comply with the Technical Specifications stipulated in the Contract or approved during the Contract implementation period. Consequently, based on the approved QAS and the CPs, the Contractor shall during the execution of the works carry out and document the quality control and its compliance with the stipulated Specifications.

The Supervisor will control all documents prepared by the Contractor in order to ensure that all documentation is prepared in line with the Contract and Montenegrin legislation.

2.5.2. *Work Program*

The Work Program presented by the Contractor shall consist of a detailed schedule of all construction works and phases. Once approved by the Supervisor, the Work Program shall be binding for the Contractor.

The Contractor shall present a Work Schedule for execution of the works with distribution of resources and manpower, including volume of works, number of workers, interaction with different participants in the process, time limit for execution and sequence of the works to the Supervisor for approval according to this Contract.

Pursuant to the requirements, the Work Program to be submitted by the Contractor shall show the planned monthly rates of progress between the program dates for commencement and

completion of each major item or work for the various stages of construction, in accordance with the Conditions of Contract.

The Work Program shall take into account climatic conditions and completion of critical components by the Contractor or other contractors (if any), supply services conditions and other conditions, to ensure the completion of the works in accordance with the Contract.

The Contractor shall not be permitted to commence any construction work on that part of the works until the Supervisor has no objection to the method statements, drawings and calculations. Sufficient time for approval of drawings materials and method statements must be allowed for in the Work Program for each component.

The Contractor shall allow in its Program a reasonable period for work to be carried out by Public Utility Services, Authorities and the Beneficiary where necessary. The Beneficiary will provide all necessary assistance in liaising with such Authorities.

The Contractor shall also allow in its Program sufficient time required for Provisional Acceptance as stipulated in the Contract.

2.5.3. Monthly Progress Report

During of the execution of the Contract, the Contractor shall follow the progress of activities relative to the time schedule and shall submit to the Supervisor Monthly reports for the results of its activities, conforming to the following requirements:

- The Report to be provided to the Supervisor in 3 (three) hardcopies in Montenegrin and 3 (three) in English well as digitally (on CD enclosed to the Report);
- Diagrams with detailed progress description, Contractor's documents, delivery, construction works, assembly and tests;
- Digital photos (on CD enclosed to the Report);
- Linear chart (schedules) for the current Stage, showing the actual and the planned progress;
- Report, reflecting all considerable differences from the construction program, and if necessary, explanation for the proposed steps to be undertaken for the completion of the approved program;
- Statistics on safety and environment protection;
- Financial Statement (Cash flow);

When actual work progress differs from that shown in the Construction Program, the Contractor shall submit an updated schedule to the Supervisor.

Processing of the Interim Payment Certificate (IPC) is conditioned with completed and approved Progress Report.

2.5.4. Site Acceptance and Defect Liability Period

Before Provisional Acceptance, the Contractor shall in co-operation with the Supervisor finally check all documentation which has been requested and has been presented.

The Contractor shall present Tests on Completion copies of the complete documentation.

The Contractor's remedial work after Provisional Acceptance is subject to the same control conditions as the work before Provisional Acceptance. Subsequent control documentation shall be handed over to the Contracting Authority before expiry of the Defects Liability Period.

Defects Liability Period (DLP) is 24 months following the issuance of provisional acceptance by the Supervisor. DLP can be extended by the order of the Supervisor should any works activity experiences significant failure, during DLP. The DLP can be extended for that particular work or entire works, as determined by the Supervisor.

The Original documentation in the control file shall be kept with the Contractor for at least 7 (seven) years after the Final Acceptance.

2.5.5. Right of Access and Audit

The Contracting Authority shall be guaranteed unlimited access at any time to all documents and quality assurance documentation associated with the Contract. This also includes the same unlimited access to all production and manufacturing facilities.

When the Contracting Authority wants access to suppliers, manufacturers or sub-Contractors, the Supervisor will give due notice to the Contractor, whereby the time and purpose of the visit will be specified with the agreement of all parties involved.

Section 3 - General Works Specifications

3.1. General

The Contractor must be fully acquainted with all details of the provided design documentation, as well as with all local regulations, local standards (MEST), common practice of trade and circumstances for their execution. Nevertheless, it is understood that, whenever local regulations, local standards (MEST), or any common practice of trade, are subject to any interpretation, clarification, ambiguity, or dispute, a ruling by the Supervisor will prevail, always provided that such ruling will be fully in compliance with and will be based on the subject local regulations, local standards (MEST), as well as in accordance with common practice of trade, and any such ruling by the Supervisors and subsequent instruction in that respect, will not constitute any ground for variation order and/or any additional payment.

Communication between the Contractor and the Contract Authority and/or Beneficiary, during the works will be carried out exclusively through the Supervisor. The Contract Authority is responsible for the design.

All works must be carried out precisely and professionally. Prior to application, the Supervisor must examine all material and all his comments referring to material and quality of work will be obligatory for the Contractor. The agreed prices include all fully completed works and final products ready for use.

ICS number	Standard number	Year	Title
03.120.10	MEST EN ISO 9000:2016	2016	Quality management system -Fundamentals and vocabulary
	MEST EN ISO 9001:2016	2016	Quality management systems-Requirements
	MEST EN ISO 9004:2018	2018	Quality management - Quality of an organization - Guidance to achieve sustained success
	MEST EN ISO 10002:2009	2019	Quality management systems - Guidelines for the application of ISO 9001:2015
	MEST EN ISO 10002:2009	2009	Quality management - Customer Satisfaction-Guidelines for complaints handling in organizations
	MEST EN ISO 10005:2009	2009	Quality management systems - Guidelines for quality plans

The Contractor will be responsible for any and all damages caused by the Contractor during any works, to any third party, structure, main building or adjacent buildings, and any and all repair works and compensations of any kind will be at the Contractor's expense.

Prior to the commencement of the works, and also in the course of the execution of every work item, the Contractor will ask the Supervisor for any explanations and clarifications required, therefore, the Contractor will solely bear full material responsibility for all works not completed in accordance with the concept and details of this specifications.

The Contractor will be responsible to keep records on the progress of works in the measurement book and have it controlled and verified by the Supervisor.

Upon the completion of the works the Contractor will remove from the building site and other used areas all its tools, machinery, surplus material, etc. so as to have the site nearly arranged as defined in the investment technical documentation, and all other areas restored in same condition as before the construction.

All construction works must be carried out under the conditions and in the manner prescribed by Law on Spatial Planning and Construction of Structures.

For all works, applicable MNE regulations and standards shall prevail.

3.2. Technical Standards and Regulations

In accordance to these Technical Requirements, the Contractor shall ensure that its performance incorporates the following key principles:

- For all required works and services specified in this Tender Dossier, the relevant MNE standards and codes of practice shall apply. In any case, if Montenegrin standards are more strict or dominant, they shall apply to replace other standards given or not in other parts of this document.
- For works and services where no relevant Montenegrin standards or codes of practice exist, the latest European Standards and code of practice shall be applied.
- The proposed application of other standards and code of practice for certain works and/or services shall be such as to ensure equal or higher than specified quality and safety of works, and to facilitate operation, inspection, maintenance, repairs, lubrication and similar operations.
- In any case, National standards and code of practice have to be used for each service and work, accompanied with explanations, to demonstrate to the agreement of the Supervisor that application of these standards and code of practice shall give required quality, safety, functionality and durability of the completed works.
- The applicable version of any standard shall be that valid 28 days prior to the latest date for submission of tenders.

3.3. Matters Not Covered by the Standards

Any materials and workmanship not fully specified herein or covered by the Standards, Codes or Manuals shall be of such type and quality so as to produce a required quality of work. In such circumstance, the Supervisor shall determine whether all or any of the materials offered or delivered to the site are suitable for use in the Works and the Supervisor's decision in this respect shall be final and conclusive.

3.4. Method Statements

The Contractor shall provide, in writing, a description of the arrangements and methods it intends to apply for the execution of the Works.

Method Statements (MS) shall show in detail the methods proposed by the Contractor for carrying out the principal activities of construction in full safety. In particular, the Contractor shall indicate the resources (plant, personnel, materials) to be allocated, timing and sequencing, emergency/contingency measures, and any other information required to clearly detail the proposed methods. All necessary health and safety and environmental measures required shall be clearly indicated.

This will be supported by calculations for temporary works for supporting excavated faces and shuttering of concrete. Flowcharts, sketches and drawings shall be included if necessary.

Proposed MS will be submitted to the Supervisor for approval. The Supervisor will review and provide its comments within 10 days. The Contractor shall make final corrections (if any) and submit it them to the Supervisor for final approval 15 days before the commencement of relevant work.

Written agreement shall be obtained before any work is commenced.

3.5. Facilities for Contractor's and Supervisor's personnel

3.5.1. Temporary Buildings, Contractor Office, storage and any other facility

The Contractor shall establish his construction offices, storages and temporary toilet on the site. The exact location of these facilities and the details of the same shall be approved beforehand by the Supervisor.

Prior to starting with construction works, the Contractor shall also move all constructional plant and personnel to the site. On completion of the work and after receiving approval in writing from the Supervisor, all constructional plant, buildings, fencing and other temporary structures shall be removed and the camp site shall be restored to its original condition and left neat and tidy.

The site office shall be a temporary site facility, furnished, equipped and serviced ready for occupation and use within 14 days of the Date of Commencement of the Works.

Weather resistance and thermal insulation shall be according to the specification appropriate to the local conditions with heating and cooling system that will keep the ambient temperature within the office space between min 19 and max 21 degrees. The offices shall be connected to a main electricity supply.

The Contractor shall pay all charges in connection with utilities. Where a main electricity supply is not available, and subject to the approval of the Supervisor, the Contractor shall supply a "demand" type generator capable of running 24 hours per day, if required, without causing any undue noise, interference or disturbance to surrounding residents or the Supervisor and his site staff.

3.5.2. Offices and other requirements for the Supervisor

Contractor shall provide, at a location within the site compound, office accommodation of a minimum of 12 m² for the sole use of the Supervisor and his representatives. The accommodation shall be subject to the Supervisor's approval. The offices, all fully equipped with necessary furniture, shall include, as a minimum:

- Site office, separate from Contractor's office, (minimum area 12 m²),
- Site office furniture including (minimum), one working desk with drawers, along with two chairs, one meeting table 2,50x1,20m along with four chairs,
- Site office equipment including (minimum), one electric heater/AC unit,
- Internet provision

A 220-volt electricity supply shall be connected; minimum one power point per 5 m², adequate strip lighting, electric heating, and air conditioning. Office shall be covered with heavy grade linoleum and blinds to all windows.

The office accommodation should be available to the Supervisor until 4 weeks after substantial completion of the Contract when they are to be removed from the site and the area reinstated. The Supervisor may extend this period if necessary.

All premises provided for the use of the Supervisor and his staff shall be properly cleaned and maintained daily. If any item of equipment requires servicing or repair an equivalent replacement must be provided as soon as possible by the Contractor.

The layout of all office facility for the Supervisor and Contractor shall be submitted to the Supervisor for approval.

This item shall be paid as a lump sum.

3.5.3. Sanitary Arrangements and Waste Disposal

The Contractor shall provide adequate facilities, as required to meet the applicable statutory provision, for use of his laborers on the Site.

3.5.4. Faulty Work

Any work which fails to comply with these Specifications shall be rejected and the Contractor shall, make good any defects, as directed by and to the satisfaction of the Supervisor.

3.5.5. Site Preparation

The Contractor shall confine his operations within the allocated Site, or such other areas of land as may be agreed between the Supervisor and Contractor.

The Contractor shall maintain the Site in a clean, tidy and safe condition during the period of construction and handover. The Contractor shall remove any disused materials and other debris arising in connection with the Works from the Site as it arises. The Sites shall not be taken over until such material has been removed.

Any materials so deposited shall be removed at the earliest practical opportunity.

The Contractor must establish and maintain a security fence all around the Construction Site throughout the entire work period. The Site must be guarded and signed in order to keep unauthorized persons away from the Site.

The Contractor must submit for approval a Site layout plan showing stockyard, position of protective fence, offices etc.

3.6. Existing and site use utility services

3.6.1. Existing underground cables, conduits and installations

No warranty is given as to the accuracy or completeness of the information on existing underground cables, conduits and installations included in the Contract. The Contractor shall consult all relevant authorities and owners of services (CEDIS, CGES, WSC, telecommunication companies, etc.) before commencing any excavations and shall satisfy himself as to the exact position of existing cables, conduits and installations which affect or may be affected by the Works. If any service is found to exist, but is not as indicated in the Contract, then the Contractor shall at once give written notification to the Supervisor.

The Contractor shall record the position of all located existing on drawings, a copy of which shall be made available by the Contractor to the Supervisor.

The Contractor shall execute the Works in such a manner that he does not damage or interfere with existing cables, conduits and installations on or near the Site.

It shall be the Contractor's responsibility to ensure proper back-filling, appropriate to the section of the site, of any excavation made in the work area by any utility company, necessitated by the Contractor's operations.

The Contractor will establish for himself safe clearances to cables of various different voltages from the appropriate local electricity authorities. All damage to, or interference with, existing services, caused during the progress of the works, shall be deemed to be the responsibility of the Contractor, who shall undertake to repair, any damage so caused to the existing underground services or other features.

Notwithstanding the foregoing Specifications, and without lessening the Contractor's responsibility, the Contractor shall inform the Supervisor immediately if any existing works are jeopardized.

3.6.2. Site use and utility services

The Contractor shall restrict his activities to within the Sites and shall avoid entry on to any other lands except where the Contractor has made his own arrangements for such entry or the owner has arranged for this entry. Any trespass, damage or claims arising from such entry shall be the sole responsibility of the Contractor, who shall hold the Contracting Authority indemnified against all claims arising from such trespass or damage.

The Contractor shall arrange the supply of electricity, fresh water, telephone, compressed air, and other services as are necessary to his Site establishment and shall provide, maintain and remove on completion all pipes, cables, and fittings which carry such services to his operations. The Contractor shall provide an adequate supply of safe drinking water on the Site. All electrical installations forming part of the Temporary Works shall comply with the current National Regulations.

3.7. Site access by officials

Authorized government officials shall at all times have access to the work whether it is in preparation or progress, and the Contractor shall provide such access for inspection.

3.8. Working hours and conditions

3.8.1. Site working conditions

The following general requirements shall apply:

- The Contractor shall provide adequate lighting where work is being executed at night and shall provide and install any additional lighting which the Supervisor may require in order to watch and supervise the Works and carry any testing and examination of materials;

- Materials available on the Site shall be used solely for the execution of the Works;
- The Contractor shall minimize the pollution of and disturbance to roads and other places on and around the Site;
- No trees or other vegetation shall be removed except with the express permission of the Supervisor;
- The Contractor shall ensure that access is provided to all buildings and properties adjacent to the Site for the duration of the Contract;
- All temporary buildings erected by the Contractor upon the Sites and the layout of the buildings and the site, shall comply with Laws and all local bylaws in so far as they are applicable;
- The Contractor shall be absolutely and solely responsible for the safety and security of Temporary Works and for the equipment in connection therewith which may be erected or provided for the carrying out of the Contract and for the execution of the Works. This provision shall be applicable to all temporary works and equipment whenever provided and erected by the Contractors for the purpose of or in connection with the Works.
- The Contractor shall clean all spilled dirt, gravel, or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation;
- Cleaning shall include washing with water, power brushing, and use of manual labor as necessary to achieve the necessary standard comparable with adjacent streets unaffected by the works

3.8.2. Working hours for construction

Site working hours shall be restricted according to the existing legislation in Montenegro, unless mentioned otherwise in the contract.

The Contractor's Programme and methods of working must be made on the assumption that the working hours will not be varied.

Any proposal by the Contractor to work outside these hours shall be submitted to the Supervisor for approval giving at least 7-day notice. A clear definition of the work to be carried out and the reasons for the request shall also be provided.

Unplanned deviation from the normal working hours will normally be limited to emergencies only and the Supervisor shall be informed of any such working, or the Contractor's intention of such working, at the earliest opportunity.

For the purposes of this clause, working shall be deemed to include for any activity whatsoever undertaken by the Contractor or any of his subcontractors in connection with the execution of the Works undertaken within the Site.

3.9. Visibility measures

In accordance with the Montenegrin legislation, the General construction work information board installation is part of the Contractor obligation.

The item shall be paid as a lump sum.

3.10. Security and Fire Fighting

The contractor shall respect all relevant local legislation and best available practice which is covering the field of Security and Fire Fighting.

The Contractor shall perform all work in a fire-safe manner. He shall supply and maintain on the site adequate fire-fighting equipment.

The Contractor shall provide and maintain adequate fire extinguishers on the Site and areas of high fire risk shall be fenced and signs posted and supplied with specialized fire extinguishers, if necessary. Generators and their batteries and water pumps shall be adequately protected against vandalism and theft.

Unless otherwise provided by the Supervisor, the Contractor shall not by his operations obstruct any road or access to other buildings nor break down any fence nor obstruct any drains or water courses, but if such blockages occur, he shall at once remove the blockages and repair them the breakages.

3.11. Construction site documentation

Pursuant to Article 96. Law on spatial planning and construction of structures ("Official gazette of Montenegro" no. 064/17, 044/18, 063/18, 011/19 and 082/20), the Contractor shall keep the following documentation at the building site:

- 1) license of the contractor for the performance of activity set out in Article 122 of the present Law;
- 2) decision appointing the chartered engineer managing the building of the structure in its entirety;
- 3) license of the chartered engineer managing the building of the structure in its entirety;
- 4) license of the engineering supervision for the performance of activity set out in Article 124 of the present Law;
- 5) decision appointing the reviewer who is managing the engineering supervision over the building of the structure in its entirety;
- 6) license of the reviewer who is managing the engineering supervision over the building of the structure in its entirety;
- 7) evidence of liability insurance of the contractor and the engineering supervisor;
- 8) construction log book and a measurement book;
- 9) notification of building work;
- 10) stamped reviewed final design in electronic and analogue form;
- 11) site establishment study;
- 12) structure setting out/pegging out study;
- 13) written records of competent inspection authorities; and
- 14) other documents which the contractor has to collect and keep during building.

If the engineering documents envisage, for the purpose of structure building, the installation of factory produced parts, elements and equipment, the contractor shall also have at the building site, together with the documents set out in para.1 of this Article, supporting documents in compliance with law.

In the construction log book, the Contractor shall enter in it at least the following information: the weather conditions, interruptions of work owing to inclement weather, hours of work, number and type of workmen employed on the Site, materials supplied, equipment in use, equipment not in

working order, tests carried out in situ, samples dispatched, unforeseen circumstances, as well as orders given by the Supervisor.

In the measurement book, the Contractor shall enter in it at least the following information: detailed statements of all the quantitative and qualitative elements of the work done and the supplies delivered and used, for the measurement on the site by the supervisor and for the purpose of calculating of payments.

Whenever the Supervisor requires any part of the works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:

- a) Promptly either attend or send qualified representative to assist the Supervisor in making the measurement, and
- b) Supply any particulars requested by the Supervisor

If the contractor fails to attend or send the representative, the measurement made by (or on behalf of) the Supervisor shall be accepted as accurate.

The measurement book prepared by the Contractor shall be revised and signed by the Supervisor or his representative within 7 days of its receipt. The Contractor shall participate, at the place and on the date requested to him, in the examination and approval of the measurement book by the Supervisor's Representative and shall agree with him the eventual corrections to be entered into the Measurement book by the Supervisor.

The Contractor shall ascertain all conditions relevant to the Works.

All information obtained by the Contractor regarding site conditions, subsurface information, groundwater elevations, existing construction of site facilities as applicable, and similar data, are the complete responsibility of the Contractor. Neither the Supervisor nor the Contracting Authority assumes any responsibility for the completeness and faultlessness or interpretation of such supplementary information.

The construction log book and the measurement book shall be done in accordance of Rulebook on the manner of preparation and content of the construction log book and measurement book ("Official gazette of Montenegro" no. 068/18).

3.12. Health, Safety, Accidents, Security

3.12.1. General Specifications

The Contractor shall maintain arrangements whereby he can quickly call out Labour outside normal working hours to carry out any work needed for an emergency associated with the Works.

The Supervisor shall be provided at all times with a list of telephone numbers of the Contractor's staff who are currently responsible for organizing emergency work. The Contractor shall acquaint himself and his employees with any relevant local arrangements which are in existence for dealing with emergencies.

The Contractor is also obliged to observe all the stipulated measures pertaining to protection at work as well as fire protection, hygienic and technical conditions all in accordance with the local legislative and best available practice.

The Contractor shall ensure to the satisfaction of the supervisor and relevant local authorities, the health, safety and welfare at work of his and subcontractor employees, third parties and representatives of the Supervisor and Contracting Authority.

3.12.2. Labour Safety and Protection

The Contractor shall provide for conditions necessary for health and safety while working. The execution of works in order to prevent accidents with employees and passengers, working site must always be limited by protective fence.

Contractor's responsibilities shall include but not limited to:

- preparation of the Health and Safety Plan which shall be approved by the Supervisor;
- the provision and maintenance of equipment and systems of work must be safe and without risks to health;
- the execution of suitable arrangements for ensuring safety and absence of risks to health in connection with the use, handling, storage and transport of construction material;
- the provision of protective clothing and equipment, first aid stations with such personnel and equipment as are needed and such information, instruction, training and supervision as are necessary to ensure the health and safety at work of all persons employed on the Works, all in accordance with Laws and all local By-Laws;
- designation as Safety Manager/s in full compliance with Tender Requirements, as well as of additional senior staff as needed who shall have specific knowledge of safety regulations, and experience of safety precautions on similar works and who shall advise on all matters affecting the safety of workman and on measures to be taken to promote such safety;
- the provision and maintenance of access to all places on the Site in a condition that is safe and without risk of injury;
- the provision of adequate refuse collection and disposal, complying with the Laws and all local By-Laws and to the satisfaction of the Supervisor, for all site offices and workshops on the site;
- the provision of suitable latrines and other sanitary arrangements at the site where work is in progress to the satisfaction of Supervisor;
- the execution of appropriate measures in consultation with the Inspection for supervision in the field of protection and health at work to control within the site;
- reporting details of any accident to the Supervisor as soon as possible after its occurrence;
- The provision and maintenance of adequately equipped first aid station on the site of the works.

The Contractor is also obliged to observe all the stipulated measures pertaining to fire protection, protection at work as well as hygienic and technical conditions as per general requirements and specific requirements in Montenegrin legislation.

3.12.3. Accidents, Extraordinary Events

The Contractor shall give immediate written notice to the Supervisor of any accident or extraordinary event occurred on the work site giving details of the same whether or not such an accident or event affects the progress of work. The Contractor is also obliged to report on any measure taken.

3.13. Environmental Protection

3.13.1. Environmental Management Plan and other general requirements

The Contractor shall take all necessary measures and precautions and otherwise ensure that the execution of the Works and all associated operations on or off site are carried out in conformity with statutory and regulatory environmental requirements.

The Contractor shall take all measures and precautions to avoid any nuisance or disturbance arising from the execution of the Works. This shall be achieved wherever possible by suppression of the nuisance at source rather than abatement of the nuisance once generated.

The provisions of these Sub-Clauses shall only be disregarded in respect of emergency work required for the saving of life or property or the safety of the Works.

In the event of any spoil or debris or silt from the Sites being deposited on any adjacent land, the Contractor shall immediately remove all such spoil debris or silt and restore the affected area to its original state to the agreement of the Supervisor.

The offer should include appropriate cost-effective mitigation measures, which should form part of the project cost.

Environmental Management Plan (EMP) shall be prepared by the Contractor incorporating proposals concerning the implementation, management and monitoring of the environmental components of the project.

Within two (2) weeks from the commencement of the works, the Contractor shall submit an EMP with operational details of its proposals to the Supervisor for approval.

The item shall be paid as a lump sum.

3.13.2. Environmental protection during construction period

The Contractor shall use such construction methods and shall maintain all borrow/stockpile/spoil disposal area so as to assure the stability and safety of the Works and any adjacent feature, to assure free and efficient natural and artificial drainage and to prevent erosion.

The Supervisor has the power to disallow the methods of construction and/or the use of any borrow/stockpile/spoil disposal area if in their opinion the stability and safety of the Works or any adjacent features are in danger, or if they disturb natural or artificial drainage, or if the method or use of the area will promote undue erosion.

Following excavation for the works, the Contractor shall take all steps necessary to complete drainage and slope protection works in advance of each rainy season. Erosion or instability or sediment deposition arising from operations not in accordance with the Specifications shall be repaired immediately by the Contractor at its expense. The Contractor shall also take all steps necessary to complete drainage in advance of each winter rainy season in the areas excavated for borrowing materials.

Notwithstanding approval of the intended method of working, the Contractor shall at all times be responsible for constructing works in accordance with the Specifications, the Design and drawings.

3.13.3. Prevention of pollution

The Contractor shall ensure that its activities do not result in any contamination of land or water by polluting substances.

The Contractor shall implement physical and operational measures such as oil and grease traps in drainage systems from workshops, service and fuel ingress, the establishment of sanitary solid and liquid waste disposal systems, the maintenance in effective condition of the same assures, the establishment of emergency response procedures for pollution events and dust suppression, all in accordance with normal good practice and to the agreement of the Supervisor.

3.13.4. Environmental considerations

The following environmental protection measures shall be observed during the execution of the construction of the works:

Demolition material - Reuse of demolition materials as backfill for trenches and excavations or/and hard fill for construction foundations and roadways is possible, unless contaminated or hazardous materials such as asbestos are identified. The Contractor will be responsible for environmentally safe disposal of any material resulting from the demolition and other site materials with approval from the relevant local Authorities at a designated licensed disposal facility.

Excavated soil - Reuse of excavated natural soil, which is free of cohesive components, salt, sulphate and/or clay materials, may be used as backfill for trenches and excavations. The Contractor will be responsible for environmentally safe disposal of surplus materials with approval from the relevant local Authorities at a designated licensed disposal facility.

Ground water - Temporary and/or permanent groundwater lowering may be required. The Contractor shall apply appropriate dewatering measures as required and shall also ensure that adequate measures are implemented to control surface water discharge.

Air pollution - Construction may give rise to dust and construction equipment exhaust emissions. Due note shall be taken of the proximity of residential housing to the works. The normal health and safety controls will be required to safeguard the residential and passing population.

Noise pollution - Construction works may cause annoyance caused by noise. The normal health and Safety controls will be required to safeguard the residential and passing population.

Maximum noise levels - During construction works the Contractor shall comply with the local and national requirements. The Contractor shall be legally responsible and financially liable to observe Montenegrin environmental legislation.

The noise levels shall be in accordance with the relevant Montenegrin noise environmental legislative.

Noise and disturbance shall be kept to the reasonable minimum as far as required for this project. The Contractor's attention is drawn to the close proximity of some residential areas. All plant and tools used at such sites above or near ground level shall be silenced or of a silent type.

The Contractor shall take all necessary steps to ensure that its workmen carry out their duties in a quiet manner particularly when working at night.

Pollution prevention - the Contractor shall not pollute or unnecessarily disturb lands, roads and other places on and around the Site. No trees or other vegetation shall be removed except to the extent necessary for the Works.

Dust control- Dust shall be controlled and reduced by periodically spraying demolition works with water. Site operatives and general public shall be protected from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

3.13.5. Air quality

The Contractor shall devise and arrange methods of working to minimize dust, gaseous or other airborne emissions and carry out the Works in such a manner as to minimize adverse impacts on air quality.

The Contractor shall utilize effective water sprays during the delivery and handling of materials when dust is likely to be created, and to dampen stored materials during dry and windy weather.

Stockpiles of materials shall be sited in sheltered areas. Stockpiles of friable material shall be covered with clean tarpaulins, and sprayed with water during dry and windy weather. Stockpiles of material or debris shall be dampened prior to their movement, except where this is contrary to the Specification.

Any vehicle transporting no coherent material shall not be loaded to a level higher than the side and tail boards, and shall be covered with a clean tarpaulin in good condition. The tarpaulin shall be properly secured and extend at least 300 mm over the edges of the side and tail boards.

In periods of high wind, dust generating operations shall not be permitted within 200 m of residential areas having regard to the prevailing direction of the wind.

Construction vehicles and machinery shall be kept in good working order and engines turned off when not in use. Appropriate measures shall be taken to limit exhaust emissions from construction vehicles, machinery and plant.

An advance warning shall be given to potentially affected persons, so that some measures can be taken by them before commencement of works, especially before dismantling/demolition.

3.13.6. Noise

The Contractor shall consider noise as an environmental constraint in its planning and execution of the Works. The Contractor shall take all necessary measures to ensure that the operation of all mechanical equipment and construction processes on and off the Site shall not cause any unnecessary or excessive noise, taking into account applicable environment requirements. The Contractor shall use all necessary measures and shall maintain all plant and silencing equipment in good condition so as to minimize the noise emission during construction works.

3.13.7. Measures for decreasing the negative environmental impact

In order to mitigate negative environmental impact, the Contractor should propose necessary actions in its Environmental Management Plan (EMP), such as:

- To create adequate organization for execution of construction works which shall comply with local construction regulations;
- To provide water sprinkling of the construction site;
- To create organization for control on the facilities storing fuel and lubricants and on the technical condition of the machines in order to avoid accidental oil spills;

- Along the construction site, waste water should be treated and sedimentation tanks and oil separators should be placed if needed;
- To foresee the necessary maintaining and drainage measures for the construction site, access roads and service roads, in order limiting the erosion processes;
- To specify the quantity and type of waste and how its disposal is intended to be transported and removed from the site area;
- Measures for fast conservation of unfinished works at unfavorable conditions.

3.14. *Site Clearance*

Upon completion of each section of the Works, the Contractor shall clean up the site; remove all temporary buildings, plant and debris. He shall level off and fine grade all excavated materials which is surplus to Specifications. The whole of the site shall be left in a clean condition to the satisfaction of the Supervisor. A Final Certificate will not be issued before the Contractor has removed all his machinery, equipment, plant, waste material from the site and the site reinstated to the satisfaction of the Supervisor.

3.15. *Traffic Specifications*

The Contractor shall take all reasonable steps to prevent vehicles entering and leaving the Site depositing mud or other debris on the surface of adjacent roads or footways, and shall remove expeditiously any materials so deposited. The surfaced areas of the Sites shall also be covered by the Specifications of this clause.

The Contractor shall not make use of the public streets, roads, verges, thoroughfares or footpaths for disposing or storing equipment or materials.

3.16. *Contractor's Equipment and Materials*

Details of all Contractors' Equipment to be used by the Contractor in the execution of the Works shall be submitted to the Supervisor prior to its use.

The Supervisor's consent to use the Contractor's Equipment will not be unreasonably withheld, but if in the Supervisor's opinion circumstances arise which make it desirable that the use of the Contractor's Equipment should be suspended either temporarily or permanently, the Contractor shall change the method of performing the work affected and he shall be deemed to have no cause for claims against the Contracting Authority on account of having to carry out the work by another method, nor shall he be deemed to have cause for claim if any order issued by the Supervisor results in the Contractor's Equipment having to stand idle for a period of any duration whatsoever or having to be removed. In particular, where it is impossible due to the proximity of, and danger to, existing roads, structures, or services, to excavate except by hand methods, then in such cases it shall be deemed reasonable for the purpose of this clause for the Supervisor to withhold consent to use the Equipment.

All materials used shall be of the best quality as specified and described in the Specification, Design, Drawings and the Bills of Quantities.

The Contractor must secure the compliance with the Specification of materials or plant to be provided under this Contract before propose them for approval to the Supervisor.

The quality of the material has to be confirmed by the attests and suppliers' certificates, all according to TS and MNE regulations.

All materials implemented during construction shall be in compliance with the requirements of:

- Requirements of the local legislation (Law on construction products ("Official Gazette of Montenegro", no. 018/14 from 11.04.2014, 051/17 from 03.08.2017), Rulebook on construction products (Official Gazette of Montenegro "no.082/16 from 29.12.2016, 041/18 from 28.06.2018, 039/20 from 28.04.2020);
- Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonized conditions for the marketing of construction products;
- The present Technical Specifications;
- Requirements from the Main design.

All materials applied shall be accompanied with quality certificates to prove their concordance with the requirements set out in the design and the Specification.

The Contractor shall make diligent efforts to procure the specified materials. Where, due to different reasons, the materials required by the Contract are not available, substitute materials may be used but with the prior approval by the Supervisor.

Also, the following general Specifications shall apply:

- The Contractor shall provide adequate lighting where work is being executed at night and shall provide and install any additional lighting which the Supervisor may require in order to watch and supervise the Works and carry any testing and examination of materials.
- Materials available on the Site shall be used solely for the execution of the Works.

3.17. Billposting and Advertisement

The Contractor shall not undertake or allow bill posting or advertising of any kind upon the works without the written consent of the Supervisor.

3.18. Procedures for Complaints and Claims for Damages

Details of all claims or warnings of intended claims which the Contractor may receive in respect of matters against which he is required by the Contract to indemnify the Contracting Authority shall be notified without delay to the Supervisor, who shall likewise pass to the Contractor any such claims or warnings which may be submitted directly to the Supervisor or Contracting Authority.

A similar exchange of information shall also be made in relation to all complaints which may be received.

The Contractor shall notify the Supervisor in writing immediately following any damage arising out of the execution of the Works.

Section 4. Civil and Architectural Works

4.1. General conditions

The Contractor shall be responsible to construct all the works in accordance with all design documentations, Montenegrin and European standards, construction best available practice and any other relevant documentation forming part of the Tender Dossier.

The Contractor is fully familiar with all details of the submitted Design, as well as with all local regulations, local standards (MEST), common practice of trade and circumstances for their execution, nevertheless, it is understood that, whenever local regulations, local standards (MEST), or any common practice of trade, are subject to any interpretation, clarification, ambiguity, or dispute, a ruling by the Supervisor will prevail, always provided that such ruling will be fully in compliance with and will be based on the subject local regulations, local standards (MEST), including, but not limited to:

ICS number	Standard number	Year	Title
91.200	MEST ISO 4463-1:2017	2017	Measurement methods for building-Setting-out and measurement -Part 1: Planning and organization, measuring procedures, acceptance criteria
	MEST ISO 7976-1:2017	2017	Tolerance for building-Methods of measurement of buildings and building products-Part 1: Methods and instruments
	MEST ISO 7976-2:2017	2017	Tolerance for building-Methods of measurement of buildings and building products-Part 2: Position of measuring points

As well as in accordance with common practice of construction works, and any such ruling by the Supervisors and subsequent instruction in that respect, will not constitute any ground for variation order and/or any additional payment.

All works must be carried out precisely and professionally. Prior to execution of the works/application of any material and/or equipment, the Supervisor must examine all material/equipment and all his comments referring to material/equipment and quality of work will be obligatory for the Contractor.

The Contractor will be responsible for all damages caused by the Contractor during any works, to any third party, structure, main building or adjacent buildings, and all repair works and compensations of any kind will be at the Contractor's expense.

The Contracting Authority will provide to the Contractor the access to building site. All other matters in this regard will be the competence of the Contractor.

It is also considered that the Contractor's will be responsible for safeguarding of the building site and maintenance of existing structure and/or building all the time during the progress of the works until completion and acceptance of the building by the Contracting Authority.

Upon the completion of the works, the Contractor will remove from the building site and other used areas all his tools, machinery, surplus material, etc. so as to have the site neatly arranged as defined in the technical documentation, and all other areas restored in same condition as before the construction.

Coding of each specific technical specification for any type of works given in this Technical Specification, and subsequently in the BoQ, is based on the International Classification for Standards - ICS, providing comprehensive correlation between the international and local standards. "The Institute for Standardization of the Montenegro" ("Institut za Standardizaciju Crne Gore") <https://www.isme.me/catalog> within its Catalogue provides numerous updated tables enabling connection between international and local standards, as well as, updated review of old MNE standards which have been either withdrawn or replaced or simply renamed.

Unforeseen works or changes to the work and/or materials and equipment the Contractor shall announce prior to execution. In this case, the Contractor is obliged to submit additional offer which must be contain analyzes according to the standards. The Contractor is obliged to submit all changes to the Supervision for approval.

The agreed unit prices include all works, material, scaffolding, transportation, use of tools, equipment or machines etc., to provide fully completed and accepted position of the works.

These general conditions apply to each item of BoQ separately.

Dismantling and Demolition Works

Concrete Works

All concrete work will be carried out fully in accordance with the Main Design, and applicable regulations and standards.

The Design define concrete quality, separately for each item, including crushing strength after 28 days (C) and class of concrete, as well as number of test samples for each item, provided that the Contractor will be obliged to observe the above stated fully.

For reinforced concrete foundations, beams, walls and slabs, apply concrete C25/30 made from separated aggregate and portland cement. A blinding layer of min 10,0 cm C12/15 shall be placed under new foundations and slab were shown on the drawings or ordered by the Supervisor.

Reinforcement steel shall be steel bar B500C and steel wire fabric B500C. In general, reinforcement steel shall have a yield strength of $f_{yd} = 500$ MPa and a characteristic tensile strength of $f_{tk} = 560$ MPa. Only ribbed bars shall be used for structural elements. Smooth bars may be used for stirrups and

secondary elements. All reinforcement steel shall be accurately placed and fixed in position and retained in that position during the placing of the concrete.

The aggregate has to be clean, without organic impurities, or earth (acceptable up to 2% by weigh), otherwise the aggregate has to be washed. The grading of aggregates shall comply with EN 933. The maximum size of aggregates required will not normally exceed 32 mm. At least two separate size ranges of aggregate required as follows: Fine aggregate: 0 to 4 mm and Coarse aggregate: nominal size: >4 mm.

Material for formwork needs to be first class of quality in order to ensure proper quality of concrete.

Where new concrete is joined with old or existing concrete, the Contractor shall cut the old concrete to form a straight surface. The joint shall be considered as a construction joint and treated with an approved epoxy resin compound, prior to placing the new concrete.

Concreting will not commence prior to the inspection and acceptance of the reinforcement. The reinforced concrete casting will be done mechanically with vibration, provided that vibration equipment will be in accordance with the type of structure.

No external load of any kind shall be applied to any part of a concrete structure until the concrete has matured at least 7 days.

The concrete works shall be executed by qualified workers, respecting technical specifications and prevailing regulations, national and international standards for such type of works.

Adequate number of samples will be tested by an accredited testing laboratory on the Contractor expense. Additional sample testing may be required, up to the maximal number of samples foreseen under the regulation.

Fee of any additional expense, if additional sample testing is required, exceeding the maximal number of samples foreseen under the regulation, in case of unsatisfactory test results expenses will be on the Contractor, otherwise, in case of positive test results, the Contractor will bear expenses of such additional testing.

The Contractor will be under obligation to present evidence on quality of material used for concrete manufacturing (cement, aggregate, water).

For the quality requirements of reinforced concrete structures in terms of aggregates, cement, water, additives, conditions of transport, storage, installation, care, and control, apply the provisions of Law on Construction Products (Official Gazette of Montenegro 18/14) and the Rulebook on Technical Requirements for Concrete Structures ("Official Gazette of Montenegro", No. 020/18, 039/19 and 052/20).

Standards

The Contractor shall carry out the works described in accordance with the appropriate standards or equivalent local or international standards. The main standards are, but shall not be limited by the following:

No.	ICS Number	Standard Number	Title
1.	91.100.30	MEST EN 206:2018	Specification, performance, production and conformity
2.		MEST EN 12350-1:2020	Testing fresh concrete - Part 1: Sampling and common apparatus
3.		MEST EN 12350-2:2019	Testing fresh concrete - Part 2: Slump test
4.		MEST EN 12350-3:2020	Testing fresh concrete - Part 3: Vebe test
5.		MEST EN 12350-4:2020	Testing fresh concrete - Part 4: Degree of compatibility
6.		MEST EN 12350-6:2020	Testing fresh concrete - Part 6: Density
7.		MEST EN 12620:2015	Aggregates for concrete
8.		METI CE 1901:2015	Regional Specifications and Recommendations for the avoidance of damaging alkali silica reactions in concrete
9.		MEST EN 934-1:2009	Admixtures for concrete, mortar and grout - Part 1: Common requirements
10.		MEST EN 12190	Products and systems for the protection and repair of concrete structures - Test methods - Determination of compressive strength of repair mortar
11.		MEST EN 12636:2010	Products and systems for the protection and repair of concrete structures - Test methods - Determination of adhesion concrete to concrete
12.		MEST EN 1008:2010	Mixing water for concrete - Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete
13.		MEST EN 933-2:2009	Tests for geometrical properties of aggregates - Part 2: Determination of particle size distribution - Test sieves, nominal size of apertures
14.		MEST EN 12390-1:2013	Testing hardened concrete - Part 1: Shape, dimensions and other requirements for specimens and moulds
15.		MEST EN 12390-2:2020	Testing hardened concrete - Part 2: Making and curing specimens for strength tests

16.		MEST EN 12390-3:2020	Testing hardened concrete - Part 3: Compressive strength of test specimens
17.	91.100.10	MEST EN 197-1:2012	Cement - Part 1: Composition, specifications and conformity criteria for common cements
18.		MEST EN 197-2:2015	Cement - Part 2: Conformity evaluation
19.		MEST EN 196-2:2015	Method of testing cement - Part 2: Chemical analysis of cement
20.	77.140.15	MEST EN 10080:2009	Steel for the reinforcement of concrete - weldable reinforcing steel - General
21.		MEST 1028	Steel wire and wire products
21.		MEST EN 10025:2008	Hot rolled products of structural steels - Part 1: General technical delivery conditions
22.		MEST EN 10079:2008	Definition of steel products
23.		MEST EN 10204:2008	Metallic products - Types of inspection documents
24.	91.080.40	MEST EN 13670:2011	Execution of concrete structures
25.		MESTN EN 1504	Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity

Measurement and Payment

Measurement is per m³ or m² of concrete, and kg of steel reinforcement (rebar).

Prices per item in the pricelist from this chapter cover fully completed work per unit measure.

Contractor procures the formwork and it remains in his possession upon use. During reuse, material must be cleaned from concrete, dirt, etc. Prior to concreting, plate must be wetted well. Formwork, supports and scaffolding are not paid separately, but are included in concreting unit price.

Masonry Works

General

All masonry work must be carried out by qualified manpower, using the appropriate tools and machines for this kind of works.

Brick laying shall be made by skilled and with qualified workers power, and according completely to legislation, this technical description and the Main Design.

Vertical and horizontal joints will be completely filled by mortar, without hollows. Thickness of mortar in joints will not be over 12 mm. Joints at outer surface will be left empty for about 15-20 mm, to provide better adhesion of mortar during plastering. Any mortar leaking will be removed immediately. Trimming of bricks and/or hollow clay blocks will be made by machinery equipment.

The Contractor, on his own expense, will provide for all required and necessary material

related to manufacturing shattering, formworks, scaffolding, as well as for timbering & bracing of trenches & foundation pits. The Contractor will remain owner of all said material and equipment and will be under the obligation to remove the same from the Site when required. Any instruction intended to improve safety and/or quality of shattering, formworks, scaffolding and timbering & bracing of trenches & foundation pits will not be considered as an additional work under any circumstances.

Internal walls

Internal walls shall be of porous light autoclaved concrete wall blocks AAC with standard dimensions and width of 120/150/200 mm and with dry density min 500 kg/m³ of the blocks. The construction of the internal walls shall be done with using cement-based adhesive as specified by the block manufacturer for this purpose, (prefabricated mortar: sand, cement, hydraulic lime and additives). The masonry should be done according to the manufacturer's instructions, for connection, anchoring/mooring, etc.

Indicate all required properties, such as:

Size Length of 625 mm, Height of 200 mm, Thickness 100/120 mm

Compressive Strength 2,5 MPa

Normal Dry Density at least 400 kg/m³

Sound Absorption 33 dB (without mortar)

Thermal Conductivity $\lambda = 0.120$ W/mK

Thermal Resistance ≥ 120 mins

Girders (tie-columns and tie-beams) of masonry walls

The walls must be confined with the reinforced concrete tie-columns/beams, dimensions of 200 mm length and varying widths as per the brick width, at least in height every 2250 mm on the ground floor and 2200 mm on the other floors, at maximum distance of 5000 mm. The tie-column should be made at free end of the wall as well as at the top of every new wall. Girders shall be constructed as cast in-situ concrete C25/30. While reinforcement is 4RØ12 steel bar and Ø8 for stirrups at 15 cm distance in line with the Eurocode.

Plaster and Mortars

Type A

Gauged Mortar with river washed sand free of fines and organic materials mixed in the ratio of:
cement: lime: sand = 1: 0,8: 8

Type B (for brickwork)

Gauged Mortar with river washed sand free of fines and organic material mixed in the ratio of:
cement: lime: sand = 1: 0,5: 5,5

Type C (for toilets areas, kitchenette and external skirting)

Cement Mortar with clean sharp sand washed and free of fines and organic material mixed in the ratio of: cement: sand = 1:2.

The present chapter refers but it not limited to the coating of the internal and external surfaces of the building that shall be plastered according to the EN 998, where not otherwise indicated. Provide asbestos-free materials. Working conditions, application equipment etc., shall all be strictly in accordance with the appropriate manufacturer's instructions.

Cement screed as base for floors skirting

Levelling screed shall be applied in all areas of flooring. Final top surface of different flooring must be equalized. Final top surface shall be cleaned, and the dust removed, and it shall be levelled using cement-based levelling compound, which should be allowed to dry.

On the floors of the building, acoustic/thermal insulation and cement mortar should be in the form of a levelling layer of light aggregate porous concrete on other pipes with a thickness of 1: 3 and up to 60 mm. The cement mortar should be semi-dry (with as little water as possible). Works shall be commenced if the ambient temperature in work area is at least 10°C and rising. The ambient temperature shall be above 10°C while work is in progress and for at least 3 days after its completion. Use of adhesives in unventilated areas is forbidden.

Technical Features of Cement Screed:

Compressive Strength: C25

Flexural Strength: F4

Reaction to Fire: A1

Release of Corrosive Substances: CT

Wall and ceiling plasters

This item is covering the applications of plastering of internal walls and ceilings where applicable in accordance with the detailed design details.

Plaster of walls and ceilings of dry rooms shall be built up with a compatible primer coat and 10 mm thick mineral lime-gypsum plaster. It shall be machine or hand applied.

Preparation, application, tools and equipment etc., shall all be strictly in accordance with the reputed manufacturer's instructions.

Plaster on sanitary area walls, boiler rooms, or external surfaces shall be mortar Type C (cement mortar).

Standards

The Contractor shall carry out the works described in accordance with the appropriate standards or equivalent local or international standards. The main standards are, but shall not be limited by the following:

No.	ICS Number	Standard Number	Title
1.	91.100.10	MEST EN 998-1:2017	Specification for mortar for masonry - Part 1: Rendering and plastering mortar
2.		MEST EN 998-2:2017	Specification for mortar for masonry - Part 2: Masonry mortar
3.	91.100.15	MEST EN 13139:2009	Aggregates for mortar
4.	91.100.25	MEST EN 771-1:2016	Specification for masonry units - Part 1: Clay masonry units

Measurement and Payment

The calculation of the works is made per measurement unit, indicated for each item. The unit price will include execution of the complete item (supply of material, external, all horizontal and vertical site transport, safety measures, scaffolding, required formwork) and other activities necessary for proper execution of the works.

Insulation Works

The Contractor shall submit to the Supervisor for his approval complete details of the proposed waterproofing system specified in the drawings. The submittal shall include specifications, technical literature, safety measures and samples. - Vertical up stand details;

The water proofing system shall be applied by specialized experienced workers.

Waterproofing works shall be implemented for the waterproofing of:

- Hydro-insulation membrane coated from both sides with a high-quality bitumen mass, produced from special bitumen, enriched with elasticizes based on specially chosen rubbers and quality mineral fillers, min. 4 mm of thicknesses in rooms on ground floor
- Wet and sanitary areas hydro-insulation based on cement-polymer mortars, according to Supervisor instructions.

a) Hydro insulation on the ground floor slab

The installation of horizontal waterproofing on the ground floor plate with these layers: one layer of bitumen paint/mass, two layers of bitumen waterproofing thickness 4 mm (one with shall be welded).

All materials shall be stored and used strictly in accordance with the manufacturer's instructions. The surface must be hard, sound and free of dust, dirt and other barrier materials such as paint, lime coatings, plaster and adhesive residues, etc. In cases where there is a rough surface, it shall be levelled according manufacturer's instructions.

Elastic bituminous primer shall be applied to the blinding concrete. It shall be a cold fluid bituminous based coat applied by brush roll. It shall be compatible with the following waterproofing layer.

Working conditions, application equipment etc., shall all be strictly in accordance with the reputed manufacturer's instructions.

b) Horizontal and vertical hydro insulation based on cement-polymer mortars

Toilets floors and concrete parapets under glass walls shall be waterproofed with two coats of a two-component fiber-reinforced mortar, with very low elastic modulus, containing fine particle size selected aggregates and adequate additives for waterproofing. Waterproofing on the walls in the toilettes shall rise to 15 cm above the finished floor level, including the fiberglass meshes on angels of the toilets. Particular attention shall be paid to sealing the around the floor drains and opening for installation to prevent leakage.

Working conditions, application equipment etc., shall all be strictly in accordance with the reputed manufacturer's instructions.

Thermal insulation in floors, walls, ceilings and roofs

Thermal - acoustic insulation shall be laid in the roof and flooring applications, all in accordance with the main design drawings.

a) Thermal Insulation on floors

The thermal insulation on the floor shall be made of extruded polystyrene boards with a smooth surface structure with volume weight of 30 kg/m³, thickness 20-50 mm.

Thermal insulation will be applied on all floor slabs of the building. On the upper side of the isolation PE sheet should be applied. TI shall be produced by appropriate manufacturer and the working conditions, application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.

- Thermal coefficient $\lambda = 0,033 \text{ W/mK}$ (d=30mm)
- Permissible compressive load (2% compressibility): 130 kPa
- Fire class: "E" (according to EN 13501-1)

Standards

No.	ICS Number	Standard Number	Title
1.	91.100.50	MEST EN 13969:2009	Flexible sheets for waterproofing - Bitumen damp proof sheets including bitumen basement tanking sheets - Definitions and characteristics
2.		MEST EN 13956:2014	Flexible sheets for waterproofing - Plastic and rubber sheets for roof waterproofing - Definitions and characteristics
3.	91.100.60	MEST EN 13164:2016	Thermal insulation products for buildings - Factory made extruded polystyrene foam (XPS) products - Specification

Sheet Metal Works

A) Flat metal sheets

Flat metal sheets, hot-dip galvanized (Z165) steel sheet, PVC coated steel sheet, 0,55 mm thick, up to corrosive class C4, RAL 3009 of the metal sheet.

Polymer Coated Metal Sheet:

Thickness: 0,55 mm

Weight: 4,40 kg/m²

Metal flashing shall be provided with expansion joints on long runs to prevent deformation of the metal sheets. The selected metal shall not stain or be stained by adjacent materials or react chemically with them.

B) Trapezoidal steel sheet

Trapezoidal metal sheets 35/200, hot-dip galvanized (Z165) steel sheet, PVC coated steel sheet, 0,55 mm thick, up to corrosive class C4, color RAL 3009.

Polymer Coated Metal Sheet:

Thickness: 0,55 mm

Weight: 5,70 kg/m²

The selected metal shall not stain or be stained by adjacent materials or react chemically with them.

Aluminum Doors, Windows and Glass Doors

Aluminum

The present activity mainly refers but it is not limited to supply, fixing and handing of doors, windows, glass walls and assemblies, complete and in accordance with Main Design and Supervisor instructions.

The schemes of the doors, windows, glass walls and assemblies presented in Main Design and Volume 5 of this TD shall be the guide for this item, but all the measurements shall be re-checked on site before the start of manufacturing.

Aluminum work and glazing shall be carried out in strict accordance with the requirements of the applicable Building Code requirements and applicable EU standards:

No.	ICS Number	Standard Number	Title
1.		MEST EN 12207:2019	Windows and doors - Air permeability - Classification
2.		MEST EN 12208:2019	Windows and doors - Watertightness - Classification
3.		MEST EN 12210:2019	Windows and doors - Resistance to wind load - Classification
4.	91.060.50	MEST EN 12365-1:2009	Building hardware - Gasket and weatherstripping for doors, windows, shutters and curtain walling - Part 1: Performance requirements and classification
5.		MEST EN 1121:2009	Doors - Behavior between two different climates - Test method
6.		MEST EN 12051:2009	Building hardware - Door and window bolts - Requirements and test methods
7.		MEST EN 179:2011	Building hardware - Emergency exit devices operated by a lever handle or push pad, for use on escape routes - Requirements and test methods
8.	91.190	MEST EN 1125:2009	Building hardware - Panic exit devices operated by a horizontal bar, for use on escape routes - Requirements and test methods
9.		MEST EN 1935:2010	Building hardware - Single-axis hinges - Requirements and test methods

10.	87.020	MEST EN ISO 12944-5:2021	Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 5: Protective paint systems (ISO 12944-5:2019)
11.	81.040.20	MEST EN 673:2011	Glass in building - Determination of thermal transmittance (U value) - Calculation method

Samples of all profiles and/or elements are to be submitted to the Supervisor for approval and the elements used throughout the works are to be equal in all respects to the approved sample having particular regard to consistency of grain and color where this is of visual importance to the finished works.

All necessary mortising, tendon making, grooving, matching, tonguing, housing, rebating and all other work necessary for correct jointing shall be executed in accordance with the relevant standards.

TILING WORKS

The work shall be carried out by the labor qualified for this type of works. The selection of colors and design shall be made with the consent of the Supervisor, unless otherwise indicated in a separate description. Damaged tiles and tiles of poor quality must not be set.

No.	ICS Number	Standard Number	Title
1.	91.100.23	MEST EN 14411:2018	Ceramic tiles - Definition, classification, characteristics, assessment and verification of constancy of performance and marking
2.	83.180, 91.100.10	MEST EN 12004-1:2018	Adhesives for ceramic tiles - Part 1: Requirements, assessment and verification of constancy of performance, classification and marking
3.	83.180, 91.100.10 91.100.30	MEST EN 12004-2:2018	Adhesives for ceramic tiles - Part 2: Test methods
4.	91.100.25	MEST CEN/TR 13548:2020	General rules for the design and installation of ceramic tiling
5.	91.100.23	MEST EN 17160:2020	Product category rules for ceramic tiles

Flooring works

The vinyl flooring is installed with adhesive. Prior the installation of the vinyl flooring preparation of underlayer must be executed.

The material used shall be of high quality and produced by appropriate manufacturer and the working conditions, application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.

Façade Works

External walls shall be insulated with thermal insulation to match the requirements for the contact facade.

Fixing shall be done in according to design details and manufacturer's specification.

The Façade as presented in the architectural design should be composed of:

- Finish coat, paint / impregnation
- Primers
- Mat reinforcement
- Basecoat
- EPS insulation material with system dowels
- Adhesive
- Masonry / concrete with or without plaster

Adhesive and basecoat

Ready-to-use organically bonded fiber and siloxane reinforced adhesive/basecoat with mineral-based lightweight aggregates for high yields. Product shall be in compliance with EN 15824

EPS insulation material with system dowels

Thermal isolation boards made of EPS (expanded polystyrene), thickness d=50mm/80mm, with following characteristic:

- Thermal conductivity λ_D : 0,038 W/mK
- Permissible compressive load (2% compressibility): 20 kPa
- Fire class: "B" (according to EN 13501-1)

Insulation anchor nails with the option of screwing in a compound screw nail for thermal facade systems.

The insulation anchor nail/dowel consists of a combination of fiber-glass reinforced polyamide and galvanized steel, the dowel anchor sleeve is made of polypropylene and the dowel plate is also made of fibre-glass reinforced polyamide. With its integrated compression crumple zone and a dowel plate thickness of just 2.5 mm, the dowel plates are placed exactly flush in the insulation material.

Mat reinforcement

Reinforcing mesh 4x4 mm or 5x5 mm;
Mesh reinforcement joint overlap ≥ 100 mm.

Finish coat

Ready-to-use, paste-like silicone resin plaster for non-directional textures, in compliance with EN 15824. Resistant to soiling, highly vapour permeable, highly water-repellent, Retards and prevents the formation of mould and algae. Color RAL 9010, 7046, 1019. (Color distribution is given in Main Design)

The surface of the substrate must be dry, even and free of grease and dust as well as free of any residual substances that may reduce the adhesion. Check the stability of existing coatings (paint coatings and old plasters) and compatibility with adhesive, and remove unstable coatings completely if necessary. Ensure that all openings (interface gaps) are sealed.

The contractor is solely responsible for inspecting the condition of the substrate and the on-site conditions.

The ambient temperature, substrate and material temperature must be at least +5 °C and may not exceed +30 °C during the entire application, drying and setting phase.

Unfavorable weather influences such as high temperatures, wind or direct sunlight can change the application conditions.

The surface of the wall must be flat, dry and free of grease and dust.

Unevenness in the substrate up to a maximum of 20 mm can be covered with the adhesive if dowelling is used in addition to adhesive bonding. Major unevenness should be equalized using a suitable plaster layer or by staggering the insulation panel thickness. The bond strength of the plaster should be tested after it has set.

Edge ribbon and dab bonding is performed by hand. The adhesive bonding surface with the substrate is ≥ 40 % after pressing in the insulation panels. Apply an approx. 50 mm wide ribbon of mortar around the perimeter and 3 palm-sized adhesive dabs or strips on the insulation panel.

Install the plinth connection end profile horizontally and fix using anchor nails at spacings of approx. 300 mm. Compensate for substrate tolerances with washers. Connect the joints and the plinth connection end profiles with H connectors. Apply insulation panels immediately to the fresh adhesive by pushing, floating and pressing.

Apply the insulation panels precisely and continuously starting from the bottom with the joints staggered at ≥ 100 mm (half panel length recommended for joint staggering). Cross joints, e.g., on opening corners should be avoided.

The wall must be sufficiently stable to allow the use of dowels.

The number of dowels is 6/m². Application of the dowels can commence after the adhesive has hardened sufficiently. The diameter of the drill must be ≥ 8 mm. Do not use impact or hammer drills

on hollow or perforated bricks or masonry. Arrange the drill holes so that the concrete reinforcement is not damaged. Drill hole depth = dowel length + 10 mm (or +25 mm with recessed dowel installation). Clean the drill holes before the dowels are applied. Do not use worn drill bits. Resharpening of the drill bit is not permissible. Under the mesh the installation can be flush to the surface or recessed in the surface. When applying dowels through the reinforcement mesh the dowels can only be placed surface flush. The dowel must be set in the fresh basecoat layer after the application of the basecoat and the embedding of the reinforcing mesh. Then immediately (wet plaster on wet plaster) apply a second layer of basecoat. The substrate temperature must be $\geq 0^{\circ}\text{C}$ when placing a dowel. The exposure to UV light with direct exposure to sunlight for the dowel and insulation panel may not exceed 6 weeks.

Embed reinforcement mesh on the entire surface with at least a joint overlap of 100 mm fresh-in-fresh in the basecoat layer. Apply a full covering of basecoat to the mesh.

The mesh is arranged in the center when the basecoat thickness is up to 4 mm, for > 4 to 7 mm layer thickness it is in the upper half of the basecoat layer and for > 7 mm in the exterior third. Avoid excessive smoothing of the reinforcement layer to prevent a

concentration of fine particles or formation of a sinter layer on the surface. Rub off any burrs that have formed when drying. Plaster connections should be separated with a separating tape, separation strip, profiles or similar from the constructional components.

Before application of a further coating (primer) it is important to ensure that the basecoat is fully dry. The minimum drying time is generally approx. 1 day/mm layer thickness. With **unfavorable** weather conditions (e.g., high levels of air humidity or low temperatures) the drying time is extended.

Ready-to-use, paste-like final coat must be mixed thoroughly. When necessary, a small quantity of water may be added to set the application consistence. Apply mixture (floated render texture) with a stainless-steel trowel in grain size $d=2,0\text{ mm}$ to the entire surface and trowel smooth with circular movements without interruption using a hard plastic trowel. Use a trial coat to ensure the color shade is correct. Always complete surfaces that can be viewed together on the same day.

The contractor is solely responsible that all components of thermo isolated façade are compatible.

PAINTING WORKS

Painting works shall be performed by professional workers, appropriate tools and material which is in accordance with technical regulations, norms and standards. All used material shall meet in accordance with applicable standards and this technical documentation.

SUSPENDED CEILINGS AND LINING WORKS

4.1.1. General

Installation of all suspended ceilings and plasterboard lining with appropriate professional workforce, with the full application of modern tools intended for this type of work.

All used materials, connecting and binding agents, protective equipment must have required quality and certificates.

Works must be carried out well, according to regulations, standards, technical documentation and certified constructive details. The method and direction of setting suspended ceiling performed according to the description and details of the project, with a mandatory consent of the Supervisor.

Prior the installation samples of the ceiling must be submitted to the Supervisor for approval.

During the execution of works, respectively until finishing them, the contractor is obliged to take all necessary measures, in order not to damage these works. If it the case, the contractor will bring the works to the designed state at his own expense with the consent of the supervising authority.

Calculation per unit indicated at each position of works. Unit price includes production of a complete position of works, (procurement of basic, binding and protection material, material for smoothing and impregnation, external and internal transport, construction, protective measures, all horizontal and vertical transfers, necessary scaffolding, cleaning and other activities that are necessary for high quality of these works). This description is an integral part of each individual position of works and it does not exclude the application of applicable regulations in the construction industry in this area.

No.	ICS Number	Standard Number	Title
1.	91.100.10 01.040.91	MEST EN 520:2017	Gypsum plasterboards - Definitions, requirements and test methods
2.	91.100.10 91.100.60	MEST EN 13950:2016	Gypsum board thermal/acoustic insulation composite panels - Definitions, requirements and test methods
3.	91.060.30	MEST EN 13964:2016	Suspended ceilings - Requirements and test methods
4.	91.100.10	MEST EN 13963:2016	Jointing materials for gypsum boards -Definitions, requirements and test methods
5.	91.100.60	MEST EN 14303:2016	Thermal insulation products for building equipment and industrial installations - Factory made mineral wool (MW) products - Specification

4.2 UNIT PRICE DESCRIPTIONS

BoQ Item	B1.1; B13.1	Unit	m2
Unit price definition	Removal and installment of existing furniture and equipment		
Description			
Removal of existing furniture and equipment from the rooms. Furniture and equipment should be temporary dislocated and installment after competition of the works in same positions at the premises after finishing of the works.			
The unit price include removal and return of the furniture and equipment at previous locations.			
All damaged furniture and/or equipment caused by the Contractor shall be replaced by the expense of the Contractor.			
Calculation per m2 of room area.			

BoQ Item	B1.2.	Unit	LS
Unit price definition	Dismantling and reinstallation of sports equipment		
Description			
Dismantling of sports equipment fixed to the walls inside the sports hall. Equipment that is retained, the Contractor shall carefully disassemble and store until re-installation.			
Equipment which is intended for replacement the Contractor shall collect, take out, load on the truck and take to the landfilled located at ADH not exceeding 20 km.			
The unit price includes all necessary materials, tools, work, scaffolding including reassembly of equipment which is intended for reuse.			
Calculation per lump sum as described above.			

BoQ Item	B1.3; B13.3	Unit	m2
Unit price definition	Demolition and Removal the Existing Floors		
Description			
Demolition and removal the existing flooring down to the concrete slab with all layers up to 10cm thick. Finishing floor layer are different: ceramic tiles, parquet, vinyl/linoleum, laminate or concrete. The work item includes the removal of the corresponding ceramic edge tiles and edge profiles, which will not be paid separately. Carefully demolish the floor layers, level and clean the floors surfaces, load the rubble and take it to the landfill.			
Calculation per m2 of demolished floor, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.4	Unit	m2
Unit price definition	Demolition and Removal the Existing Floors-Ceramics		
Description			
Demolition and removal the existing flooring down to the cement creed . The work item includes the removal of the corresponding ceramic edge tiles and edge profiles, which will not be paid separately. Carefully demolish the floor layers, level and clean the floors surfaces, load the rubble and take it to the landfill.			
Calculation per m2 of demolished floor, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.5	Unit	m2
Unit price definition	Demolition of the existing floor and the concrete slab		
<p>Description</p> <p>Demolition and removal the existing floor and the concrete slab in the room in the atrium 1. Carefully demolish the floor layer and the concrete slab, clean the surface, load the rubble and take it to the landfill.</p> <p>Calculation per m2 of demolition floor together with slab, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>			

BoQ Item	B1.6; B13.6	Unit	m2
Unit price definition	Demolition of Wall Ceramic Tiles		
Description			
Demolition of wall ceramic tiles, up to wall structure (concrete or masonry wall), regardless of whether the ceramic tiles are glued or installed with cement mortar. Carefully remove the ceramic tiles, level and clean the wall surfaces, and load the waste and take it to the landfill. Calculation per m2 of demolished wall ceramic tiles, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.7; B13.8	Unit	m2
Unit price definition	Demolition of the Wooden Slats from the walls		
Description			
Demolition and removal the existing wooden slats from walls of the restaurant education classroom where the wall openings are planned. Carefully cut and remove the wooden slats and load the rubble and take it to the city landfill located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			
Calculation per m2 of removed wooden wall slats			

BoQ Item	B1.8.1	Unit	m2
Unit price definition	Demolition of Partition Walls-d=7-15cm		
Description			
Demolition of internal and/or external partition walls together with all layers, regardless of type of the finishes and together tie-columns/beams in the walls. Walls thickness is from 7 cm to 15 cm.			
The work item includes the removal existing installations within the partition walls. Execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill. Calculation per m2of demolished wall, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.8.2;B13.9	Unit	m3
Unit price definition	Demolition of Partition Walls-d=20-30cm		
Description			
Demolition of internal and/or external partition walls together with all layers, regardless of type of the finishes and together tie-columns/beams in the walls. Walls thickness is from 20 cm to 30 cm.			
The work item includes the removal existing installations within the partition walls. Execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.			
Calculation per m3 of demolished wall, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.9	Unit	m2
Unit price definition	Demolition of the Roof Concrete Slab of the Room in Atrium 1		
<p>Description</p> <p>Demolition of the concrete roof slab of the room in atrium 1, d=20 cm.</p> <p>The unit price includes all work, material and scaffolding for safe demolition of the concrete slab.</p> <p>Execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.</p> <p>Calculation per m2 of demolished slab, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>			

BoQ Item	B1.10;B13.4	Unit	m2
Unit price definition	Demolition of Existing Suspended Ceiling		
Description			
Demolition of existing suspended ceilings with its substructure. The demolition shall be executed carefully not to damage the existing concrete slab and roof structure. Suspended callings are made of reed with mortar, wooden slats, metal slats, panel of mineralized sawdust type “Durisol”.			
Unit price includes removal, collecting the debris, take it out, load it on a truck and take it to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			
Calculation per m2 of demolished suspended ceiling including substructure.			

BoQ Item	B1.11	Unit	LS
Unit price definition	Demoliton of metal stairs in Atrium 1		
Description			
Demolition of external metal stairs for the office access from atrium 1. Position includes removal of all elements of the metal construction. The metal structure is approx. 450 cm long, approx. 270 cm height, and approx. 120 cm width.			
The Contractor shall execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.			
Calculation per lump sum, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.12	Unit	LS
Unit price definition	Demolition of fence on the flat roof		
Description			
Demolition of fence on the flat roof next to the sports hall. The fence is made of metal tubular profiles Ø40mm and wire mesh. The length of the fence is 410 cm and the height is 200 cm. The contractor shall execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.			
Calculation lump sum, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.13	Unit	m2
Unit price definition	Demolition of existing concrete sidewalk		
Description			
Demolition of the existing concrete sidewalk for foundations of the new canopy, all in accordance with the drawings given in the design. The contractor shall collect the rubble, remove it, load it on a truck and take it to the landfill located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			
Calculation per m2 of demolished sidewalk.			

BoQ Item	B1.14;B13.10	Unit	M3
Unit price definition	Demolition of existing concrete step and ramp		
Description			
Demolition of the existing concrete step and ramp (d=20cm). The contractor shall collect the rubble, remove it, load it on a truck and take it to the landfill located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			
Calculation per m3 of demolished concrete surface.			

BoQ Item	B1.15	Unit	LS
Unit price definition	Dismantling of the fence on the ramp		
<div>Description</div> <div>Dismantling of the fence on both sides of the ramp, on the southeast side of the building. Fence height is 100 cm, length cca. 190. The Contractor shall collect the rubble, remove it, load it on a truck and take it to the landfill located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</div> <div>Calculation per lump sum.</div>			

BoQ Item	B1.16	Unit	m'
Unit price definition	Demolition of the metal structure on the entrance at the entrance 2		
<p>Description</p> <p>Demolition of the metal structure at the entrance 2, on the northwest side of the building. Metal structure consist of square profiles 40x40mm, wire mesh and corrugated metal sheet, length cca 7,85m, width cca 6,50 mand height approx. 3,50 m. The Contractor shall execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.</p> <p>Calculation per m2 of horizontal projection of demolished metal structure, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>			

BoQ Item	B1.17;B13.17	Unit	m2
Unit price definition	Demolition of concrete slabs, d=15 cm		
Description			
Demolition of concrete slabs in atriums and in in front the main entrance, thickness d=15cm. The Contractor shall execute demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.			
Calculation per m2 of demolished slabs, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials			

BoQ Item	B1.18	Unit	m3
Unit price definition	Demolition of concrete stairs inside the atriums		
Description			
Demolition of concrete stairs inside the atriums. The dimensions of the stairs in the atriums are:			
1. total length of 90,0 cm, width of 195,0 cm, 3 steps dim. 30,0 x 14,0cm (width x height);			
2. total length of 31,0 cm, width 170,0 cm, 1 step measuring 31,0x14,0cm (width x height);			
3. total length of 31,0 cm, width 130,0 cm, 1 step measuring 31,0x14,0cm (width x step height).			
The Contractor shall execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.			
Calculation per m3 demolished stairs, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.19	Unit	m'
Unit price definition	Demolition of the part of the existing fence		
Description	<p>Demolition of the part of the existing fence with belonging part of concrete plinth for construction of pass between buildings "A" and "B". Dimensions of concrete plinth is 20x40 cm. Height of the fence is 100cm. The Contractor shall execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.</p> <p>Calculation per m' demolished fence with concrete plinth, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	B1.20	Unit	m'
Unit price definition	Demolition of the fence on internal staircase		
Description	<p>Demolition of the fence on internal staircase. The fence is made of vertical box steel profiles, metal handrail with wooden lining and horizontal wooden planks in two levels. The total height of the fence is 100 cm. Demolished elements load on a truck and transport them to a landfill.</p> <p>Calculation per m1 of dismantled fence, with transportation to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	B1.21;B13.71	Unit	PCS
Unit price definition	Dismantling of all doors and windows		
Description	<p>Dismantling of interior and exterior glass walls, doors and windows of various dimensions and materials (wood, steel, PVC or aluminum). Dismantled glass walls, doors and windows load on a truck and transport them to a landfill.</p> <p>Unit price includes dismantling of window sills, burglar bars, associated frames and other elements.</p> <p>Calculation per piece of dismantled glass wall, door or window, with transportation to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	B1.22	Unit	m2
Unit price definition	Dismantling of Wall Wooden Slats		
Description			
Dismantling of the existing wooden slats in the room 29 -library, together with substructure. The Contractor shall dismantle carefully, collect the rubble, take it out, load on truck and take it to the landfill.			
Calculation per m2 of removed wooden slats with substructure, with transportation to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.23	Unit	m2
Unit price definition	Demolition of the concrete ground floor slab		
Description Demolition of the concrete ground slab between in the hallway between axis E' -H' and 8'-9'. The slab thickness is up to d= 15cm. Load the rubble on a truck and transport it to a landfill. Calculation per m2 of demolished slab together with all layers, with transportation to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.24	Unit	PCS
Unit price definition	Drilling the holes in the existing concrete construction		
Description			
Drilling the holes in the existing concrete construction for the new installations. Dimension of the should that enable accurate position of new sewerage and plumbing installations. The position includes all work, material and equipment for carefully drilling holes.			
Calculation per piece of drilled hole.			

BoQ Item	B1.25	Unit	PCS
Unit price definition	Dismantling of the existing horizontal and vertical drain elements		
Description			
Dismantling of existing horizontal and vertical drain elements- through concrete slab and roof parapet walls. The drain shall be removed taking care not to damage the contact parts of the facade. Collect all the waste, remove it, load it on a truck and take it to the landfill located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			
Calculation per piece of removed drain.			

BoQ Item	B1.26;B13.16	Unit	m'
Unit price definition	Dismantling of the sheet metal cover of roof parapet walls		
Description	<p>Dismantling of the complete existing sheet metal cover made of galvanized steel sheet - cover of roof parapet walls. The covers shall be removed complete with the corresponding anchors. Collect all the waste, remove it, load it on a truck and take it to the landfill located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p> <p>Calculation per m1 of dismantled metal sheet cover.</p>		

BoQ Item	B1.27;B13.5	Unit	m'
Unit price definition	Dismantling of vertical gutters/downspouts		
Description	<p>Dismantling of downspouts (vertical gutters). Downspouts shall be removed complete with belonging anchors. The Contractor shall perform dismantling carefully in order not to damage the existing facade and the connection joint of the horizontal gutter into downspout.</p> <p>The price includes all necessary work, materials and scaffolding. Collect all the waste, remove it, load it on a truck and take it to the landfill.</p> <p>Calculation per m1 dismantled downspout with transportation to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	B1.28	Unit	m2
Unit price definition	Removal of old facade paint		
Description	<p>Peeling, scraping and cleaning of old façade paint layers. Only damaged paint shall be removed. The Supervisor will give instructions which areas of façade paint should be removed. Peeling, scarping and cleaning must be performed in the manner not to damage the façade walls.</p> <p>The work item includes all the work and material for the correct execution of the work item, all with the use of the necessary scaffolding.</p> <p>Calculation per m2 of removed facade paint layers.</p>		

BoQ Item	B1.29;B13.30	Unit	LS
Unit price definition	Careful dismantling and installation of cameras, antennas and other elements from the building facade		
Description			
Careful dismantling of cameras, antennas and other elements from the building façade. The unit price includes dismantling and storage of the dismantled elements on the location determined by the Contracting Authority. After competition of all façade works all dismantled installations and equipment should be carefully assembled and putted in function. All installations and equipment damaged by the Contractor will be replaced at its own expense.			
The unit price includes all the work, material, scaffolding and putting installations into operation.			
Calculation per lump sum.			

BoQ Item	B1.30;B13.12	Unit	m2
Unit price definition	Removing the oil-based paint from the walls		
Description			
Removing the old oil-based paint from the walls. The removal should be carried out carefully in order not to damage other layers of the walls. Collect all the rubble, remove it, load it on a truck and take it to the landfill.			
Calculation per m2 of wall from which the oil-based pain has been removed with transportation to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	B1.31	Unit	m'
Unit price definition	Making the channels for plumbing and sewage installations		
Description			
Making the channels in walls and floors for installation of new water and sewage pipes, regardless of the material from which the wall/floor is made (concrete, brick, etc.). Channels are up to 120 mm width and up to 300 mm depth. Collect all the waste, remove it, load it on a truck and take it to the landfill.			
Calculation per m' channel made.			

BoQ Item	B1.32	Unit	m'
Unit price definition	Making the channels for electrical installations		
Description			
Making the channels in walls and floors for installation of new electrical installations, regardless of the material from which the wall/floor is made (concrete, brick, etc.). Channels are up to 50 mm width and up to 100 mm depth. Collect all the waste, remove it, load it on a truck and take it to the landfill.			
Calculation per m' channel made.			

BoQ Item	B1.33	Unit	m3
Unit price definition	Making and expanding openings in the walls		
Description			
Demolition of walls of various thickness around the existing openings in order to expand the dimensions of existing openings, as well as making of new openings in masonry walls, all in accordance with the drawings. Demolition shall be done carefully with previous cutting in order not to damage the remaining part of the wall.			
The Contractor shall execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill.			
Calculation per m3 of demolished wall.			

BoQ Item	B2.1	Unit	m2
Unit price definition	Supply and cast in situ of blinding layer; C12/15, including formwork		
Description			
Supply and cast in situ of a blinding layer under new entrance portal foundations at the main entrance on the southeast side of the building, the canopy foundations on the northeast side of the building and the staircase slab of entrance 5 and entrance 6, with C12/15 concrete d=10cm. Calculation per m2 of concrete with included formwork, tools and all necessary material to complete the work item			

BoQ Item	B2.2;B23.1	Unit	m3
Unit price definition	Supply and cast in reinforced concrete frame around new openings in the walls; C25/30, including formwork and reinforcement		
<p>Description</p> <p>Supply and cast in situ of frame made in reinforced concrete around new opening in the walls. Dimensions of columns and beams are 20,0x30,0 cm, reinforcement in columns is ± 2RØ14, UØ8 / 20cm and in the beams ± 2RØ14, UØ8 / 20cm. The position includes anchoring to the existing concrete structure. The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work.</p> <p>Calculation per m3 of concrete, including formwork, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>			

BoQ Item	B2.3	Unit	m3
Unit price definition	Supply and cast in situ foundations of the new canopy; C25/30, including formwork and reinforcement		
<p>Description</p> <p>Supply and cast in situ foundations of the new canopy, with concrete C25/30. Dimensions of foundations are (L x W x H) 50x50x50cm and of the foundation beams (W x H) 20x20cm. The reinforcement for the foundation is $\pm R\varnothing 12/15$ and of the foundation beams $\pm R\varnothing 2/12$ and stirrups U8/20 cm.</p> <p>The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work.</p> <p>Calculation per m3 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>			

BoQ Item	B2.4	Unit	m3
Unit price definition	Supply and cast in situ columns of the new canopy; C25/30, including formwork and reinforcement		
<p>Description</p> <p>Supply and cast in situ columns of the new canopy; C25/30, including formwork and reinforcement</p> <p>Supply and cast in situ columns of the new canopy, with concrete C25/30. Columns has round cross section Ø20,0 cm. Reinforcement 68RØ14, UØ8/15cm.</p> <p>The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work.</p> <p>Calculation per m3 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>			

BoQ Item	B2.5	Unit	m3
Unit price definition	Supply and cast in situ beams of the new canopy; C25/30, including formwork and reinforcement		
Description	<p>Supply and cast in situ columns of the new canopy; C25/30, including formwork and reinforcement</p> <p>Supply and cast in situ columns of the new canopy, with concrete C25/30. Columns has round cross section Ø20,0 cm. Reinforcement 6RØ14, UØ8/15cm.</p> <p>The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work.</p> <p>Calculation per m3 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>		

BoQ Item	B2.6	Unit	m2
Unit price definition	Supply and cast in situ of slab d=12cm; C25/30, including formwork and reinforcement		
Description	<p>Supply and cast in situ of the slab of the new canopy with the concrete C25/30. Slab thickness is d=12cm. Reinforcement of the slab is mesh Q257 in the lower zone and in the upper zone at locations the supports and Q335. The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work.</p> <p>Calculation per m2 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>		

BoQ Item	B2.7	Unit	m2
Unit price definition	Supply and cast in situ of roof walls d=10cm; C25/30, including formwork and reinforcement		
Description	<p>Supply and cast in situ of the roof walls of the new canopy with the concrete C25/30. Wall is d=10cm. Reinforcement is ±2RØ10 and stirrups U8/20 cm.</p> <p>The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work.</p> <p>Calculation per m2 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>		

BoQ Item	B2.8	Unit	m3
Unit price definition	Supply and cast in situ of reinforced concrete ground slab d=12 cm; C25/30, including formwork and reinforcement		
Description			
Supply and cast in situ concrete of reinforced concrete ground slab d=12 cm, with concrete C25/30 as the part of the hallway and new canopy. Reinforcement with mesh ± Q188 in two zones. The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work.			
Calculation per m2 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.			

BoQ Item	B2.9;B23.2	Unit	m2
Unit price definition	Supply and cast in situ reinforced concrete ground slab d=20 cm; C25/30, including formwork and reinforcement		
Description Supply and cast in situ concrete of reinforced concrete ground slab d=20 cm, in the office of the director and secretary over the existing floor slab, with concrete C25/30. Reinforcement with mesh ± Q221. The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work. Calculation per m2 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.			

BoQ Item	B2.10	Unit	m2
Unit price definition	Supply and cast in situ reinforced concrete foundations of the entrance portal; C25/30, including formwork and reinforcement		
Description Supply and cast in situ concrete of reinforced concrete ground slab d=20 cm, in the office of the director and secretary over the existing floor slab, with concrete C25/30. Reinforcement with mesh ± Q221. The unit price includes all tools, formwork, materials, reinforcements, transport, work, curing and more, in accordance with the general description for this type of work. Calculation per m2 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.			

BoQ Item	B2.11	Unit	m3
Unit price definition	Supply and cast in situ reinforced concrete external staircase; C25/30, including formwork and reinforcement		
Description	<p>Supply and cast in situ of external staircase of the new entrance on the north side of the building, with concrete C25/30. The staircase has three steps, each 30 cm wide and 14,67 cm high. The width of the stairs is 200 cm. Reinforcement is with Q188 mesh. The unit price includes all tools, formwork, materials, reinforcements, transport, work, all in accordance with the general description for this type of work.</p> <p>Calculation per m3 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>		

BoQ Item	B2.12	Unit	m3
Unit price definition	Supply and cast in situ reinforced concrete external staircase; C25/30, including formwork and reinforcement		
Description	<p>Supply and cast in situ of new external staircase at the entrance 5, with concrete C25/30. The dimension of the stairs is (L x W x H) 90,0x60,0x20,0 cm. Reinforcement is mesh \pm Q188. The unit price includes all tools, formwork, materials, reinforcements, transport, work, all in accordance with the general description for this type of work.</p> <p>Calculation per m3 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>		

BoQ Item	B2.13	Unit	m3
Unit price definition	Supply and cast in situ reinforced concrete ground floor slab in the toilets, d=15cm; C25/30, including formwork and reinforcement		
Description	<p>Supply and cast in situ reinforced concrete slab d=15cm, with concrete C25/30, in the toilets after installation of new sewage and plumbing pipes. Before concreting the pipes shall be protected with layer of sand. Reinforcement is mesh \pm Q188. The slab is cast in the width of the channel for pipes. Unit price includes all tools, formwork, materials, reinforcements, transport, work, all in accordance with the general description for this type of work.</p> <p>Calculation per m3 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>		

BoQ Item	B2.14;B23.3	Unit	m3
Unit price definition	Supply and cast in situ reinforced concrete walls d=20 cm on the flat roof; C25/30, including formwork and reinforcement		
<p>Description</p> <p>Supply and cast in situ reinforced concrete walls d=15 cm on the flat roof, with concrete C25/30. Before concreting all layers under the walls should be cleaned. The Contractor shall drill holes Ø14mm at distance of 15 cm on both side of wall, fill it with anchor fix and install anchors made of Ø12 rebar bars, length 20cm at distance of 15 cm. The reinforcement of the wall is mesh ±Q188. The unit price includes all tools, formwork, materials, reinforcements, transport, work, all in accordance with the general description for this type of work. Calculation per m3 of concrete, including formwork, reinforcement, scaffolding, supports, tools and all necessary material for complete execution of the work item.</p>			

BoQ Item	B3.1	Unit	m3
Unit price definition	Supply and construction of walls with 30 cm thickness AAC wall blocks, including girders		
<p>Description</p> <p>Supply and construction of walls with 30 cm thickness ACC-gas concrete wall block. The construction of walls and material used for join mortar must be in accordance with the instructions of the block manufacturer. Connect the walls to the RC structure with steel anchors in the third row of height, and every second block of the last row must be fastened to the floor slab structure with a steel reinforcing anchor, in all respects according to the instructions of the block manufacturer.</p> <p>In the walls, execute tie-columns and tie-beams made of reinforced C25/30 concrete, reinforcement steel rebar $\pm 2\varnothing 14$ and 8/15 cm stirrups. Execute the tie-beams in all walls at the height of the door opening and on the top of parapets. Execute tie-columns on the side of all door openings where the cross section is small to be the installed in brick walls, on free ends of the wall, at intersection of walls, in the middle of walls longer than 5,0 m. All tie-beams and tie-columns are interconnected, and connected to the reinforced concrete structure. The cross section of tie-columns and tie-beams for 30cm thick walls is 30,0 x 30,0 cm.</p> <p>Tie-beams and tie-columns are not calculated separately but are included in the wall unit price together with reinforcement and formwork. The price per unit of measure includes all the obligatory seismic protection blocks, necessary tools, work, transport, material, scaffolding and any other item to competition of item.</p> <p>Calculation per m3 of executed wall with opening deduction.</p>			

BoQ Item	B3.2	Unit	m3
Unit price definition	Supply and construction of walls with 25 cm thickness AAC wall blocks, including girders		
<p>Description</p> <p>Supply and construction of walls with 25 cm thickness ACC-gas concrete wall block. The construction of walls and material used for join mortar must be in accordance with the instructions of the block manufacturer. Connect the walls to the RC structure with steel anchors in the third row of height, and every second block of the last row must be fastened to the floor slab structure with a steel reinforcing anchor, in all respects according to the instructions of the block manufacturer.</p> <p>In the walls, execute tie-columns and tie-beams made of reinforced C25/30 concrete, reinforcement steel rebar $\pm 2\varnothing 14$ and 8/15 cm stirrups. Execute the tie-beams in all walls at the height of the door opening and on the top of parapets. Execute tie-columns on the side of all door openings where the cross section is small to be the installed in brick walls, on free ends of the wall, at intersection of walls, in the middle of walls longer than 5,0 m. All tie-beams and tie-columns are interconnected, and connected to the reinforced concrete structure. The cross section of tie-columns and tie-beams for 20 cm thick walls is 20,0 x 20,0 cm.</p> <p>Tie-beams and tie-columns are not calculated separately but are included in the wall unit price together with reinforcement and formwork. The price per unit of measure includes all the obligatory seismic protection blocks, necessary tools, work, transport, material, scaffolding and any other item to competition of item.</p> <p>Calculation per m3 of executed wall with opening deduction.</p>			

BoQ Item	B3.3	Unit	m2
Unit price definition	Supply and construction of walls with 15 cm thickness AAC wall blocks, including girders		
Description			
<p>Supply and construction of walls with 15 cm thickness ACC-gas concrete wall block. The construction of walls and material used for join mortar must be in accordance with the instructions of the block manufacturer. In the walls, execute tie-columns and tie-beams made of reinforced C25/30 concrete, reinforcement steel rebar $\pm 2\varnothing 14$ and 8/15 cm stirrups. Execute the tie-beams in all walls at the height of the door opening. Execute tie-columns on the side of all door openings where the cross section is small to be the installed in brick walls. All tie-beams and tie-columns are interconnected, and connected to the reinforced concrete structure. The cross section of tie-columns and tie-beams for 10 cm thick walls is 15,0 x 20,0 cm.</p> <p>Tie-beams and tie-columns are not calculated separately but are included in the wall unit price together with reinforcement and formwork. The price per unit of measure includes all the obligatory seismic protection blocks, necessary tools, work, transport, material, scaffolding and any other item to competition of item.</p> <p>Calculation per m2 of executed wall with opening deduction.</p>			

BoQ Item	B3.4	Unit	m2
Unit price definition	Supply and construction of walls with 12 cm thickness AAC wall blocks, including girders		
Description			
<p>Supply and construction of walls with 12 cm thickness ACC-gas concrete wall block. The construction of walls and material used for join mortar must be in accordance with the instructions of the block manufacturer. In the walls, execute tie-columns and tie-beams made of reinforced C25/30 concrete, reinforcement steel rebar $\pm 2\varnothing 12$ and 8/15 cm stirrups. Execute the tie-beams in all walls at the height of the door opening. Execute tie-columns on the side of all door openings where the cross section is small to be the installed in brick walls. All tie-beams and tie-columns are interconnected, and connected to the reinforced concrete structure. The cross section of tie-columns and tie-beams for 12 cm thick walls is 12,0 x 20,0 cm.</p> <p>Tie-beams and tie-columns are not calculated separately but are included in the wall unit price together with reinforcement and formwork. The price per unit of measure includes all the obligatory seismic protection blocks, necessary tools, work, transport, material, scaffolding and any other item to competition of item.</p> <p>Calculation per m2 of executed wall with opening deduction.</p>			

BoQ Item	B3.5;B14.1	Unit	m2
Unit price definition	Supply and installation-application of a reinforcement cement screed		
Description			
<p>Execution of cement screed with 300 kg/m3 cement content, steel mesh and polypropylene fibers, evenly distributed in the cement screed in three dimensions, over the thermal insulation, as a leveling layer for application of designed floorings.</p> <p>The cement screed is planned for floor leveling between deferent room and on flat roofs for to creation of slope layers. Average thickness of cement screed is 4cm, 5cm,6cm and 8cm depending on existing leveling's. In the toilets, the liner should be installed at slope toward drains. Final top surface shall be cleaned, and the dust removed, and it shall be levelled using cement-based levelling compound, which should be allowed to dry.</p> <p>Calculation per m2 of finished cement screed, calculating all work and material.</p>			

BoQ Item	B3.6;B14.2	Unit	m2
Unit price definition	Supply and covering - plastering single layer rough plaster with 350 kg/m ³ cement content		
<p>Description</p> <p>Supply and covering - plastering walls and ceilings with single layer rough plaster with 350kg/m³ cement content. Prior plastering, clean and patch the surfaces and install the edge profiles. Plastering of edges around the openings is covered in unit price and will not be paid separately. Mortar covered surfaces must be flat, smooth, with sharp edges and free from substances that are susceptible to swelling.</p> <p>The price includes all work and material with edge profiles, transport, scaffolding and work.</p> <p>The price includes the preparation of the existing walls for proper plastering (removal of damaged parts, applying the substrate and other necessary pre-work).</p> <p>Calculation per m2 of covered surface.</p>			

BoQ Item	B3.7	Unit	m2
Unit price definition	Supply and covering -plastering interior walls with rough and fine mortar with 250/350 kg lime/cement mixture content		
<p>Description</p> <p>Supply and covering -plastering interior walls with rough and fine mortar with 250/350 kg lime/cement mixture content. Prior plastering, clean and patch the surfaces and install the edge profiles. Plastering of edges around the openings is covered in unit price and will not be paid separately. Mortar covered surfaces must be flat, smooth, with sharp edges and free from lime flakes and other substances that are susceptible to swelling.</p> <p>The price includes all work and material with edge profiles, transport, scaffolding and work.</p> <p>The price includes the preparation of the existing walls for proper plastering (removal of damaged parts, applying the substrate and other necessary pre-work).</p> <p>Calculation per m2 of covered surface.</p>			

BoQ Item	B3.8;B14.4	Unit	m'
Unit price definition	Supply and covering/plastering chases (channels), up to 8 cm wide		
Description			
Plastering the chases (channels), executed for installation of installations in in existing walls, up to 8cm wide, with mortar.			
Calculation per m1 plastered chases including all material, work and scaffolding			

BoQ Item	B4.1;B15.1	Unit	m2
Unit price definition	Supply and installation of hydro insulation of two-component fiber-reinforced mortar		
<p>Description</p> <p>Supply and installation of two-component fiber-reinforced mortar, in sanitary facilities, with very low elastic modulus, containing fine particle size selected aggregates and adequate additives for waterproofing. Waterproofing is applied in two layers, using a trowel, with a maximum recommended thickness of 2 mm, all according to the manufacturer instructions. Waterproofing on the walls in the toilettes shall rise to 15 cm above the finished floor level, including the fiberglass meshes on angels of the toilets. Particular attention shall be paid to sealing the around the floor drains and opening for installation to prevent leakage. Calculation per m2 installed hydro insulation, lifting along walls included in the unit price.</p>			

BoQ Item	B4.2	Unit	m2
Unit price definition	Supply and installation of hydro insulation made from hydro-isolation membrane coated from both sides with a high-quality bitumen mass on ground floor slab		
<p>Description</p> <p>Supply and installation of hydro insulation on ground floor made from hydro-isolation membrane coated from both sides with a high-quality bitumen mass, produced from special bitumen, enriched with elasticizes based on specially chosen rubbers and quality mineral fillers, in two layers each minimum 4 mm of thicknesses. The HI should be raised along the walls min. 10 cm, around the perimeter of the room.</p> <p>The installation of horizontal waterproofing on the ground floor plate with these layers: -one layer of hot coating of bitumen or bituminous masses with a consumption of 1.5kg/m2 on a cleaned and flat surface,</p> <p>-first layer of bitumen waterproofing strips d=4mm, laid on hot bitumen with welded overlaps, 10 cm wide</p> <p>- second layer of bitumen waterproofing strips d=4mm, over first layer with overlaps 10 cm wide, 100% welded to the first layer</p> <p>Welding of bitumen strips is performed by heating the flame strip with an open flame, softening the bituminous mass of the surface to be glued and gluing with its own mass to the substrate.</p> <p>Calculation per m2 of horizontal projection of installed hydro insulation, lifting along walls included in the unit price.</p>			

BoQ Item	B4.3;B15.2	Unit	m2
Unit price definition	Supply and installation of hydro insulation of synthetic roof waterproofing membrane based on premium-quality polyvinyl chloride (PVC)		
<p>Description</p> <p>Supply and installation of multi-layer, synthetic roof waterproofing sheet based on premium-quality polyvinyl chloride (PVC) with inlay of glass non-woven according to EN 13956, above the slope layer made of cement screed. The membrane is elastic UV resistant, for ballasted roofs, thickness 1,5mm. The substrate surface must be uniform, smooth and free of any sharp protrusions or burrs, etc. The membrane is loosely laid and covered with ballast, mechanically fixed at the roof perimeter to keep membrane in place. Overlap seams are welded by manual hot air welding machines and pressure rollers with controlled hot air temperature capability of minimum 600 °C. The effective width of welded overlaps should be minimum 30 mm. The seams must be mechanically tested with screw driver or steel needle to ensure the integrity/completion of the weld. Any imperfections must be rectified by hot air welding. All procedures should be performed in accordance with the manufacturer's instructions. The work item includes the sealing of all penetrations through the insulation and vertical structural elements, horizontal drains through the concrete slab structure and parapets. The unit price includes all materials, works and accompanying material necessary for proper installation.</p> <p>Calculation per m2 of installed insulation</p>			

BoQ Item	B4.4;B15.3	Unit	m2
Unit price definition	Supply and installation of thermal insulation on floors and flat roofs, extruded polystyrene		
Description Supply and installation on all floor slabs of thermal insulation boards made of extruded polystyrene with a smooth surface structure, thickness 20mm and 50mm. On the upper side of the isolation PE sheet should be applied. TI shall be produced by appropriate manufacturer and the working conditions, application equipment etc. shall all be strictly in accordance to the manufacturer's instructions. Calculation per m2 of installed thermal insulation including PE sheet.			

BoQ Item	B4.5	Unit	m2
Unit price definition	Supply and installation of expanded polystyrene thermal insulation on façade walls and columns, d=50mm		
<p>Description</p> <p>Supply and installation on all façade walls and columns of thermal insulation boards made of expanded polystyrene with a smooth surface structure, thickness 50mm.</p> <p>The surface of the substrate must be dry, even and free of grease and dust as well as free of any residual substances that may reduce the adhesion. Check the stability of existing coatings (paint coatings and old plasters) and compatibility with adhesive, and remove unstable coatings completely if necessary. Ensure that all openings (interface gaps) are sealed.</p> <p>The contractor is solely responsible for inspecting the condition of the substrate and the on-site conditions.</p> <p>The ambient temperature, substrate and material temperature must be at least +5 °C and may not exceed +30 °C during the entire application, drying and setting phase.</p> <p>Unfavorable weather influences such as high temperatures, wind or direct sunlight can change the application conditions.</p> <p>The surface of the wall must be flat, dry and free of grease and dust.</p> <p>Unevenness in the substrate up to a maximum of 20 mm can be covered with the adhesive if dowelling is used in addition to adhesive bonding. Major unevenness should be equalized using a suitable plaster layer or by staggering the insulation panel thickness. The bond strength of the plaster should be tested after it has set.</p> <p>Edge ribbon and dab bonding is performed by hand. The adhesive bonding surface with the substrate is ≥ 40 % after pressing in the insulation panels. Apply an approx. 50 mm wide ribbon of mortar around the perimeter and 3 palm-sized adhesive dabs or strips on the insulation panel.</p> <p>Install the plinth connection end profile horizontally and fix using anchor nails at spacings of approx. 300 mm. Compensate for substrate tolerances with washers. Connect the joints and the plinth connection end profiles with H connectors. Apply insulation panels immediately to the fresh adhesive by pushing, floating and pressing.</p> <p>Apply the insulation panels precisely and continuously starting from the bottom with the joints staggered at ≥ 100 mm (half panel length recommended for joint staggering). Cross joints, e.g., on opening corners should be avoided.</p> <p>The wall must be sufficiently stable to allow the use of dowels. The number of dowels is 6/m2. Application of the dowels can commence after the adhesive has hardened sufficiently.</p> <p>Calculation per m2 of installed thermal insulation.</p>			

BoQ Item	B4.6	Unit	m2
Unit price definition	Supply and installation of stone wool boards		
<p>Description</p> <p>Supply and installation of thermal insulation on the ceilings and roof of building “B” made of stone wool bords, thickness 50/80mm.</p> <p>The boards are on one side aluminum foil facings and on other side glass tissue facing. Thermo insulation shall be install under the working conditions, application equipment etc. strictly in accordance to the manufacturer’s instructions. Unit price includes all works and material including permeable membrane as a vapor barrier and scaffolding.</p> <p>Calculation per m2 of installed thermal insulation including permeable membrane.</p>			

BoQ Item	B5.1;B16.1	Unit	m'
Unit price definition	Supply and installation of metal sheets, 0,55 mm thickness		
<p>Description</p> <p>Supply and installation of coping metal sheets made of hot-dip galvanized steel sheet with polymer coating sheets, 0,55 mm thick, color RAL 7004 and RAL7025. Metal sheets are installed coping cover, flashing and counterflashing, edge metal sheets and cladding of upper surface of façade beams. Developed width vary and are: up to 30cm, up to 35cm, up to 40 cm, up to 45 cm, up to 55 cm, up to 70 cm and up to 75cm, up to 90 cm.</p> <p>Unit price include all work, material, preparation of the substrate, binding and sealing and installation of tar paper as underlayer.</p> <p>Calculation per m1 of installed sheet metal.</p>			

BoQ Item	B5.2;B16.2	Unit	m'
Unit price definition	Supply and installing of roof covering made of galvanized trapezoidal metal sheet with polymer coating, 0,55mm thickness		
Description Supply and installing of roof covering, at Entrance 2, made of galvanized trapezoidal metal sheet, TR35/165 with polymer coating, 0,55mm thickness, color RAL 7016. The covering is installed over the metal construction on the Entrance 2, and roof of building “B”. Unit price include all work, material, binding, sealing materials and use of scaffold. Calculation per m2 of covered surface.			

BoQ Item	B5.3;B16.3	Unit	m'
Unit price definition	Supply and installation of vertical rainwater downpipes, made of galvanized steel sheet with polymer coating, dim. 120x120mm, color RAL 7004, RAL 7025		
Description	<p>Production and installation of vertical rainwater downpipes made of galvanized metal sheet with polymer coating, cross sections: 100/100, 120/120mm and 1,5 cm overlap at cut, color RAL 7025 and RAL 7004. The soldering of the overlaps shall be by preparing pipes by applying single or double gaskets at both ends of the pipes. Iron removable galvanized clamps with a cross section of 3 x 20 mm shall be installed on pipes at 1-meter intervals. The pipes shall be clamped up and installed in the locations in accordance with the design, and their clamps shall be tightened with galvanized machine screws to complete the installation of rainwater pipes on the walls. Unit prize includes all works, material, curves, connection of downpipes with roof drains and horizontal gutters, installation of boiler (if needed), the fitting, connecting material and scaffolding. Calculation per m1 of the executed rainwater downpipes</p>		

BoQ Item	B5.4;B16.4	Unit	m'
Unit price definition	Supply and installation of horizontal gutter, made of galvanized metal sheets with polymer coating, d=0,55 mm, color RAL 7004, RAL 7025		
Description	<p>Production and installation of horizontal gutter made of galvanized metal sheets with polymer coating sheets, developed width up to 45 cm and up to 60 cm, thickness d=0,55mm, color RAL 7004 and RAL 7025.</p> <p>The unite price includes all the work, material, scaffolding, installation of gutter and execution of expansion joints, sealing with permanently elastic putty.</p> <p>Calculation per m1 of installed horizontal gutter.</p>		

BoQ Item	B5.5	Unit	m2
Unit price definition	Supply and installation of façade cladding, made of aluminum composite panels d=4 mm, color RAL 7025		
Description	<p>Supply and installation of ventilated facade cladding (columns and portal) with of aluminum composite panels d=4 mm, all in accordance drawings given in the design. Composite panels consisting of two aluminum cover sheets d=0,5mm and a mineral-filled core with polymer adhesives, non-combustible >90% mineral content core, total thickness d=4mm, color RAL 7025.</p>		

Aluminum composite panel are installed on aluminum profiles fixed on the existing construction. Between panels gaps $d=2,00$ mm shall be leaved to allow the material to change geometric dimensions with temperature changes.

Prior the ordering of materials and execution of this work item, the contractor must prepare shop drawings which will be subject of approval of the supervisor.

The price includes all work and material, aluminum substructure, fastenings, scaffolding, and preparation of the existing walls/columns (removal of damaged parts and other necessary pre-work).

Calculation per m^2 of covered surface.

BoQ Item	B6.1-B6.44;B17.1-B17.12	Unit	PCS
Unit price definition	External doors, windows and glass walls of 5-chamber PVC profiles		
<p>Description</p> <p>The installation of doors, windows and curtain walls of 5-chamber PVC profiles, color RAL 9010 (Pure White) with different dimensions and openings (see schemes). Doors and windows are equipped with a suitable opening-locking mechanism, frame, and hinges of high quality.</p> <p>General thermal transition coefficient for the doors and windows shall be as $U = 1,30 \text{ W/m}^2\text{K}$. The detailed requirements for each item (glazing, opening, etc.) are given in the schemes in Main Design and Volume 5 of this Tender documentation.</p> <p>The glazing should be FLOT glass, $U= 1,0 \text{ W/m}^2\text{K}$, solar $g_{\text{max}}=0,42$ with these layers:</p> <p>4.4.2 mm laminated +12 mm Argon gas+ 4 mm, or</p> <p>6 mm+16 mm Argon gas+ 4 mm</p> <p>The technical properties of the 5-chamber PVC profile, which shall be used are as follows:</p> <p>Construction depth: 70 mm;</p> <p>Number of chambers: 5;</p> <p>Thermal insulation: $U_{\text{fmax}} = 1,4 \text{ W/m}^2\text{K}$;</p> <p>Air permeability: Class 4 to EN 12207;</p> <p>Water-tightness against heavy rain up to class 9A to EN 1027, EN 12208;</p> <p>Resistance to wind load: Class B5, according to EN 12210, EN 12211</p> <p>Burglar resistance: up to RC2, according to EN 1267-1630</p> <p>Sealing method: Perimetrical at 3 levels with EPDM gaskets</p> <p>Glazing type: Double</p> <p>The glazing and opening the windows and doors according to the schemes. Opening of the upper windows should be mechanism with bar, handle mounted on height of 1,40 m from the floor.</p> <p>In unit prize of window and curtain walls is included PVC window sill under window/wall curtain, developed width up 30 cm - RAL 9010, as described in schemes. In unit prize of door is included threshold profile, thickness up to 10 mm.</p> <p>The unit price includes all work, material, hardware, profiles, glazing, PVC window sill, threshold profile and the use of scaffolding.</p> <p>Calculation per piece of installed item.</p>			

BoQ Item	B6.45-B6.46	Unit	PCS
Unit price definition	Steel metal door with grille		
<p>Description</p> <p>The metal doors shall be executed as given in the scheme in the main design.</p> <p>Doors should be made using square and rectangular profiles (50x50x3 mm) and sheet and flat bars should be added according to the project design and specifications when necessary; The filling of the door sash, between the two metal sheets, is rock wool fireproof class A1. In doors is built-in steel door grille dimensions 50x20 cm. Locks, bolts and other similar materials should be mounted with clamp steel or other accessories.</p> <p>The unit price includes all work, material, hardware and corrosion protection.</p> <p>Calculation per piece of installed doors.</p>			

BoQ Item	B6.47-B6.48	Unit	PCS
Unit price definition	Horizontal aluminum fixed sunshades		
<p>Description</p> <p>The fixed sunshades are made aluminum elliptical lamellas 220 mm wide, weighting 2,825 kg/m1. The lamellas are mounted horizontally 3/7 rows, at vertical distance of 250 mm, at angle of 30 degrees.</p> <p>The sunshades are mounted on aluminum substructure fixed in concrete beams and columns. The unit price includes all work, material and use of the scaffolding.</p> <p>Calculation per piece of installed sunshades.</p>			

BoQ Item	B6.49-B6.80;B17.17-B17.28	Unit	PCS
Unit price definition	Internal doors and windows of aluminum profiles		
Description			
<p>The installation of doors, windows and glass walls shall be done with aluminum profiles without thermal barriers, RAL 7035 (Light Grey-mat), according to EN or ISO standards with different dimensions and openings (see schemes).</p> <p>Doors and windows are equipped with a suitable opening-locking mechanism, frame, and hinges of high quality.</p> <p>The glazing is different depending of the propose of the rooms (see schemes):</p>			

- chipboard coated on both sides with melamine foils, d=18mm
- chipboard coated with melamine foils 18mm and laminated glass 3.3.1 dim. 25x85 cm
- 3.3.1. laminated glass
- d=4,0 mm float glass
- aluminum panel d=20 mm (EPS- expanded polystyrene lined with Al metal sheet)

The technical properties of the aluminum profile without thermal barrier protection, which shall be used are as follows:

- Frame width: 50 mm,
- Sash width: 59 mm,
- Air permeability: Class 2, according to EN 1026, EN 12207
- Watertightness: Class 4A (600 Pa), according to EN 1027, 12208
- Resistance to wind loan: Class A2 (800 Pa), according to EN 12210, EN 12211
- Glazing type: Single, double

Opening the windows according to the schemes while the opening of the upper windows should be done on height of 1,4 m from the floor as bar connection.

The unit price includes all work, material, hardware, sandblasted decorative tapes.

Calculation per piece of installed item.

BoQ Item	B6.81-B6.85;B17.29	Unit	PCS
Unit price definition	Toilet partitions		
<p>Description</p> <p>The construction of toilet partitions of High-Pressure Laminate (HPL) panels with aluminum metal frame with a height of h = 2,10 m, in accordance with schemes given in Main design.</p> <p>The toilet partitions shall be vandal resistant and completely waterproof. Compact High Pressure Laminated (HPL) panels, according to manufacturer specification.</p> <p>Partitions shall have heavy duty fittings - headrail, wall and pilaster brackets, wide base cubicle legs and are raised from the 160 mm floor, hidden safety hinges and robust 'single action' latches.</p> <p>The cubicle material shall be shock-resistant, damp proof and rest prevention, waterproof, fireproof, resistance to bacterium, free from peculiar smell, easy to clean and maintain, and durable and vandal resistant.</p> <p>Toilet partitions should be floor-mounted, and fixed to the wall.</p> <p>Hinges are surface mounted, and strikes/keepers are round style. Slide latches, coat hooks, and bumpers are surface mounted. Door pulls are though bolted.</p> <p>The unit price includes all work, material, hardware and accessories.</p> <p>Calculation per piece of installed item.</p>			

BoQ Item	B6.86-B6.87	Unit	m'
Unit price definition	Fence and handrail		
Description	<p>The fence and handrail shall be executed as steel metal profiles all in accordance with the scheme in the main design.</p> <p>Fence is made of steel profiles: Ø50x2 mm for handrail, newel post Ø40x1,5 mm, baluster Ø20x1,2mm, guard rail Ø30x1,5mm. The connection of fence with concrete is made with anchors and anchor plates d=10mm and with steel stair by welding to anchor plates. Protect steel profiles with appropriate anti-corrosion protection. Final color is RAL 7016. The handrail height from the finish floor h=100cm.</p> <p>The staircases handrail is made of steel profiles Ø50x2 mm, fixed to wall fixed to the wall by 15 mm spacers. Coat steel profiles with appropriate anti-corrosion protection. Final color is RAL 7016. The handrail height from the finish floor h = 100 cm.</p> <p>The unit price includes all work, material and corrosion protection.</p> <p>Calculation per m1 of installed fence/handrail.</p>		

BoQ Item	B7.1-B7.2;B18.1-B18.2	Unit	m2
Unit price definition	Supply and installation - Flooring with 2 mm joint gaps using first quality, matte, non-glazed porcelain tiles with any color, pattern and surface characteristics (using tile adhesive)		
Description	<p>Floor:</p> <ul style="list-style-type: none"> - Unglazed porcelain tile: first class, abrasion resistant to PEI IV, slippery class (R) 10 etc. - Nominal Facial Dimensions: 330x330x8 and 450x450x8 mm - Provided in the following areas: kitchenette and toilets etc. as indicated in the main design <p>Wall:</p> <ul style="list-style-type: none"> - Porcelain glazed wall tiles: first class, finish with strait edges- abrasion resistant to PEI IV, slippery class, etc. - Nominal Facial Dimensions: 330x330x8 and 450x450x8 mm, - laying height: up to ceiling - Provided in the following areas: toilets, storage etc. as indicated in the main design <p>The supply and installation of adhesive and porcelain tiles (first class) on the floors and walls of toilets and kitchens and other rooms, the project should be considered. The placement of tiles should be made without working "join" (2-3 mm permissible joint), the type and color of tiles and grout of joints is determined according to the supervisor's request. The material used shall be of high quality and application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.</p>		

Unit price includes all works, material, preparatory work, preparation and cleaning of the substrate and edge PVC moldings in color of tiles.
Calculation per m2 of installed ceramic tiles.

BoQ Item	B7.3;B18.3.1	Unit	m2
Unit price definition	Supply and installation - Flooring with 2 mm joint gaps using first quality, matte, non-glazed ceramic granite tiles in 60 x 60 cm nominal dimensions and with any color, pattern and surface characteristics (using tile adhesive)		
Description	<p>Ceramic Granite shall be made from naturally occurring constituents - refined clays, quartz, feldspars and metal oxides, dry pressed at extremely high pressures, typically over 12,000 tones and then fired at 1260°C until irreversibly fused.</p> <p>First class granite tiles abrasion resistant to PEI IV, slippery class (R) 10 etc.</p> <p>Nominal Facial Dimensions: 300x300x10 and 600x600x10 mm</p> <p>Granit tiles for staircase with factory built-in anti-slip tape.</p> <p>Provided in the following areas: windbreak, hallway, hall, staircase, buffet, shop, equipment storage. as indicated in the main design</p> <p>The supply and installation of adhesive and granite tiles (first class) on the floors/stairs, according to the main design. The placement of tiles should be made without working "join" (2 mm permissible joint), the type and color of tiles and grout of joints is determined according to the supervisor's request. Around of perimeter of room install edge tile, height d=8,0 cm, of same material as floor. The material used shall be of high quality and application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.</p> <p>Unit price includes all works, material, preparatory work, preparation and cleaning of the substrate.</p> <p>Calculation per m2 of installed granite tiles and m1 installed edge perimeter tiles.</p>		

BoQ Item	B7.3.2;B18.3.2	Unit	m'
Unit price definition	Supply and installation - Flooring with 2 mm joint gaps using first quality, matte, non-glazed ceramic granite tiles in 60 x 60 cm nominal dimensions and with any color, pattern and surface characteristics (using tile adhesive)		
Description			
<p>Ceramic Granite shall be made from naturally occurring constituents - refined clays, quartz, feldspars and metal oxides, dry pressed at extremely high pressures, typically over 12,000 tones and then fired at 1260°C until irreversibly fused.</p> <p>First class granite tiles abrasion resistant to PEI IV, slippery class (R) 10 etc.</p> <p>Nominal Facial Dimensions: 300x300x10 and 600x600x10 mm</p> <p>Granit tiles for staircase with factory built-in anti-slip tape.</p> <p>Provided in the following areas: windbreak, hallway, hall, staircase, buffet, shop, equipment storage. as indicated in the main design</p> <p>The supply and installation of adhesive and granite tiles (first class) on the floors/stairs, according to the main design. The placement of tiles should be made without working “join” (2 mm permissible joint), the type and color of tiles and grout of joints is determined according to the supervisor’s request. Around of perimeter of room install edge tile, height d=8,0 cm, of same material as floor. The material used shall be of high quality and application equipment etc. shall all be strictly in accordance to the manufacturer’s instructions.</p> <p>Unit price includes all works, material, preparatory work, preparation and cleaning of the substrate.</p> <p>Calculation per m2 of installed granite tiles and m1 installed edge perimeter tiles.</p>			

BoQ Item	B7.4.1B7.4.2B7.4.4; B18.4.1,B18.4.2,B18.4.	Unit	m'
Unit price definition	Supply and installation - Flooring of internal staricases with 2 mm joint gaps using first quality, matte, non-glazed ceramic granite tiles with any color, pattern and surface characteristics (using tile adhesive)		
<p>Description</p> <p>Ceramic Granite shall be made from naturally occurring constituents - refined clays, quartz, feldspars and metal oxides, dry pressed at extremely high pressures, typically over 12,000 tones and then fired at 1260°C until irreversibly fused.</p> <p>First class granite tiles abrasion resistant to PEI IV, slippery class (R) 10 etc.</p> <p>Nominal Facial Dimensions: 300x300x10 and 600x600x10 mm</p> <p>Granit tiles for staircase with factory built-in anti-slip tape.</p> <p>Provided in the following areas: windbreak, hallway, hall, staircase, buffet, shop, equipment storage. as indicated in the main design</p> <p>The supply and installation of adhesive and granite tiles (first class) on the floors/stairs, according to the main design. The placement of tiles should be made without working “join” (2 mm permissible joint), the type and color of tiles and grout of joints is determined according to the supervisor’s request. Around of perimeter of room install edge tile, height d=8,0 cm, of same</p>			

material as floor. The material used shall be of high quality and application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.
Unit price includes all works, material, preparatory work, preparation and cleaning of the substrate.
Calculation per m1 of installed granite tiles and m1 installed edge perimeter tiles.

BoQ Item	B7.4.3;B18.4.3	Unit	m2
Unit price definition	Supply and installation - Flooring of internal staircases with 2 mm joint gaps using first quality, matte, non-glazed ceramic granite tiles with any color, pattern and surface characteristics (using tile adhesive)		
<p>Description</p> <p>Ceramic Granite shall be made from naturally occurring constituents - refined clays, quartz, feldspars and metal oxides, dry pressed at extremely high pressures, typically over 12,000 tones and then fired at 1260°C until irreversibly fused.</p> <p>First class granite tiles abrasion resistant to PEI IV, slippery class (R) 10 etc.</p> <p>Nominal Facial Dimensions: 300x300x10 and 600x600x10 mm</p> <p>Granit tiles for staircase with factory built-in anti-slip tape.</p> <p>Provided in the following areas: windbreak, hallway, hall, staircase, buffet, shop, equipment storage. as indicated in the main design</p> <p>The supply and installation of adhesive and granite tiles (first class) on the floors/stairs, according to the main design. The placement of tiles should be made without working “join” (2 mm permissible joint), the type and color of tiles and grout of joints is determined according to the supervisor’s request. Around of perimeter of room install edge tile, height d=8,0 cm, of same material as floor. The material used shall be of high quality and application equipment etc. shall all be strictly in accordance to the manufacturer’s instructions.</p> <p>Unit price includes all works, material, preparatory work, preparation and cleaning of the substrate.</p> <p>Calculation per m2 of installed granite tiles and m1 installed edge perimeter tiles.</p>			

BoQ Item	B7.5	Unit	m2
Unit price definition	Supply and installation - Flooring with 2 mm joint gaps using first quality, acid/chemical resistant ceramice (using tile adhesive)		
Description			
Floor/wall:			
Unglazed porcelain tile: first class, abrasion resistant to PEI IV, slippery class (R) 10 etc.			
Nominal Facial Dimensions: 200x100x10			
Provided in the following areas: kitchen as indicated in the main design			
The supply and installation of adhesive and acid/chemical resistant tiles on the floors and walls, as indicated in the main design. The placement of tiles should be made without working “join” (2-3 mm permissible joint), the type and color of tiles and grout of joints is determined according to the supervisor’s request. The material used shall be of high quality and application equipment etc. shall all be strictly in accordance to the manufacturer’s instructions.			
Unit price includes all works, material, preparatory work, preparation and cleaning of the substrate.			
Calculation per m2 of installed acid resistant tiles			

BoQ Item	B8.1;B19.1	Unit	m2
Unit price definition	Vinyl flooring Type A, in classrooms		
Description			
<p>Supply and installation of vinyl flooring for commercial use, in accordance with main design. Prior the installation of the vinyl flooring preparation of underlayer must be executed. The limit values of the unevenness of the finished substrate measured at a distance of 2m - 7 mm, 0,20m - 2 mm, and the allowable humidity of the screed is 2%.</p> <p>Technical characteristics of vinyl flooring:</p> <ul style="list-style-type: none">- total thickness: 2,00 mm according to EN ISO 24346- thickness of the wear layer: ≥ 1,00 mm according to EN ISO 24340- European classification: class 34-43 according to EN ISO 10874- fire rating: class Bfl-s1 according to EN 13501-1- slip resistance wet: class R10 according to DIN 51130- electrical propensity: <2kV according to EN ISO 1815- wear resistance: ≤2,0 mm3 according to EN 660.2- Wear group: T according to EN 651- residential indentation: ≤0,10 mm according to EN ISO 24343-1- color fastnesses: ≥6 degree according to EN 20105-B02- resistant to chemical product according to EN ISO 26987- total emissions of harmful substances (TVOC) after 28 days < 10 µg/m3 according to ISO 16000-6 <p>The vinyl flooring is installed by using by welding and adhesive on previously prepared surface. Color of welding electrode in color of floor.</p>			

Design type and color of flooring and MDF boards shall be chosen by Supervisor.
 The material used shall be of high quality and produced by appropriate manufacturer and the working conditions, application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.
 Unite price include all works, material, preparation of sublayer.
 Calculation per m2 of installed floor.

BoQ Item	B8.2;B19.2	Unit	m2
Unit price definition	Vinyl flooring Type B, in offices		
Description			
<p>Supply and installation of vinyl flooring for commercial use, in accordance with main design. Prior the installation of the vinyl flooring preparation of underlayer must be executed. The limit values of the unevenness of the finished substrate measured at a distance of 2m - 5 mm, 0.20 m - 2 mm, and the allowable humidity of the screed is 2%.</p> <p>Technical characteristics of vinyl flooring:</p> <ul style="list-style-type: none">- total thickness: 4,60 mm according to EN ISO 24346- thickness of the wear layer: 0,70 mm according to EN ISO 24340- European classification: class 34-42 according to EN ISO 10874- tile size: 500x500 mm according to EN 427- fire rating: class Bfl-s1 according to EN 13501-1- slip resistance wet: class R10 according to DIN 51130- wear resistance: ≤2,0 mm3 according to EN 660.2- impact sound insulation: 15 dB according to EN ISO 717-2- walking noise reduction ≤65 dB- residential indentation: ≤0,13 mm according to EN ISO 24343-1- castor chair test (type W) according to EN 425- color fastnesses: ≥6 degree according to EN 20105-B02- resistant to chemical product according to EN ISO 26987- total emissions of harmful substances (TVOC) after 28 days < 10 µg/m3 according to ISO 16000-6 <p>The vinyl flooring is installed with adhesive.</p> <p>On perimeter of the room install the MDF skirting boards.</p> <p>Design type and color of flooring and MDF boards shall be chosen by Supervisor.</p> <p>The material used shall be of high quality and produced by appropriate manufacturer and the working conditions, application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.</p> <p>Unite price include all works, material, preparation of sublayer.</p> <p>Calculation per m2 of installed floor with skirting boards.</p>			

BoQ Item	B8.3	Unit	m2
Unit price definition	Vinyl flooring Type C, in sports hall		
<p>Description</p> <p>Supply and installation of vinyl flooring for sports hall, in accordance with main design. Prior the installation of the vinyl flooring preparation of underlayer must be executed. Making a leveling layer with leveling compound up to 2 mm, on a dry, firm and flat surface. Limit unevenness of the finished substrate measured at a distance of 0.1 m to 2 mm, 1 m to 4 mm, 5 m to 10 mm, 10 m to 12 mm, 15 m to 15 mm is allowed, the permissible moisture content of the screed is 2% .</p> <p>Technical characteristics of vinyl flooring:</p> <ul style="list-style-type: none">- total thickness: 7,5 mm according to EN ISO 24346- weight: 4,7kg/m2 according to EN ISO 23997- Shock absorption: category P1 according to EN 14808- Vertical deformation: ≤3,5mm according to EN 14809- Sliding coefficient: 80-110 according to EN 13036-4- Ball bounce: ≥90% according to EN 12235- Abrasion resistance: ≤ 350 mg according to EN ISO 5470-1- Impact resistance: ≥ 8 N/m according to EN 1517- Indentation resistance: ≤ 0,5 mm according to EN 1516- Impact sound insulation: 18db according to EN ISO 717-2- Fire rating: Cfl-s1 according to EN 13501-1- Anti-bacterial activity: > 99% inhibits growth according to ISO22196- total emission of harmful substances (TVOC) after 28 days ISO 16000-6: < 100 µg/m3- Impact Protection Index (IPI) according to AC-P90-205 73% energy return according to NF P 90 203 ≥ 0.31 m/s <p>The vinyl flooring is installed with adhesive. The vinyl flooring is glued to the entire surface, adhesive according to the manufacturer's recommendation, standard approx. 350-400 gr/m2</p> <p>The material used shall be of high quality and produced by appropriate manufacturer and the working conditions, application equipment etc. shall all be strictly in accordance to the manufacturer's instructions.</p> <p>The floor shall have following certificates: IFF, EHF, IHF, FIBA, IBF, FIVB.</p> <p>Unite price include all works, material, preparation of sublayer.</p> <p>Calculation per m2 of installed floor</p>			

BoQ Item	B8.4;B19.3	Unit	m'
Unit price definition	Supply and installation of PVC-type flexible wall skirting		
<div>Description</div> <div>Supply and installation of flexible wall skirting, made of PVC, height 60 mm, width 13.5 mm, color according to the supervisor's choice. The skirting is glued adhesive according to the manufacturer's recommendation.</div> <div>Unite price include all works and materials.</div> <div>Calculation per m1 of installed skirting.</div>			

BoQ Item	B8.5	Unit	LS
Unit price definition	Supply and installation of oak wooden cladding of the internal steel stairs		
Description			
Supply and installation of oak wooden cladding of the internal steel staircase. The cladding is made of oak wood boards d=30mm, finally treated with colorless varnish. The stairs: 7 treads dim. 100x30 cm, risers dim. 100x15 cm and flat area 180x100 cm. The price includes materials and works. Calculation per lump sum.			

BoQ Item	B8.6;B19.4	Unit	m'
Unit price definition	Aluminum floor molding		
Description			
Supply and installation of the aluminum floor molding at the junction of different types of floorings. Installation with adequate adhesive. Color shall be chosen by Supervisor. Calculation per m1 of installed floor molding.			

BoQ Item	B8.7	Unit	m'
Unit price definition	Metal flashing for expansion joints		
Description			
Supply and installation of metal flashing for expansion joints, in walls and slabs, width approx. 100 mm and 180 mm.			
Metal flashing shall be provided with expansion joints on long runs to prevent deformation of the metal sheets. The selected metal shall not stain or be stained by adjacent materials or react chemically with them.			
Calculation per m1 of installed metal flashing.			

BoQ Item	B9.1;B20.1 B20.2	Unit	m2
Unit price definition	Supply and installation of suspended ceilings with gypsum boards d = 12.5 mm		
Description			
<p>Suspended ceiling system with 12,5mm single layer gypsum board, material supply and installation of gypsum board ceiling system in dry areas such as offices, common areas and etc.</p> <p>In the toilets 12,5 mm single layer moisture resistant gypsum board is designed, while in building “B” 2x12,55 mm double fire-protection gypsum board is designed.</p> <p>Metal grid suspension system shall be hot dip galvanized steel and coated with factory applied hot baked enamel paint/aluminum capping of approved color.</p> <p>Supporting Elements:</p> <ul style="list-style-type: none">- Galvanized steel perimeter profile or synced metal.- Upper support of the Suspension Grid, Primary support profile.- Lower support of the Suspension Grid, Ceiling profile.- Connecting Clip connects the Primary Support profile to the Ceiling Profile.- Accessories: Provide manufacturer's standard accessories. <p>Ceilings complete system (substructure and filling materials included) class – REI 30 and A2 qualification.</p> <p><u>Workmanship</u></p> <p>a) Working conditions, application equipment etc., shall all be strictly in accordance with the manufacturer’s instructions. Upper and Lower supports, connection clips and accessories, shall be installed in accordance with the manufacturer’s specifications. The ceiling aluminum strips shall be laid fastened to the runners in such a way that removal shall be allowed without using special tools.</p> <p>b) The contractor will perform the openings in the ceiling for the installation of lighting fixtures, grilles, frame openings, etc.</p>			

- c) Contractor shall install plasterboard around light fittings, air conditioning ducting, grilles, framed openings etc.
- d) A sample area of finished suspended ceiling work 3 × 2 meters shall be installed in an agreed location. Supervisor's approval for appearance and quality shall be obtained before proceeding. Materials shall be handled and stored as per manufacturers' recommendations. Materials shall be handled carefully and kept clean if they are later removed to access concealed services for the purposes of inspection or any other remedial work.
- e) Suspended ceiling shall be installed only if building is weather-tight, wet trades have finished their work and services are complete above ceiling level.
- f) The Contractor must liaise with the Supervisor and provide all necessary details of the work as needed to ensure coordination of all required installations such as; light fittings, air conditioning ducting, grilles and other related building elements and services. This also includes ceiling hanger inserts in concrete to provide suitable hanger spacing.
- g) Suspended ceiling materials shall be fixed to manufacturer's recommendations, ensuring compliance with design and performance requirements.
- h) Ceilings shall be set out accurately to give level soffits free from undulations and lipping, with all lines and joints straight and parallel to walls unless otherwise, specified.
- i) Gaps around pipes, ducts etc. passing through ceiling shall be sealed with tightly packed mineral fibre. Contractor shall ensure that junctions of ceilings with cavity barriers shall also be fully sealed.

Unit price include all works and materials necessary to complete the ceiling, and the execution of joints with joint tape, puttying and applying a thin smooth coat layer on joints.

Calculation per m2 of horizontal projection of completed ceiling.

BoQ Item	B9.2	Unit	m2
Unit price definition	Supply and installation of suspended ceilings with moisture resistant gypsum boards d = 12.5 mm		
Description			
The wall cladding with metal frame using moisture resistant gypsum wall boards will be applied to the plumbing where pipes are not located within the wall except mechanical reservations and/or areas reserved for mechanical equipment.			
Metal U-profiles shall be fixed to the ground and ceiling and also fixed at 60 cm intervals with screws and plastic dowel pins. Metal C-profiles shall be cut properly and 50 mm sound insulation tapes shall be affixed beneath TU28 profiles before fixing. U-nails shall be fixed on the existing wall at 60 cm intervals longitudinally, and at 125 cm intervals transversely maximum with screws and plastic dowel pins.			

12.5 mm moisture resistant gypsum wallboards shall be fixed on profiles with using 25mm drywall screws. Where necessary, the gypsum wallboards shall be shaped with cutting properly. Pre-filling the gaps larger than 3 mm shall be carried out and they shall be covered with joint plaster via using screw heads. Joint tapes will be affixed in the joints of plaster wall boards and covered walls will be made by applying joint filling plaster according to the project design and approved details.

The space between the profiles is filled with mineral wool with a density of 100 kg/m³.

Gypsum boards shall be in Types H2 in accordance with EN 5202, and have weight and density: 8.8kg/m²- 704kg/m³.

Unit price include all works and materials necessary to complete the cladding, including the execution of joints with joint tape, puttying and applying a thin smooth coat layer on joints.

Calculation per m² of finished cladding.

BoQ Item	B9.3	Unit	m ²
Unit price definition	Suspended ceiling system in sports hall		
Description	<p>The suspended ceiling consists of a glass wool panel and a metal substructure. The substructure consists of T profiles (main T profile 1200 mm, transverse T profile 3600 mm, transverse T profile 600 mm), hangers with fenders for hanging on the ceiling structure and clips for panels. Installation is done by inserting panels into the grill substructure in a panel grid. Joints are hidden. Raster of suspended ceilings are used to access installations that are located above the panel by simple dismantling.</p> <p>Unit price include all works and materials necessary to complete the ceiling.</p> <p>Calculation per m² of horizontal projection of completed ceiling</p>		

BoQ Item	B9.4	Unit	PCS
Unit price definition	Standard ceilings access panel		
Description	<p>Supply and installation of 12.5 standard ceiling access panel - for structures with 12.5 mm plaster boards; extrusion (anodized) AL frame; built-in plaster boards up to 600 mm installation with glue, ≥700mm installed with screws.</p> <p>Dimensions: 300x300 mm, 400x400 mmx 600x600 mm</p> <p>Calculation per piece of installed ceiling access panel.</p>		

BoQ Item	B9.5;B20.3	Unit	m2
Unit price definition	Supply and installation - Wall cladding with metal frame using moisture resistant gypsum boards (with 12.5-mm single layer gypsum wall board), up to 50 cm width		
<p>Description</p> <p>The wall cladding with metal frame using moisture resistant gypsum wall boards will be applied to the plumbing where pipes are not located within the wall except mechanical reservations and/or areas reserved for mechanical equipment.</p> <p>Metal U-profiles shall be fixed to the ground and ceiling and also fixed at 60 cm intervals with screws and plastic dowel pins. Metal C-profiles shall be cut properly and 50 mm sound insulation tapes shall be affixed beneath TU28 profiles before fixing. U-nails shall be fixed on the existing wall at 60 cm intervals longitudinally, and at 125 cm intervals transversely maximum with screws and plastic dowel pins.</p> <p>12.5 mm moisture resistant gypsum wallboards shall be fixed on profiles with using 25mm drywall screws. Where necessary, the gypsum wallboards shall be shaped with cutting properly. Pre-filling the gaps larger than 3 mm shall be carried out and they shall be covered with joint plaster via using screw heads. Joint tapes will be affixed in the joints of plaster wall boards and covered walls will be made by applying joint filling plaster according to the project design and approved details.</p> <p>The space between the profiles is filled with mineral wool with a density of 100 kg/m3.</p> <p>Gypsum boards shall be in Types H2 in accordance with EN 5202, and have weight and density: 8.8kg/m2- 704kg/m3.</p> <p>Unit price include all works and materials necessary to complete the cladding, including the execution of joints with joint tape, puttying and applying a thin smooth coat layer on joints.</p> <p>Calculation per m2 of finished cladding.</p>			

BoQ Item	B9.6	Unit	m2
Unit price definition	Supply and installation -façade cladding with panel made of aggregated Portland cement with coated glass fibre mesh (with 12,5 mm single-layer board)		
Description			
<p>The cladding of existing plumbing pipes on façade, with panel made of aggregated Portland cement with coated glass fibre mesh embedded in back and front surfaces. Panels are mounted on metal substructure. Before cladding the pipes shall be protected with thermal insulation d=5cm made of glass wool.</p> <p>Unit price include all works and materials necessary to complete the cladding, including the execution of joints with joint tape, puttying and applying a thin smooth coat layer on joints.</p> <p>Calculation per m2 of finished cladding.</p>			

BoQ Item	B9.7;B20.4	Unit	m2
Unit price definition	Supply and installation of drywalls using gypsum boards, total thickness 125 mm		
Description			
Procurement, transport and installation of double fireproof gypsum plaster board drywalls with a total thickness of d =125mm. Wall is made of standard metal structure on both sides clad with double fireproof gypsum plasterboards d = 2x12.5 mm. The space between the profiles is filled with mineral wool with a density of 100 kg/m3			
Joint tapes shall be affixed in the joints of plaster wall boards and covered walls will be made by applying joint filling plaster according to the project design and approved details.			
The unit price includes all work, material, installation of all reinforcements in the walls for the installation of doors, free ends of the walls, reinforcements on the parts of the wall where the equipment is installed.			
Calculation per m2 of installed wall.			

BoQ Item	B10.1-B10.4;B21.1-B21.3	Unit	m2
Unit price definition	Thermal insulation facade		
Description			
External walls shall be insulated with thermal insulation to match the requirements for the contact facade.			
Fixing shall be done in according to design details and manufacturer's specification.			
The Façade as presented in the architectural design should be composed of:			
<ul style="list-style-type: none">- Finish coat, paint / impregnation- Primers- Mat reinforcement- Basecoat- EPS insulation material with system dowels- Adhesive- Masonry / concrete with or without plaster			
<u>Adhesive and basecoat</u>			
Ready-to-use organically bonded fiber and siloxane reinforced adhesive/basecoat with mineral-based lightweight aggregates for high yields. Product shall be in compliance with EN 15824			
<u>EPS insulation material with system dowels</u>			
Thermal isolation boards made of EPS (expanded polystyrene), thickness d=20mm/30mm/50mm/80mm, with following characteristic:			
-Thermal conductivity λ_D : 0,038 W/mK			

- Permissible compressive load (2% compressibility): 20 kPa
- Fire class: "B" (according to EN 13501-1)

Insulation anchor nails with the option of screwing in a compound screw nail for thermal facade systems.

The insulation anchor nail/dowel consists of a combination of fiber-glass reinforced polyamide and galvanized steel, the dowel anchor sleeve is made of polypropylene and the dowel plate is also made of fibre-glass reinforced polyamide. With its integrated compression crumple zone and a dowel plate thickness of just 2.5 mm, the dowel plates are placed exactly flush in the insulation material.

Mat reinforcement

Reinforcing mesh 4x4 mm or 5x5 mm;

Mesh reinforcement joint overlap ≥ 100 mm.

Finish coat

Ready-to-use, paste-like silicone resin plaster for non-directional textures, in compliance with EN 15824. Resistant to soiling, highly vapour permeable, highly water-repellent, Retards and prevents the formation of mould and algae. Color RAL 9010, 7046, 1019. (Color distribution is given in Main Design)

The surface of the substrate must be dry, even and free of grease and dust as well as free of any residual substances that may reduce the adhesion. Check the stability of existing coatings (paint coatings and old plasters) and compatibility with adhesive, and remove unstable coatings completely if necessary. Ensure that all openings (interface gaps) are sealed.

The contractor is solely responsible for inspecting the condition of the substrate and the on-site conditions.

The ambient temperature, substrate and material temperature must be at least +5 °C and may not exceed +30 °C during the entire application, drying and setting phase.

Unfavorable weather influences such as high temperatures, wind or direct sunlight can change the application conditions.

The surface of the wall must be flat, dry and free of grease and dust.

Unevenness in the substrate up to a maximum of 20 mm can be covered with the adhesive if dowelling is used in addition to adhesive bonding. Major unevenness should be equalized using a suitable plaster layer or by staggering the insulation panel thickness. The bond strength of the plaster should be tested after it has set.

Edge ribbon and dab bonding is performed by hand. The adhesive bonding surface with the substrate is ≥ 40 % after pressing in the insulation panels. Apply an approx. 50 mm wide ribbon of mortar around the perimeter and 3 palm-sized adhesive dabs or strips on the insulation panel.

Install the plinth connection end profile horizontally and fix using anchor nails at spacings of approx. 300 mm. Compensate for substrate tolerances with washers. Connect the joints and the plinth connection end profiles with H connectors. Apply insulation panels immediately to the fresh adhesive by pushing, floating and pressing.

Apply the insulation panels precisely and continuously starting from the bottom with the joints staggered at ≥ 100 mm (half panel length recommended for joint staggering). Cross joints, e.g., on opening corners should be avoided.

The wall must be sufficiently stable to allow the use of dowels.

The number of dowels is 6/m². Application of the dowels can commence after the adhesive has hardened sufficiently. The diameter of the drill must be ≥ 8 mm. Do not use impact or hammer drills on hollow or perforated bricks or masonry. Arrange the drill holes so that the concrete reinforcement is not damaged. Drill hole depth = dowel length + 10 mm (or +25 mm with recessed dowel installation). Clean the drill holes before the dowels are applied. Do not use worn drill bits. Resharpening of the drill bit is not permissible. Under the mesh the installation can be flush to the surface or recessed in the surface. When applying dowels through the reinforcement mesh the dowels can only be placed surface flush. The dowel must be set in the fresh basecoat layer after the application of the basecoat and the embedding of the reinforcing mesh. Then immediately (wet plaster on wet plaster) apply a second layer of basecoat. The substrate temperature must be ≥ 0 °C when placing a dowel. The exposure to UV light with direct exposure to sunlight for the dowel and insulation panel may not exceed 6 weeks.

Embed reinforcement mesh on the entire surface with at least a joint overlap of 100 mm fresh-in-fresh in the basecoat layer. Apply a full covering of basecoat to the mesh.

The mesh is arranged in the center when the basecoat thickness is up to 4 mm, for > 4 to 7 mm layer thickness it is in the upper half of the basecoat layer and for > 7 mm in the exterior third. Avoid excessive smoothing of the reinforcement layer to prevent a concentration of fine particles or formation of a sinter layer on the surface. Rub off any burrs that have formed when drying. Plaster connections should be separated with a separating tape, separation strip, profiles or similar from the constructional components. Before application of a further coating (primer) it is important to ensure that the basecoat is fully dry. The minimum drying time is generally approx. 1 day/mm layer thickness. With **unfavorable** weather conditions (e.g., high levels of air humidity or low temperatures) the drying time is extended.

Ready-to-use, paste-like final coat must be mixed thoroughly. When necessary, a small quantity of water may be added to set the application consistence. Apply mixture (floated render texture) with a stainless-steel trowel in grain size $d=2,0$ mm to the entire surface and trowel smooth with circular movements without interruption using a hard plastic trowel. Use a trial coat to ensure the color shade is correct. Always complete surfaces that can be viewed together on the same day.

The contractor is solely responsible that all components of thermo isolated façade are compatible.

The price includes all works, material, preparatory work, preparation and cleaning of the substrate, execution of thermal facade in the described layers, usage of scaffolding, as well as a protective net on the scaffolding on which will be printed in accordance with visibility requirements. Also, in unit price is included, and will not be paid separately, execution/installation of façade around the edges of the openings.

Calculation per m² of executed thermo insulated façade.

BoQ Item	B10.5./B21.3	Unit	m2
Unit price definition	Plastering facade with silicone resin plaster		
Description			
<p>Façade elements shall be plastered with silicone plaster as defined in Main Design. Fixing shall be done in according to design details and manufacturer’s specification.</p> <p>The plastered façade as presented in the architectural design should be composed of:</p> <ul style="list-style-type: none">- Finish coat, paint / impregnation- Primers- Mat reinforcement- Basecoat- Masonry/concrete with or without plaster <p><u>Basecoat</u> Ready-to-use organically bonded fibre and siloxane reinforced basecoat with mineral-based lightweight aggregates for high yields. Product shall be in compliance with EN 15824</p> <p><u>Mat reinforcement</u> Reinforcing mesh 4x4 mm or 5x5 mm; Mesh reinforcement joint overlap ≥100 mm.</p> <p><u>Finish coat</u> Ready-to-use, paste-like silicone resin plaster for non-directional textures, in compliance with EN 15824. Resistant to soiling, highly vapour permeable, highly water-repellent, Retards and prevents the formation of mould and algae. Color RAL 1007, RAL 7004, RAL 9010.</p> <p>Before commencement of this work item, after the contractor and supervisor defined the producer of the finish coat, the contractor shall give color pallet to the designer color pallet so he will prepare color distribution for each façade element.</p> <p>The surface of the substrate must be dry, even and free of grease and dust as well as free of any residual substances that may reduce the adhesion. Check the stability of existing coatings (paint coatings and old plasters) and compatibility with adhesive, and remove unstable coatings completely if necessary. Ensure that all openings (interface gaps) are sealed.</p> <p>The contractor is solely responsible for inspecting the condition of the substrate and the on-site conditions.</p> <p>The ambient temperature, substrate and material temperature must be at least +5 °C and may not exceed +30 °C during the entire application, drying and setting phase. Unfavorable weather influences such as high temperatures, wind or direct sunlight can change the application conditions.</p> <p>The surface of the wall must be flat, dry and free of grease and dust.</p> <p>Set basecoat layer and set reinforcement mesh in the fresh basecoat layer and then immediately (wet plaster on wet plaster) apply a second layer of basecoat.</p> <p>Embed reinforcement mesh on the entire surface with at least a joint overlap of 100mm.</p>			

The mesh is arranged in the center when the basecoat thickness is up to 4 mm, for > 4 to 7 mm layer thickness it is in the upper half of the basecoat layer and for > 7 mm in the exterior third. Avoid excessive smoothing of the reinforcement layer to prevent a concentration of fine particles or formation of a sinter layer on the surface. Rub off any burrs that have formed when drying. Plaster connections should be separated with a separating tape, separation strip, profiles or similar from the constructional components. Before application of a further coating (primer) it is important to ensure that the basecoat is fully dry. The minimum drying time is generally approx. 1 day/mm layer thickness. With unfavorable weather conditions (e.g., high levels of air humidity or low temperatures) the drying time is extended.

Ready-to-use, paste-like final coat must be mixed thoroughly. When necessary, a small quantity of water may be added to set the application consistence. Apply mixture (floated render texture) with a stainless-steel trowel in grain size d=2,0 mm to the entire surface and trowel smooth with circular movements without interruption using a hard plastic trowel. Use a trial coat to ensure the color shade is correct. Always complete surfaces that can be viewed together on the same day.

The contractor is solely responsible that all components are compatible.

The price includes all works, material, preparatory work, preparation and cleaning of the substrate, execution of plastering in the described layers, usage of scaffolding, as well as a protective net on the scaffolding on which will be printed in accordance with visibility requirements. Also, in unit price is included, and will not be paid separately, execution/installation of plastering around the edges of canopies.

Calculation per m2 of executed plastering.

BoQ Item	B10.6;B21.4	Unit	m2
Unit price definition	Plastering of walls plinth with decorative mortar		
Description Supply and plastering of wall plinth, height 70 cm, with decorative smoothed mortar mad of multicolored marble granulate. Prior of application the surface shall be prepared as per manufacturer’s instructions. Color per choose of the Supervisor.			

BoQ Item	B10.7;B21.5	Unit	m'
Unit price definition	Metal flashing for expansion joints		
<div>Description</div> <div>Supply and installation of metal flashing for expansion joints in walls, width approx. 180 mm. Metal flashing shall be provided with expansion joints on long runs to prevent deformation of the metal sheets. The selected metal shall not stain or be stained by adjacent materials or react chemically with them.</div> <div>Calculation per m1 of installed metal flashing.</div>			

BoQ Item	B11.1;B22.1	Unit	m2
Unit price definition	Painting of internal walls and ceilings with water dispersion-based paint		
<p>Description</p> <p>Appropriate interior paint based on water dispersion shall be applied in two layers on internal walls/ceiling area.</p> <p>The substrate must be solid, dry and clean, free of loose parts, dust, easily soluble salts, greasy stains and other dirt. Dust and other unaccepted dirt are vacuumed or removed by brushing, undecomposed formwork residues oils from concrete surfaces are washed with a jet of hot water or steam. With already painted surfaces, we remove all easily and quickly soluble deposits from the substrate, as well as treatments with oil paints, varnishes or enamels. Disinfected wall surfaces infected with mold must be disinfected before applying the leveling compound.</p> <p>At first the walls/ceiling must be prepared with leveling compound. The leveling compound is installed in two layers, where the thickness of the individual layer should not exceed 1 to 2 mm, and the total two-layer coating thickness 3 mm. The mass is applied by machine - by spraying or by hand - with a stainless-steel trowel. To spread the mass on the treated surface and remove the excess mass, we use a stainless-steel trowel to smooth the surface as well as possible.</p> <p>Sand the first layer before applying the second, as well as the second or final layer with fine sandpaper. Grinding can be executed manually or by machine.</p> <p>Installation of leveling compounds is only allowed in appropriate weather conditions or appropriate microclimatic conditions: the temperature of air and wall surfaces should not be lower than +5 °C and not higher than +35 °C, relative humidity not higher than 80%.</p> <p>Leveling compounds shall be completely dried before starting painting.</p> <p>The paint is applied in two layers at intervals of 4 - 6 hours (T = +20 °C, rel. Humidity = 65%), with long-haired fur or with a textile paint roller, with a paint brush suitable for applying dispersion wall paints or spraying. Color is white.</p> <p>Paint individual wall surfaces without interruption from one end edge to the other.</p> <p>Unit price includes all work, material, scaffolding as well as all correction of the painting after the completion of all works.</p> <p>Calculation per m2 of painted walls/ceilings.</p>			

BoQ Item	B11.2;B22.2	Unit	m2
Unit price definition	Painting of internal walls with washable acrylic-based resin paints		
Description			
Appropriate acrylic-based resin wall paints shall be applied in three layers on the internal walls area. The surface initially shall be treated with appropriate primer coat to reduce absorption and to improve the adhesion of subsequent coats of paint. It will be consulted to the Engineer regarding the further details for the appropriate acrylic-based resin wall paints.			
The substrate must be solid, dry and clean, free of loose parts, dust, easily soluble salts, greasy stains and other dirt. Dust and other unaccepted dirt are vacuumed or removed by brushing,			

undecomposed formwork residues oils from concrete surfaces are washed with a jet of hot water or steam. With already painted surfaces, we remove all easily and quickly soluble deposits from the substrate, as well as treatments with oil paints, varnishes or enamels
Painting of interior should be done in three layers of Matt, Low sheen semi-matte antibacterial paint; colors shall be as per request of the beneficiary and supervisor.

Unit price includes all work, material, preparation of the substrate, scaffolding as well as all correction of the painting after the completion of all works.

Calculation per m2 of painted walls.

BoQ Item	B12.1	Unit	M3
Unit price definition	Manual Excavation of category IV soil		
Description	<p>Manual excavation of category IV soil/earth for the new foundations and slabs. Calculation per m3 of excavated material in densely condition, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	B12.2	Unit	m2
Unit price definition	Supply and execution of tampon gravel layer, d=10cm		
Description	<p>Making a tampon layer d=10 cm, from gravel material or crushed stone, 0-30mm, with proper compaction below the foundations and slabs until the compression module reaches 40 MPa. The price includes the purchase, transport and compaction of materials. Calculation per m2 of finished tampon layer.</p>		

BoQ Item	B12.3	Unit	PCS
Unit price definition	Supply and installation of gravel layer on the flat roof of the building, d=5-8cm		
Description	<p>Supply and installation gravel layer, granulation d=16-32mm, on the flat roof. The gravel shall be washed without impurities. Thickness of gravel layer is 5 cm on the entire roof surface except along the roof parapet walls and horizontal gutters in a width of 1 m where the thickness is 8 cm. The price includes supply, unloading, transport horizontal and vertical and final leveling in accordance with the description. Calculation per m2 of executed gravel layer.</p>		

BoQ Item	B12.4;B23.4	Unit	PCS
Unit price definition	Supply and installation of prefabricated PVC roof gully set		
Description			
Supply and installation of the gully set is a prefabricated rigid PVC rainwater outlet for flat roofs used with PVC roofing membranes. Resistant to UV exposure. Membrane shall be welded directly to the base plate with hot air. Unit price includes all works and materials.			
Calculation per piece of mounted and sealed gully.			

BoQ Item	B12.5;B23.5	Unit	PCS
Unit price definition	Supply and installation of prefabricated PVC roof rainwater outlet Ø50 mm		
Description Supply and installation of rainwater outlet Ø50 mm through the parapet in flat roofs, made of roof drain made of rigid high-quality PVC. Resistant to UV exposure. Membrane shall be welded directly to the base plate with hot air. Unit price includes all works and materials. Calculation per mounted piece.			

BoQ Item	B12.6	Unit	PCS
Unit price definition	Supply and installation of prefabricated T pipe flashing/vent flashing		
Description			
Supply and installation of T pipe flashing made of synthetic roof waterproofing membrane based on premium-quality flexible polyolefins (FPO), containing stabilizers, with inlay of glass non-woven. Resistant to UV exposure. Membrane shall be welded directly to the base plate with hot air. Unit price includes all works and materials.			
Calculation per mounted piece.			

BoQ Item	B12.7	Unit	LS
Unit price definition	Drawing of the playground’s lines on the sports floor		
Description			
Drawing of the lines on sports floor for basketball, volleyball and futsal, in three deferent colors on supervisor’s choice. The lines shall be in line with applicable FIBA, FIVB and UEFA Futsal, rules for ground lines on playgrounds. The paint used to draw the lines shall be chemically compatible with the installed sports floor.			
Calculation per lump sum.			

BoQ Item	B12.8	Unit	kg
Unit price definition	Supply and installation of the steel metal staircases		
Description			
Procurement of supply and installation of the internal steel staircase. The staircase is made of quality Č.O361 steel. The staircases are composed from following steel elements: HOP box profiles 60x60x4 mm, L profiles 50x50x5mm and steel plate thickness d=10mm. Profiles are joined by welding. Anchoring shall be done with M10x80 anchors for concrete, 4 pieces at each column.			
Metal profiles, previously sandblasted, shall be painted with two basic and two final coatings of paint.			
The price includes all the necessary works and materials			
Calculation per kg of the assembled and painted steel structure.			

BoQ Item	B12.9	Unit	kg
Unit price definition	Supply and installation of the steel metal frame at Entrance 2		
Description			
Supply and installation of the metal frame at Entrance 2. The frame is made of quality Č.O361 steel. The staircases are composed from HOP box profiles 100x100x4 mm. Profiles are joined by welding. Anchoring shall be done with M10x80 anchors for concrete, 4 pieces at each column. It should also be anchored laterally to the walls. This frame is sub structure for external glass wall Pos 12 as well as support for trapezoidal roof metal sheet.			
Metal profiles, previously sandblasted, shall be painted with two basic and two final coatings of paint.			
The price includes all the necessary works and materials			
Calculation per kg of the assembled and painted steel structure.			

BoQ Item	B12.10	Unit	LS
Unit price definition	Supply and installation of the 3D inscription at entrance		
Description			
Supply and installation of the inscriptions in 3D letters “JU Škola za srednje I više stručno obrazovanje “Sergije Stanić””. The letters are made of aluminum composite panels d=4mm. The height of upper-case letters is 250 mm and of lower-case letters 200 mm. The inscription is installed on the new portal at Entrance 1. The type of font and color shall be chosen by the end-user. Unit price includes all materials, works and scaffolding.			
Calculation per lump sum.			

BoQ Item	B12.11	Unit	m2
Unit price definition	Lawn/grass		
<p>Description</p> <p>Planting of the lawn /grass on the surfaces as indicated in the main design.</p> <p>Complete fine grading and all specified soil preparation before grassing. Apply starter fertilizer per supplier's recommendations. Grass type, and areas of installation shall be in accordance with Specifications. Do not operate heavy equipment over prepared sub-grade. Water area thoroughly to penetrate sub-grades at least 20cm. Repeat watering as necessary to keep grass growing. Protect grass areas against foot traffic until grass is well established. Replace damaged areas with new grass.</p> <p>Grass seed shall consist of the following mixture: Festuca rubra 40%, Festuca ovina 30%, Poa pratensis 20%, Trifolium repens 10%.</p> <p>Sow grass seeds straight from two cross directions in calm weather, without precipitation and wind. After sowing, press the seeds into the ground with an iron garden tool, and then roll them with a wooden roller and carry out intensive watering until the grass sprouts completely. Watering should continue daily until the works are handed over.</p> <p>Calculation per m2 of lawns area.</p>			

BoQ Item	B12.12	Unit	m2
Unit price definition	Cleaning of the roofs		
<p>Description</p> <p>Cleaning of the entire roof from dirt, leaves, solid sediment as well as the existing layers of separate bitumen waterproofing. The position includes rough removal of the material, washing of the entire roof. Before cleaning / washing the roof ensure that vertical gutters do not spill over the school yard. Collect rubble and remove it to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p> <p>Unit price include all works and materials.</p> <p>Calculation per m2 of cleaned roof.</p>			

BoQ Item	B12.13;B23.7	Unit	LS
Unit price definition	Dismantling and installment of existing air-conditioners		
<p>Description</p> <p>Disassembly and reassembly of air conditioners with cleaning, testing and charging AC with freon. Air conditioners must be carefully dismantled, properly stored and reassembled after the facade works are completed. All damages caused by the Contractor will be compensated on its expense. The unit price includes dismantling and installment of existing air-conditioners, cleaning, testing, charging with freon.</p> <p>Calculation per piece of air conditioner</p>			

BoQ Item	B12.14;B23.8	Unit	m2
Unit price definition	Detailed cleaning of all rooms		
Description	<p>Detailed final cleaning after completion of the works. All washable horizontal and vertical surfaces should be cleaned with water and appropriate cleaning agents. The Contractor shall do it carefully not to cause damages on executed works.</p> <p>The unit price includes all works and materials.</p> <p>Calculation per m2 of horizontal area of building.</p>		

BoQ Item	B13.2	Unit	LS
Unit price definition	Dismantling of the roof covering made of fibre cement wavy plates type “salonit”		
Description	<p>Dismantling of the roof covering made of fibre cement wavy plates type “salonit”.</p> <p>Carefully dismantling roof covering made of fibre cement wavy plates type “salonit”. The panels must be lifted and shall not be torn or broken. Hooks, screws or nails with which the panels were fixed must be removed so that the panels are not damaged. When the fixing elements are removed, the panel must be secured against slipping. Drills, saws or high-speed tearing tools must not be used during disassembly. The panels shall not be pulled over the edges or over other elements. The roof structure of the structure, laths, beams, after removing the panel, it is necessary to carefully clean it with a vacuum cleaner.</p> <p>Unit price includes all works, materials and scaffolding.</p> <p>Calculation per m² of dismantled panels with transportation to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	B13.14	Unit	m²
Unit price definition	Dismasting of trapezoidal metal sheet from canopy in front of janitor workshop		
Description	<p>Dismantling of the trapezoidal metal sheet from the canopy in front of the janitor workshop. Dismantled metal sheet store within the construction site and install it after completing thermo façade. Calculation per m2 of demolished and reinstalled trapezoidal metal sheet.</p>		

BoQ Item	B13.15	Unit	m'
Unit price definition	Dismantling of metal sheets from gable walls and eaves		
Description	<p>Dismasting of lining on eaves and gable walls made of metal sheets. Unit price includes all works and material including scaffolders.</p> <p>Calculation per m1 of dismantled metal sheet.</p>		

BoQ Item	B13.18	Unit	m²
Unit price definition	Demolition of all layers on the canopy		
Description	<p>Demolition and removal the all-existing layers down to the concrete slab, thickness up to 10cm. Carefully demolish the layers, level and clean the surfaces, load the rubble and take it to the landfill.</p> <p>Calculation per m2 of demolished area, with removal of rubble to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	B15.4	Unit	m²
Unit price definition	Supply and installation of stone wool boards thihness d=50/80 mm		
Description	<p>Supply and installation of thermal insulation on the ceilings and roof of building "B" made of stone wool bords, thickness 50/80mm.</p> <p>The boards are on one side aluminum foil facings and on other side glass tissue facing. Thermo insulation shall be install under the working conditions, application equipment etc. strictly in accordance to the manufacturer's instructions. Unit price includes all works and material including permeable membrane as a vapor barrier and scaffolding.</p> <p>Calculation per m2 of installed thermal insulation including permeable membrane.</p>		

BoQ Item	B23.6	Unit	PCS
Unit price definition	Supply and installation of folding attic stairs		
Description			

Supply and installation of folding attic stairs in building "B". The stairs open with a rod, and can be stored again in the ceiling. The attic stairs are made of wood. Thermally insulated sandwich panel thickness and wooden frame with seal. The springs are attached to the frame, and provide a secure and easy closure. The side profiles are connected to the treads and ensure stability and safety, and the longitudinal perforations on the treads ensure safe use. The stairs are tested for a load of 150 kg.
Unit price includes all works and materials.
Calculation per piece of installed stairs.

Section 5. Hydrotechnical installations

5.1. Introduction

Main design Hydraulic installation is done according to the main architectural design and in compliance with the relevant international and domestic standards and applicable technical regulations and standards for installations of this type.

This Main design includes the following hydraulic installations with associated equipment, devices and accessories, as follows:

- Plumbing installation system;
- Sewerage installation system for collection and evacuation of sanitary wastewater;
- Sanitary devices and accessories;

5.1.1. PLUMBING

A) TECHNICAL SOLUTION

During development of the design information of type of existing pipes' materials has not been available. The design envisage installation of the new PPR pipes which shall be installed in the floors and walls. After commencement of the works the supervisor and the contractor shall determinate method of connecting old and new pipes.

Replacement of the entire plumbing installation in toilets is planned. The pipe diameters given as internal are determined by hydraulic calculation are given in the graphic documentation. Dismantling and plugging of installations in the existing toilet for persons with disabilities is planned.

At all internal sanitary water distribution, the required number of central and through valves is provided in order to ensure their proper functioning and maintenance and orderly supply to all consumers in regular and emergency conditions. On the branches for sanitary facilities and some plumbing connection joints, gate valves are provided, with a nickel-plated plug and a rosette, for sanitary cold water. The valves shall be mounted in visible and easily accessible places.

The internal plumbing piping will be installed partly in the wall, in special chases, with the necessary insulation, partly in the floors with thermal insulation, too. At the locations where the plumbing and sewerage pipes overlap, plumbing pipes shall be placed above the sewerage pipes.

For the fire protection, new hydrants equipped with a shutter, a coupling, a hose with a nozzle are planned. The new wall hydrant shall be connected at existing pipelines made of steel pipes Ø50mm.

The complete plumbing protection installation is provided by high-density polyethylene pipes PP-R, for pressurized fluid, PN10, manufactured in accordance with the European standard EN 10910 PE 100, with electrofusion or butt welding.

Before handing over the performed works on the water supply installations, it is necessary to obtain proof that the water samples from this network are bacteriologically correct, i.e., that the water is suitable for drinking and human use. The entire distribution pipeline should be tested at a test pressure of 10 bar.

B) EXECUTION OF THE WORKS

Work the sanitary water pipe network from plastic PP-R pipes of certified quality.

The horizontal distribution of the water supply network in the building is placed below and on the concrete slab floor with obligatory protection against sweating.

Check valves with rosettes and a nickel-plated cap are installed on all branches below each tap.

A detailed description of the works is given in this technical specification

5.1.2. SEWERAGE INSTALLATION

Primary distributions of sanitary sewerage are designed to provide subsequent connection of any standard sanitary equipment and devices. The dismantling of the existing pipes and the replacement with new ones is planned. New manholes are planned in front facility for collection of wastewaters.

Internal installations of sewerage shall be made from plastic three-layer silent PP pipes and fittings of dimensions in accordance with the provisions of EN 1451 standard, with connection to the nozzle with integrated rubber ring. Pipes shall be made as a three-layer composite pipe, made of mineral additives reinforced material, with an inner white layer, increased noise absorption (low-noise pipes), diameter DN50 - DN160 mm, length from 0.25 to 3.0 m.

Ventilation of the sanitary sewer distribution is provided through a sufficient number of ventilation verticals DN110 and DN 75 mm, with ventilation heads above the roof slab of the building.

In the sanitary facilities, in the areas of washbasins and urinals, the installation of HDPE vertical floor drains, adjustable in height, type as HL310NPr - 3000, Floor drain DN50 vertical with sealing flange, breath shutter height-adjustable 10 mm / end frame stainless steel frame Click-Click 121 x 121 mm stainless steel grating 115 x 115 mm, construction protection of frame and flange included in delivery. The connection of the drain with the floor waterproofing is provided with an insulating sleeve type which is supplied with the drains.

5.1.3. SANITARY WARES

Sanitary wares, fittings and accessories are first class, all are white color, and their design as well as the type of fittings and accessories are in accordance with the requirements of the supervisor. All wares and accessories shall be installed at the prescribed height, and special attention shall be paid to adjusting the connections to the factory conditions of the selected elements.

Definitive specification of sanitary wares with their dimensions should be made after controlling the dimensions and actual condition in the premises where their installation is planned.

The following standard should be applied, but not limited to:

EN 10240 - Internal and/or external protective coatings for steel tubes Specification for hot dip galvanized coatings

MEST EN 1074-1:2009 - Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 1: General requirements

MEST EN 1074-2:2009 - Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 2: Isolating valves

MEST EN 1092-2:2020 - Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 2: Cast iron flanges

MEST EN 1213:2009 - Building valves - Copper alloy stop valves for potable water supply in buildings - Tests and requirements

MEST EN 12201 - Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE)

MEST EN 13476 - Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized polyvinyl chloride (PVC-U), polypropylene (PP) and polyethylene (PE)

MEST EN 1610:2017 - Construction and testing of drains and sewers

MEST EN 476:2012 - General requirements for components used in drains and sewers

MEST EN 1563:2019 - Founding - Spheroidal graphite cast irons

MEST EN 545:2011 - Ductile iron pipes, fittings, accessories and their joints for water pipelines - Requirements and test methods

MEST EN 671-1:2013 - Fixed firefighting systems - Hose systems - Part 1: Hose reels with semi-rigid hose

MEST CEN/TR 12108:2018 - Plastics piping systems - Guidance for the installation inside buildings of pressure piping systems for hot and cold water intended for human consumption

MEST EN 598:2013 - Ductile iron pipes, fittings, accessories and their joints for sewerage applications - Requirements and test methods

MEST EN 14688:2019 - Sanitary appliances - Wash basins - Functional requirements and test methods

MEST EN 14055:2019 - WC and urinal flushing cisterns

MEST EN 200:2011 - Sanitary tapware - Single taps and combination taps for water supply systems of type 1 and type 2 - General technical specification

MEST EN 33:2020 - WC pans and WC suites - Connecting dimensions

5.2. General requirements for all positions of works

The entire sewerage and plumbing installation shall be executed in accordance with applicable technical regulations, based on the approved design and contract. If there is any discrepancy, the contractor is obliged to ask instructions the supervisory timely.

Prior to commencement of work, the contractor is obliged to review all designs and submit any request for clarifications to the supervisor. All materials shall comply with applicable standards and other applicable regulations for that type of material. For each material (pipes, equipment, etc.) prior of installation, the certificate proving compliance with the regulations shall be submitted. Responsibility of the contractor is to protect all installations and equipment against mechanical damage, clogging and misuse until the final submission. The contractor must arrange the works so that the materials and works do not interfere with the work of other contractors on the construction site. The Contractor is responsible for all embedded materials and works performed until the Provisional Acceptance Certificate is obtained.

The testing of the plumbing installation, piping sustainability shall be carried out in accordance with the applicable standards and regulations. All testing costs are calculated in unit price and will not be paid separately. Testing of the installation shall be done according the supervisor's instructions. Works and materials that shall not meet standards and quality defined by these technical specifications and applicable standard will not be paid. All costs of repairing and poorly executed works shall be expense of the Contractor. The Contractor is also obliged to do all works (with additional materials) not covered by the main design, if they are necessary for the normal functioning of the installations, or in order to comply with applicable regulations.

Connections to existing pipeline trenches and pipelines must be made in good quality and accurately according to the design and the obtained conditions of the water supply company.

Any change to the main design shall be only with the written approval of the supervisor. The contract authority reserves the right to increase or decrease agreed scope of work. In the case of any variation, additional/unpredicted works, the Contractor is obliged to submit a price analysis to the supervisor and obtain written consent before commencement of such works.

The calculation of executed works shall be made according to the quantities actually installed, measured on the spot, regardless of the quantities in bill of quantity. All sewer and plumbing pipes will be measured by the length of the meter measured through the center of the pipe. All sewer fittings (elbows, branches,

reducers, revisions, etc.) are not calculated or paid separately, but are measured and accounted for as straight pipes. For reducing fittings, a larger diameter is calculated.

Unit price of installed pipe (water and sewage) shall include all necessary drillings of walls and slabs, as well as cutting flooring and slabs chases for laying of pipes, as well as all coating, filling, repairing and plastering upon the completed laying of pipes, and will not be paid separately.

In unit price of each item shall be included all work and materials necessary for full completion of item.

This general description is required for each position of bill of quantity (Volume 4).

The agreed unit prices include all works, material, scaffolding, transportation, use of tools, equipment or machines etc., to provide fully completed and accepted position of the works.

These general conditions apply to each item of BoQ separately.

5.3. Unite price description

BoQ Item	C1.1; C5.1	Unit	LS
Unit price definition	Dismantling of the plumbing and sewage pipes and sanitary elements and accessories		
Description			
Di Dismantling of the existing sanitary elements toilet bowls with cisterns, sinks, "squats", etc. The position also includes the dismantling of the existing plumbing pipes in the toilets, leaving the connection for installation of the new pipes. Removing of sanitary wares and clogging the pipes in the existing toilet for people with disabilities. The position includes the dismantling of holders for soap, toilet paper and ect.			
Calculation per lump sum, with transport to the landfill at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials material.			

BoQ Item	C2.1; C6.1	Unit	m'
Unit price definition	Supply and installation of pipes, type PPR		
Description			
Supply and installation of pipes with all fittings and clamps for pipeline fastening. The pipes are with a middle layer of a special mixture of PPR with glass fibers (Polypropylene Random Copolymer, type 3). Installation with welding should be done in accordance with the manufacturer's instructions. The specification of fittings should be done by the contractor. The pipes shall be attached every 1,5 m with the original clamps for this type of pipes. After installation, the pipes shall be tested pressure of 12,0 and 8,0 bar, with three tests. Third after installation of sanitary fittings. After the testing, disinfection of the pipelines with a chlorine solution and rinsing of the pipelines shall be performed. The Contractor shall take water samples and give them for chemical bacteriological analysis to Sanitary authority.			
Pipes for cold and hot and recirculation water are different diameters: Ø25, Ø20, Ø15			
The unit price includes all works, materials, necessary adjustments, welding, fittings, clamps and etc.			
Calculation per m1 installed pipeline.			

BoQ Item	C2.2; C6.2	Unit	pcs
Unit price definition	Supply and installation of gate valve Ø 20 mm		
Description	Supply and installation of gate valve with nickel-plated cap, for pipe diameter Ø 20 mm. Calculation per installed piece.		

BoQ Item	C2.3.	Unit	m'
Unit price definition	Supply and installation of prefabricated thermal insulation		
Description	Supply and installation of prefabricated thermal insulation which does not release toxic gases during combustion, 9 mm thick, 2000 mm long. The insulation of PP-R pipes for cold and hot water, which laid freely above suspended ceiling, through plasterboard walls or under the cement screed. For PP-R pipes: Ø 25 mm - insulation 9x28x2000 mm Ø 20 mm - insulation 9x22x2000 mm Ø 15 mm - insulation 9x19x2000 mm The unit price includes all works and material. Calculation per m1 of insulated pipe.		

BoQ Item	C2.4.	Unit	compl
Unit price definition	Supply and installation of fire hydrant with cabinet		
Description	Supply and installation of fire hydrant equipped with valve Ø50 and hose Ø50 length 15m including standard steel sheet cabinet dimensions 500x500x140 mm, color red, with "H" label. Unit price include all works and material according to standards. Calculation per set -built-in hydrant with metal sheet cabinet.		

BoQ Item	C2.5; C6.4	Unit	LS
Unit price definition	Manipulation on the existing plumbing installation		
Description	Manipulation of the existing plumbing installation, closing, opening and as cutting the pipe to make the connection between old and new installation. Calculation per lump sum.		

BoQ Item	C2.6;C6.5	Unit	m'
Unit price definition	Testing of the plumbing installation		
Description			

Testing of the plumbing installation at a test pressure, 3 bar higher than the working pressure i.e., minimum of 15 bar. After the completing the plumbing installation, seal all drain points with plugs, install the hydraulic pump, fill the installation with water, release the air and put installation under the test pressure. The installations shall be under pressure for at least 24 hours. In case the pressure drops, find the fault location, fix it and put the installation under test pressure again for 24 h.

The presence of the supervisor during testing of installation is obligatory.

Calculation per m1 of tested pipeline.

BoQ Item	C2.7;C6.6	Unit	m'
Unit price definition	Disinfection and rinsing of the plumbing installation		
Description	Disinfection and rinsing of the plumbing installation, in accordance with technical regulations. The Contractor shall provide the Certificate from the Sanitary Authority that water from installation can be used for drinking. Failing this, the Contractor shall repeat disinfection procedure until receiving the required Certificate, regardless of the number of repetitions the procedure.		
	Calculation per m1 of tested pipeline.		

BoQ Item	C3.1.	Unit	m'
Unit price definition	Cutting and demolition of the ground floor slab		
Description	Mechanical cutting and demolition of the ground floor slab together with all floor layers and excavation of the channels for installation of sewage pipes. The channels are 30 width and 50 cm dept. Laid pipes cover with sand up to the level of the ground floor slab. Concrete the slit in slab with C25/30 concrete. The unit price includes works and material for all listed actions.		
	Calculation per m1.		

BoQ Item	C3.2.	Unit	m3
Unit price definition	Manual excavation of trench, 80 cm wide		
Description	Machine and manual excavation of a trench 80 cm wide, for pipeline laying in any category of soil. The contractor shall make geodetic survey of the pipeline designed route. The unit price includes all the necessary work and materials and eventually pumping water from the trench. The width of the trench is determined in accordance with EN 1610.		
	Calculation per m3 of excavated material in densely condition, with disposal on site.		

BoQ Item	C3.3.	Unit	m3
Unit price definition	Making the sand layer		
Description			

Making a sand layer for a pipeline. Supply and installation of natural mixture sand with a fraction size of 0-4 mm, or crushed stone fraction up to 2 mm, for a bed thickness 10 cm below and around the pipe the entire width of the trench. Transport is also calculated at the unit price. Calculation per m3 of installed sand layers.

BoQ Item	C3.4.	Unit	m3
Unit price definition	Backfilling of the trenches		
Description			
Backfilling of the canal trench after installation and testing of pipes. Backfilling is done in layers, 30-40 cm thickness, with proper compaction until the required compression modulus is reached. Fraction size 0-63 mm. Backfilling of the first layer of the trench is done manually, with selected material from the excavation. Further backfilling can be done with machine using remaining excess from the excavation, provided that the machines during backfilling of the trench do not cross over the installed pipeline and that the layers are not thicker than 40 cm.			
Calculation per m3 of backfill material.			

BoQ Item	C3.5.	Unit	m3
Unit price definition	Transport of excess soil material		
Description			
Removal and transport of excess material to the landfill. Dispersing of soil is calculated with a 25% increase on the material calculated in density condition.			
Calculation per m3 of removed soil, with transport to the landfill at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials material.			

BoQ Item	C3.6.	Unit	pcs
Unit price definition	Reinforced concrete pipe, Ø 1000 mm		
Description			
Supply and installation of reinforced concrete pipes, diameter 1000 mm, length 1,0 m for construction of the revision shaft. The unit price includes all work and materials, metal steps, pipe required cutting, construction of foundation and channel pipe i.e., all necessary works and materials.			
Calculation per piece of installed RC pipe.			

BoQ Item	C3.7.	Unit	m3
Unit price definition	Reinforced concrete bottom slab of manhole		
Description			
Construction of reinforced concrete shaft bottom slab of manhole and bottom manhole ring with in situ cast concrete C25/30, all in accordance with details from main design.			
The unit price includes all necessary work and materials, formwork, reinforcement and etc.			
Calculation per m3 of installed concrete.			

BoQ Item	C3.8.	Unit	m3
Unit price definition	Reinforced concrete top slab of manhole		

Description

Construction of reinforced concrete shaft top slab of manhole d= 15cm and top manhole ring with in situ cast concrete C25/30, all in accordance with details from main design.

The unit price includes all necessary work and materials, formwork, reinforcement and etc.

Calculation per m3 of installed concrete.

BoQ Item	C3.9;C7.1	Unit	m'
Unit price definition	Sewage pipes and fittings, type PP-C		
Description Supply and installation of silent sewage pipes for internal use. The pipes shall be installed with special rubber clamps, which enables the reduction of noise and acoustic vibrations up to the level of 12 dB. The pipes are made of the highest quality polypropylene-block copolymer (PP-C) reinforced with mineral additives. This type of pipes shall be used for all horizontal and vertical pipes the internal sewerage installation. Pipes shall be placed in designed inclination. The connection of pipes and fittings will be made with a plug-in socket and a rubber sealing ring (Q ring). Impermeability test shall be made after installation of pipes. Pipes are of different diameters: DN 50, DN 75, DN 110, DN 160. The unite price includes all works, materials, fittings, preparatory and finishing works, construction and closing of grooves, mounting on clamps, hooks and brackets, drilling holes in walls, floor slabs, inspection and testing for sound of each pipe or piece, pipe cutting, threading, joining, giving inclination, making pipe insulation as design or instructed by the supervisor, inspection of lines and temporary closure of the pipe opening for testing and etc. The unit price includes also the assembly and disassembly of the required scaffolding where the installation height requires it. Calculation per m1 of installed pipes.			

BoQ Item	C.3.10;C7.2	Unit	pcs
Unit price definition	Bathroom drain, for Ø50 mm connection		
Description			
Supply and installation of drains with siphon for blockage of odors even when the siphon is dry, nickel-plated cover with a frame, dimensions 15x15 cm. Bathroom drain is made of PVC with horizontal drain.			
Calculation per piece installed.			

BoQ Item	C.3.11	Unit	pcs
Unit price definition	Bathroom linear drain with inox grate		
Description			

Supply and installation of linear drain with siphon for blockage of odors even when the siphon is dry, cover is made of inox AISI304 acid resistant grate with frame, dimensions of grate 80x500 mm. Bathroom drain is made of PVC with horizontal connection Ø50 mm.
Calculation per piece installed.

BoQ Item	C.3.12.	Unit	pcs
Unit price definition	Stainless drain and grate for kitchen		
Description	Supply and installation of the stainless (AISI 306 or AISI316L) drain and grate, in accordance with EN 1672. Dimensions of grate is 250x250 mm. Steel thickness min. 1,5 mm. Horizontal outlet is 1,5l/s. Unit price includes all works and materials for competition of position. Calculation per installed piece (drain with grate)		

BoQ Item	C.3.13;C7.3;	Unit	pcs
Unit price definition	Roof vent stack cover		
Description	Supply and installation of roof vent stack covers at the sewer vent stack, diameter DN75/DN110, with sheet metal around the vent stack at connection with roof cover. Calculation per piece of installed roof vent stack cover.		

BoQ Item	C.3.14;C7.4;	Unit	pcs
Unit price definition	Wall mounted access panel, 200x200 mm		
Description	Supply and installation of nickel-plated wall access panel, dimensions 200x200 cm. The panel shall be installed, at bottom of vent stacks at place of inspection cleanout piece. Calculation per piece of installed access panel.		

BoQ Item	C.3.15.	Unit	pcs
Unit price definition	Grease separator		
Description	Grease separator of grease of plant and/or animal origin, with an integrated precipitator made according to EN 1825 in a monolithic construction of prefabricated vibrated concrete (according to DIN 4281), with a double coating resistant to fatty acids, applied to a previously sandblasted surface, with a connection for taking samples. The separator has following technical characteristic: inlet/outlet DN 150mm, volume of precipitator 1.000 l, volume for grease 400 l, total volume 2174 l, inner diameter 1500 mm, Calculation per piece of installed separator.		

BoQ Item	C.3.16.	Unit	pcs
Unit price definition	Manhole iron cover, D400		
Description			

Supply and installation of iron cover with frame (according to EN124 standard). The cover is round, with the clear opening, diameter of 600 mm, loads of 400 kN (class D400) and a hinged connection between the frame and the cover and a rubber seal for the cover.

The unit price includes all the necessary work and materials for quality installation of covers in accordance with the details from the project.

Calculation per piece of built-in and corrosion-protected cover.

BoQ Item	C.3.17.	Unit	pcs
Unit price definition	Tube ventilator		
Description	Procurement and installation of tube ventilator HL 905 or equivalent at the position defined in the main design. Calculation per piece.		

BoQ Item	C.3.18;C7.5	Unit	m'
Unit price definition	Testing		
Description	Testing of the installed sewerage pipelines for water permeability according to the manufacturer's instructions and method statement approved by the supervisor. Calculation per m1 of tested pipeline.		

BoQ Item	C.4.1;C8.1	Unit	pcs
Unit price definition	Supply and installation of porcelain washbasin		
Description	<p>The wash basin shall be made of porcelain I class in accordance with ISO 9001 international quality standards. Dimensions cca 60x50 cm.</p> <p>The washbasin, white, glazed, with overflow, shall be resistant against mechanical impacts, corrosion and chemicals. The Wash Basin shall be fixed on wall with screws. The washbasin shall be mounted at 80 cm height. All the dimensions shall be applied according to the main design. Installation shall follow design requirements and manufacturers specifications.</p> <p>Washbasin will be connected to water system through 1/2 ", 30 - 50 cm flexible pipe and valve for water. Washbasin will be connected to the sewage system through brass, chromed siphon following the manufacturer's specifications. All the dimensions shall be applied according to the main design.</p> <p>On the wash basin the single lever basin faucet for cold water shall be mounted as well as accessories: washbasin syphon with filter, rosette, washbasin angle valve 3/8"-1/2"chrome, flexible water hose for washbasin stainless steel, hand drying paper towel holder, mirror 40x60 cm.</p>		

Sample of the washbasin accompanied with quality certificate, certificate of origin, and warranty certificate will be submitted to the supervisor for approval before washbasin installation in the building takes place.

Completion of work shall be in accordance with the main design and supervisor' requirements.

Supervisor may require an additional test for the mechanical and physical data.

Unit price includes all work and material as specified above.

Calculation per piece of mounted washbasin with accessories.

BoQ Item	C.4.2;C8.2	Unit	pcs
Unit price definition	Supply and installation of WC set with wall toilet tank system		
<p>Description</p> <p>The WC sets shall be made of porcelain I class in accordance with ISO 9001 international quality standards. Toilet bowl with the high-quality plastic seat and lid with antibacterial treatment shall be mounted on floor. The toilet bowl shall be strongly fixed on the floor by screws and plugs. The height of toilet bowl set shall be 38-40 cm. Toilet tank is mounted and heigh of cca 70 cm. They will be installed in accordance with the main design and Supervisor’s requirement. WC sets should provide a fast and big water flow. They should be resistant against mechanical impacts, corrosion and chemicals, and provide access for easy maintenance. The connection to sewerage system shall be through a siphon type pipe. The diameter should match the outlet of the WC set (The diameter is 100-110 mm). The connection of the WC set to the water system shall be realized to a flush toilet tank system (flash box) installed on the wall. The connection of the WC set and flush box to water and sewerage pipeline shall be in accordance with the manufacturer’s recommendation.</p> <p>Sample of the WC set and flush box accompanied with quality certificate and warranty certificate will be submitted to the supervisor for the approval before WC installation in the building takes place.</p> <p>Completion of work shall be in accordance with the main design and supervisor requirements. Supervisor may require an additional test for the mechanical and physical data.</p> <p>Porcelain wall hung toilet: Color: white, Dimensions: cca 470x370x400 mm Wall mounted toilet tank system: flush volume 5.0 l/3.0 l by EN With WC set deliver also toilet role holders installed to the left/right of toilet bowl at height of 80 cm and brush for toilet cleaning. Unit price includes all work and material as specified above. Calculation per installed set.</p>			

BoQ Item	C.4.3;C8.5	Unit	pcs
Unit price definition	Supply and installation of water heater (boiler)		
Description			
Supply and installation of boilers, made of metal-steel enameled sheet metal, for operating pressure of 6-8 bar and an electric heater of 2 kW and valve for reduction of pressure > 5 bar, volume 10 l and 80 l.			
The unit price includes all work and connecting material for plumbing and electrical installation.			
Calculation per piece.			

BoQ Item	C.4.4.	Unit	pcs
Unit price definition	Supply and installation of ceramic urinal		
Description Supply and installation of the set of ceramic urinals with the following elements: ceramic urinal shell for wall mounting, drain valve, siphon, rosette, fittings, sensor for activating flushing, required connecting and sealing material, as well as mounting element for urinal installation. Height 112-130cm. Unit price include all works and material. Calculation per piece completely assembled.			

BoQ Item	C.4.5.	Unit	pcs
Unit price definition	Supply and installation of toilet set for persons with disabilities		
<p>Description</p> <p>The WC sets is made of porcelain I class in accordance with ISO 9001 international quality standards. Toilet bowl with the high-quality plastic seat and lid with antibacterial treatment shall mounted on the floor.</p> <p>The toilet bowl shall be strongly fixed on the floor by screw and plugs and screws. The toilet flush tank system shall be on the wall, mounted on height cca 70 cm.</p> <p>The height of toilet bowl set shall be 45-50 cm. They will be installed in accordance with the main design and Supervisor’s requirement.</p> <p>WC sets should provide a fast and big water flow. They should be resistant against mechanical impacts, corrosion and chemicals, and provide access for easy maintenance.</p> <p>The connection to sewerage system shall be through a siphon type pipe. The diameter should match the outlet of the WC set (The diameter is 100-110 mm). The connection of the WC set to the water system shall be realized to a flush toilet tank system (flash box) installed on the wall.</p> <p>The connection of the WC set and flush box to water and sewerage pipeline shall be in accordance with the manufacturer’s recommendation.</p> <p>Sample of the WC set and flush box accompanied with quality certificate, and warranty certificate will be submitted to the supervisor for the approval before WC installation in the building takes place.</p> <p>Completion of work shall be in accordance with the main design and supervisor requirements. Supervisor may require an additional test for the mechanical and physical data.</p> <p>Porcelain wall hung toilet: Color: white, Dimensions: 367x 525x320 mm</p> <p>On-wall flush toilet tank system: flush volume 5.0 l/3.0 l by EN</p> <p>Flushing device shall be mounted at high of 70 cm.</p> <p>In the toilet two had holder appx. 90 cm long shall be mounted at height 80-90 cm from floor surface. At least one shall be folding with toilet paper holder and other can be fixed to the wall. Also supply toilet brush.</p> <p>Unit price includes all work and material as specified above.</p> <p>Calculation per installed set.</p>			

BoQ Item	C.4.6.	Unit	pcs
Unit price definition	Supply and installation of the washbasins for persons with disabilities, 64x55cm		
<p>Description</p> <p>The wash basin is made of porcelain I class in accordance with ISO 9001 international quality standards. Dimensions 64x55 cm.</p> <p>The washbasin, white, glazed, with overflow, shall be resistant against mechanical impacts, corrosion and chemicals. The Wash Basin shall be fixed on wall with screws. The washbasin shall be mounted at 80 cm height. All the dimensions shall be applied according to the main design. Installation shall follow design requirements and manufacturers specifications.</p> <p>Washbasin will be connected to water system through 1/2 ", 30 - 50 cm flexible pipe and valve for water. Washbasin will be connected to the sewage system through brass, chromed siphon following the manufacturer's specifications. All the dimensions shall be applied according to the main design.</p> <p>On the wash basin install appropriate faucet for water, as well as accessories: holder installed on wall at a height of 75cm, washbasin syphon with filter, rosette, washbasin angle valve 3/8"–1/2"chrome, flexible water hose for washbasin stainless steel, hand drying paper towel holder, tilted mirror with bottom edge at height of 100cm, dimensions 40x60 cm.</p> <p>Sample of the washbasin accompanied with quality certificate, and warranty certificate will be submitted to the supervisor for approval before washbasin installation in the building takes place.</p> <p>Completion of work shall be in accordance with the main design and supervisor' requirements. Supervisor may require an additional test for the mechanical and physical data.</p> <p>Unit price includes all work and material as specified above.</p> <p>Calculation per piece of mounted washbasin.</p>			

BoQ Item	C.4.7.	Unit	pcs
Unit price definition	Supply and installationn of liquid soap dispenser		
Description			
Supply and installation of dispenser with a full set of easy to install product, mounted on the wall. The liquid soap dispenser, capacity up to 500ml, manufactured from toughened ABS plastic and suitable for all commercial environments. Suitable for most bulk fill liquid soaps, this dispenser passes approximately 2ml of liquid soap in each action. Color of the dispenser on coos of supervisor.			
Calculation per piece.			

BoQ Item	C.4.8.	Unit	pcs
Unit price definition	Supply of the cleaner sink with vertical drain		
Description			
Supply and installation of the cleaner sink, with steel grate and vertical drain. Dimensions: 40x49 cm, color withe. Install a suitable shower head with hose next to the cleaner sink.			
Unit price include all work and material including shower head with hose and connecting material.			
Calculation of piece of installed cleaner sink.			

BoQ Item	C.4.9.	Unit	pcs
Unit price definition	Supply and installation of shower battery		
Description			
Supply and installation of the high-quality single-lever mixer complete with hand shower, 1,5m stainless steel connection hose and built-in parts. The body and lever are chrome-plated zinc alloy and the mixer tap has the ceramic cartridge.			
Calculation of piece of installed shower battery.			

Section 6: Electrical Installations

6.1. *Electrical installation-low voltage*

6.1.1. *General remarks*

This technical specification for the execution of works is an integral part of the tender documentation and will be an integral part of the Contract for the execution of works.

The contractor is fully acquainted with all the details of the submitted project, as well as with all the local ones regulations, local standards (MEST, common practice and circumstances for their enforcement, it is understood that whenever local regulations, local standards (MEST) or any common trade, is subject to any interpretation, clarification, ambiguity or in dispute will prevail the judgment of the Supervisor, always provided that such decision is fully accepted and will be based on the relevant local regulations, local standards (MEST), including, but not limited to:

- Rulebook on technical standards for low voltage electrical installations ("Official Gazette of the SFRY" No. 53/88),
- JUS N.B2.741 / 1989 security requirements
- Rulebook on technical standards for the protection of objects against atmospheric discharge ("Official Gazette of the SFRY" No. 11/96),
- Yugoslav Standards - Lightning Installations - General Conditions JUS IEC 1024 -1/1996
- Law on Fire Protection (Official Gazette of the Republic of Montenegro 79/04),
- Law on Occupational Safety and Health (Official Gazette of the Republic of Montenegro 34/14),
- Law on Spatial Planning and Construction of "Official Gazette of Montenegro" no. 064/17 of 06.10.2017.
- Technical Recommendation - Typing of measuring points (EPCG - Podgorica 2009) TP2ED

- Technical recommendation - for low-voltage consumer connections (TP-2 amended edition-Podgorica 2008)
- General Conditions for Electricity Delivery ("Official Gazette of the Republic of Montenegro" No. 1/90)
- Ordinance on the Supply of Electricity (Official Gazette of the Republic of Montenegro 13/05)
- MEST HD 60364-4-41: 2011 - Low-voltage electrical installations - Part 4-41: Safety protection - Shock protection
- MEST HD 60364-4-42:2011 - Low-voltage electrical installations - Part 4-42: Safety protection - Shock protection
- MEST HD 60364-4-43:2011 - Low-voltage electrical installations - Part 4-43: Safety protection - Overcurrent protection
- MEST HD 60364-5-51:2011 - Electrical installations of buildings - Part 5-51: Selection and installation of electrical equipment - General rules
- MEST HD 60364-5-52: 2011 - Electrical installations of buildings – Part 5-52: Selection and installation of electrical equipment - Wired systems
- MEST HD 60364-5-534:2011 - Low-voltage electrical installations - Part 5-534: Selection and erection of electrical equipment - Isolation, interruption and control - Clause 534: Surge protection devices.
- MEST HD 60364-5-54:2011 - Electrical installations of buildings - Part 5-54: Selection and erection of electrical equipment - Grounding methods, protective conductors and protective conductors
- MEST HD 60364-7-701:2011 - Low-voltage electrical installations - Part 7-701: Requirements for special installations or locations - Sites containing bathtubs or showers
- MEST EN 50274: 2010 - Low-voltage switchgear and controlgear - Protection against electric shock - Protection against accidental direct contact of dangerous active parts
- MEST EN 61543: 2009 - Differential current protective devices (RCD) for household and similar use - Electromagnetic compatibility
- MEST EN 50525-2-31:2011 - Electrical cables - Low-voltage power cables of rated voltages up to and including 450/750 V (U0/U) - Part 2-31: General purpose cables - Unshielded single core cables with thermoplastic PVC insulation
- MEST EN 61140:2010 - Shock protection - Common aspects for installation and equipment
- MEST EN 1838:2011 - Application of lighting - Emergency lighting
- MEST EN 60529:2010 - Degrees of protection provided by enclosures (IP code)
- MEST EN 50368:2008 - Cable fasteners for electrical installations
- MEST EN 50425:2009 - Household switches and similar permanent installations
- MEST EN 60269-1:2010 - Low-voltage fuses - Part 1: General requirements
- MEST EN 60269-1:2010/A1:2010 - Low-voltage fuses - Part 1: General requirements
- MEST EN 60320-1:2008 - Plug accessories for household and similar general-purpose appliances - Part 1: General requirements
- MEST EN 60320-2-2:2008 - Plug accessories for household and similar general purposes - Part 2-2: Interfacing household and similar equipment
- MEST EN 60670-1:2010 - Boxes and housings for household electrical accessories and similar fixed electrical installations - Part 1: General requirements
- MEST EN 60670-22:2010 - Boxes and housings for electrical household accessories and similar fixed electrical installations - Part 22: Particular requirements for junction boxes and housing
- MEST EN 60730-2-14:2009 – Electrical apparatus for automatic control for domestic and similar use - Part 2-14: Particular requirements for electric actuators

- MEST EN 60898-1:2010 - Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for alternating current (a.c)

All work shall be performed accurately and professionally. Prior ordering all materials the Contractor shall deliver to the Supervisor all certificates, attest and other supporting documents proving that the technical characteristic of materials and devices are in accordance with main design and these technical specifications. and installation of all materials the Contractor shall obtain written approval of the Supervisor. Regardless comments of the supervisor, the Contractor the quality of work and materials will be the solely responsibility of the Contractor.

Contracted prices include all fully completed works, the final product and ready for use.

6.1.2. Unite price description

BoQ Item	D1.1.	Unit	set
Unit price definition	Replacement of the GRO distribution cabinet equipment		
Description			
Dismantling of all equipment and installation of the new in the main distribution cabinet "GRO"			
The unit price includes all elements necessary for the installation of switches and cable shunting (cable glands, busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, terminal block, copper braids, single-pole scheme, pocket for single-pole scheme and other necessary material). The new equipment in the board consists of the following elements:			
Switch-disconnectors 1-0, 320A, 3P	pcs	1	
Switch-disconnectors 1-0, 160A, 3P	pcs	2	
Switch-disconnectors 1-0, 100A, 3P	pcs	3	
comb switches 1-0, 3P, 40A	pcs	1	
comb switches 1-0, 3P, 25A	pcs	34	
Fuse switch disconnecter 160/x A, 160A	pcs	11	
Fuse switch disconnecter 250/x A	pcs	2	
contactor 100A, 3P, 230 Vac	pcs	1	
Residual current circuit breakers 40/0.03A, 4P	pcs	6	
Circuite breaker C/10-32A, 1p; 10kA	pcs	102	
locking latches	pcs	24	
Unit price includes dismantling of all old equipment and installation, assembly and connection of the new one as described above.			
Calculation per installed set as described above.			

BoQ Item	D1.2.	Unit	set
Unit price definition	Replacement of the distribution board “RT-PR” equipment		
Description			

Dismantling of all equipment and installation of the new in the distribution cabinet "RT-PR" located on ground floor. The unit price includes all elements necessary for the installation of switches and cable shunting (cable glands, busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, terminal block, copper braids, single-pole scheme, pocket for single-pole scheme and other necessary material). The new equipment in the board consists of the following elements:

Switch-disconnectors 1-0, 80A, 3P	pcs	1
comb switches 1-0, 3P, 25A	pcs	1
Residual current circuit breakers 40/0.03A, 4P	pcs	2
Circuite breaker C/10-32A, 1p; 6kA	pcs	36
locking latches	pcs	2

Unit price includes dismantling of all old equipment and installation, assembly and connection of the new one as described above.

Calculation per installed set as described above.

BoQ Item	D1.3.	Unit	set
Unit price definition	Replacement of the distribution board "RT-SP" equipment		
Description			
Dismantling of all equipment and installation of the new in the distribution cabinet "RT-SP" located on first floor. The unit price includes all elements necessary for the installation of switches and cable shunting (cable glands, busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, terminal block, copper braids, single-pole scheme, pocket for single-pole scheme and other necessary material). The new equipment in the board consists of the following elements:			
Switch-disconnectors 1-0, 200A, 3P	pcs	1	
Switch-disconnectors 1-0, 100A, 3P	pcs	1	
comb switches 1-0, 3P, 25A	pcs	24	
Residual current circuit breakers 40/0.03A, 4P	pcs	6	
contactor 150A, 3P, 230 Vac	pcs	1	
Circuite breaker C/10-32A, 1p; 6kA	pcs	142	
locking latches	pcs	12	
Unit price includes dismantling of all old equipment and installation, assembly and connection of the new one as described above.			
Calculation per installed set as described above.			

BoQ Item	D1.4.	Unit	set
Unit price definition	Replacement of the distribution board “RT-FS” equipment		
Description			
Dismantling of all equipment and installation of the new in the distribution cabinet "RT-FS" located on ground floor. The unit price includes all elements necessary for the installation of switches and cable shunting (cable glands, busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, terminal block, copper braids, single-pole scheme, pocket for single-pole scheme and other necessary material). The new equipment in the board consists of the following elements:			

Switch-disconnectors 1-0, 100A, 3P	pcs	1
comb switches 1-0, 3P, 25A	pcs	88
Residual current circuit breakers 40/0.03A, 4P	pcs	2
contactor 63A, 3P, 230 Vac	pcs	1
Circuite breaker C/10-32A, 1p; 6kA	pcs	36
locking latches	pcs	4
Unit price includes dismantling of all old equipment and installation, assembly and connection of the new one as described above.		
Calculation per installed set as described above.		

BoQ Item	D1.5.	Unit	set
Unit price definition	Replacement of the distribution board “RT-FS-rasvjeta” equipment		
Description			
Dismantling of all equipment and installation of the new in the distribution cabinet "RT-FS-rasvjeta" located on ground floor. The unit price includes all elements necessary for the installation of switches and cable shunting (cable glands, busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, terminal block, copper braids, single-pole scheme, pocket for single-pole scheme and other necessary material). The new equipment in the board consists of the following elements:			
comb switches 1-0, 3P, 25A	pcs	6	
Residual current circuit breakers 40/0.03A, 4P	pcs	2	
Circuite breaker C/10-32A, 1p; 6kA	pcs	10	
locking latches	pcs	2	
Unit price includes dismantling of all old equipment and installation, assembly and connection of the new one as described above.			
Calculation per installed set as described above.			

BoQ Item	D1.6.	Unit	set
Unit price definition	Distribution cabinet "RO-K1", degree of protection IP40, intended for wall mounting		
Description			
Supply and installation of metal cabinet "RO-K1" a workshop made, for wall mounting, appropriate dimension, degree of protection IP40, with the introduction of the power cable on the bottom and cables output on the top. Distribution cabinet is made of twice pickled sheet metal 2 mm thick and varnished according to the request of the supervisor. The frame of the cabinet is made of profiled iron 2 mm thick. The cabinet shall be lockable.			
The following elements shall be installed in the cabinet:			
Switch-disconnectors 1-0, 100A, 3P	pcs	1	
Residual current circuit breakers 100/0.03A, 4P	pcs	1	
Residual current circuit breakers 40/0.03A, 4P	pcs	1	
DM motor switch 4-6.3A,78A, GV2ME10	pcs	1	
DM motor switch 2.5-51A,78A, GV2ME08	pcs	1	
Circuite breaker C/20A, 3p; 6kA	pcs	6	

Circuite breaker C/16A, 3p; 6kA	pcs	10
Circuite breaker C/16A, 1p; 6kA	pcs	19
Circuite breaker C/10A, 1p; 6kA	pcs	2

The unit price includes busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, copper braids, cable glands, single-pole scheme, pocket for single-pole scheme and other necessary small material necessary for the installation of cabinets, total for material and work.
Calculation per installed set.

BoQ Item	D1.7.	Unit	set
Unit price definition	Distribution cabinet "RO-K2", degree of protection IP40, intended for wall mounting		
Description			
Supply and installation of switchboard "RO-K2", a workshop made, appropriate dimension, degree of protection IP40, with the introduction of the power cable on the bottom and cables output on the top. Distribution cabinet is made of twice pickled sheet metal 2 mm thick and varnished according to the request of the supervisor. The frame of the cabinet is made of profiled iron 2 mm thick. The cabinet shall be lockable.			
The following elements shall be installed in the cabinet:			
Switch-disconnectors 1-0, 100A, 3P	pcs	1	
Residual current circuit breakers 100/0.03A, 4P	pcs	1	
Residual current circuit breakers 40/0.03A, 4P	pcs	1	
DM motor switch 4-6.3A,78A, GV2ME10	pcs	1	
DM motor switch 2.5-51A,78A, GV2ME08	pcs	1	
Circuite breaker C/20A, 3p; 6kA	pcs	6	
Circuite breaker C/16A, 3p; 6kA	pcs	10	
Circuite breaker C/16A, 1p; 6kA	pcs	15	
Circuite breaker C/10A, 1p; 6kA	pcs	1	
The unite price includes busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, copper braids, cable glands, single-pole scheme, pocket for single-pole scheme and other necessary small material necessary for the installation of cabinets, total for material and work.			
Calculation per installed set.			

BoQ Item	D1.8.	Unit	m'
Unit price definition	Power lines		
Description			
Delivery and installation of power lines from main distribution cabinet “GMRO” to distribution board “RO-K2”. The conductors are laid partly on cable trays, partly in the suspended ceiling and partly on the walls under the plaster, along the routes as given in the main design.			

The unit price includes delivery with installation, connection and testing of the following types of conductors/power lines: N2XH-J 4x25 mm²/ P/F 1x16 mm²

Calculation per m1 of installed conductor.

BoQ Item	D2.1; D10.1	Unit	LS
Unit price definition	Dismantling of existing equipment and installation of general consumption		
Description			
Disassembly of the existing equipment and electrical installations of general consumption in the rooms which are reorganized (toilets, kitchen, teacher lounge, etc.).			
Calculation per lump sum with removal to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	D2.2; D10.2	Unit	m'
Unit price definition	Cable ducts		
Description			
Procurement, delivery and installation of halogen-free ducts (polycarbonate/abs alloy) for laying cables (at platform, corridors, passages, etc.),			
The unit price includes all the necessary parts for installation, procurement, delivery and installation.			
Calculation per m1 of installed cable duct.			

BoQ Item	D2.3.	Unit	m'
Unit price definition	Electrical conductor, type N2XH-J 3x2,5mm²		
Description			
Supply and installation of electrical conductors, type N2XH-J 3x2,5mm², for circuits of connectors and other connection points according to the main design and single-pole schemes. Conductors are laid partly above suspended ceilings and partly on the wall below the plaster.			
The unit price includes making grooves in ceiling and walls, electrical connection on both sides, as well as plastering/restoration of damaged surfaces, total for material and work.			
Calculation per m1 of installed conductor.			

BoQ Item	D2.4; D10.3	Unit	m'
Unit price definition	Electrical conductor, type N2XH-J		
Description			
Procurement, delivery and construction of single-phase connection points with electrical conductors, type N2XH-J 3x2,5mm ² , 5x2,5mm ² , 5x4,0mm ² for circuits of connectors and other connection points according to the main design and single-pole schemes. Conductors are laid partly above suspended ceilings and partly on the wall below the plaster.			
The unit price includes making grooves in ceiling and walls, electrical connection on both sides, as well as plastering/restoration of damaged surfaces, total for material and work.			
Calculation per m1 of installed conductor.			

BoQ Item	D3.1; D11.1	Unit	pcs
Unit price definition	Dismantling of existing equipment		
Description			
Disassembly of the existing lams and corresponding lighting conductors.			
Calculation per piece of dismantled lamp lump sum with removal to the landfill, located at ADH not exceeding 20 km, including payment of the fee for disposal of waste materials.			

BoQ Item	D3.2; D11.2	Unit	pcs
Unit price definition	Electrical conductors of lighting		
Description			
Delivery of materials and execution of lighting circuits, without installation of lamps and switches, with electrical conductors N2XH-J 3x1,5 mm², PP00-y 3x2,5 mm². The conductors are laid partly through a single layer corrugated pipes Ø16 mm in the ceiling and partly in the wall under the plaster. The average length per connection point is 10 m,12m, 14m, 16m,25m. The Contractor shall perform the installation according to the main design and technical description.			
The unit price includes making grooves in ceiling and walls, corrugated pipes, electrical connection on both sides, as well as plastering/restoration of damaged surfaces, total for material and work.			
Calculation per piece of installed electrical circuit.			

BoQ Item	D3.3; D11.3	Unit	pcs
Unit price definition	Recessed LED 600x600 lamp with frame, 4000K, IP20/IP44, IK06, 3800lm, 115 lm/W, 33W, labeled (S1)		
Description			
Procurement, delivery and installation of recessed LED 600x600 lamp and frame for installation of lamp in a monolithic plasterboard ceiling. The lamp shall have total input power 33 W, light output flux 3800lm, light color temperature 4000K, lamp efficiency 115lm / W, light source characteristics MacAdam 3, 50.000 operating hours before decreasing light flux on 80% initial value at 25°C, mechanical protection IK06, protection degree IP20/IP44, CE certified, dimensions 596x596x14 mm, weight 4 kg, type BETA 2 LED3800-840 HF Q600 Thorn or equivalent. The lamp shall have a light source and all the necessary equipment for functioning.			
Calculation per piece of installed LED lamp.			
Supply and installation of the lamp housing frame.			
Calculation per piece of installed frame.			

BoQ Item	D3.4; D11.5	Unit	pcs
Unit price definition	Surface-mounted LED 1220x120 lamp, 33.3 W, 3900lm, 117lm/W, 4000K, IP50, labeled (S3)		
Description Procurement, delivery and installation of surface-mounted LED lamp. The lamp shall have total input power 33,3 W, lamp light output flux 3900lm, light color temperature 4000K, lamp efficiency 117lm/W, light source characteristics MacAdam 3, 50.000 operating hours before light flux drops to 90 % of initial value at 25 ° C, protection degree IP50, CE certified, dimensions			

1220x120x91 mm, weight 2,5kg, type PERLUCE O LED 3800-840 L1220 EVG IP50 WH or equivalent. The lamp shall have a light source and all the necessary equipment for work.
Calculation per piece of installed LED lamp.

BoQ Item	D3.5; D11.6	Unit	pcs
Unit price definition	Surface-mounted LED Ø307 mm lamp, 16.3W, 1950lm, 4000K, 120lm/W, IP65, IK10, labeled (S4)		
Description			
Procurement, delivery and installation of surface-mounted LED lamp. The lamp shall have total input power 16,3W, lamp light output flux 1950lm, light color temperature 4000K, lamp efficiency 120lm/W, light source characteristics MacAdam 3, 50.000 operating hours before light flux drops to 90 % of initial value at 25 ° C, protection degree IP65, mechanical protection IK10, CE certified, dimensions Ø307x58 mm, weight 0,98kg, type KAT RD 2000-840 HF Thorn or equivalent. The lamp shall have a light source and all the necessary equipment for work.			
Calculation per piece of installed LED lamp.			

BoQ Item	D3.6; D11.7	Unit	pcs
Unit price definition	Surface-mounted LED lamp with integrated 4m radius presence sensor, 16.3W, 1950lm, 4000K, 120lm/W, IP65, IK10, labeled (S5)		
Description			
Procurement, delivery and installation of surface-mounted LED lamp with integrated presence radius 4m. The lamp shall have total input power 16,3W, luminous light output flux 1950lm, light color temperature 4000K, luminaire efficiency 120lm / W, light source characteristics MacAdam 3, 50,000 operating hours before decline light flux at 80% of the initial value at 25 ° C, el. ballast integrated inside the lamp, made of polycarbonate, gray, degree of protection IP65, mechanical protection IK10, has ENEC and CE certification, dimensions Ø307 x 58 mm, weight 0,98 kg, type KAT RD 2000-840 HF Thorn or equivalent. The lamp shall have a light source and all the necessary equipment for work.			
Calculation per piece installed.			

BoQ Item	D3.7.	Unit	pcs
Unit price definition	Surface-mounted LED 600x600 lamp with frame, 20 W, 2720 lm, 136 lm/W, IP20/IP40, 4000K, labeled (S6)		
Description			
Procurement, delivery and installation of surface-mounted LED 600x600 lamp. The lamp shall have total input power 20 W, light output flux 2720lm, light color temperature 4000K, lamp efficiency 136lm/W, honeycomb optics that provide glare coefficient UGR <16 and L65 <1000cd / m2 according to EN 12464, light source characteristics MacAdam 3, 50.000 operating hours before decreasing light flux on 80% initial value at 25°C, luminaire housing made of sheet steel with enamel finish in white, protection degree IP20/IP44, CE certified, dimensions 600x600x52 mm, type MIRL A LED2800-840 Q600 EVR Zumtobel or equivalent. The lamp shall have a light source and all the necessary equipment for functioning.			
Calculation per piece installed LED lamp.			

BoQ Item	D3.8.	Unit	pcs
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Unit price definition	Surface-mounted LED 1100x92 lamp, 35.2W, 4000k, 124 lm/W, IP66, IK08, labeled (S7)
Description	<p>Procurement, delivery and installation of surface-mounted LED lamp. The lamp shall have total input power 35,2 W, lamp light output flux 4530lm, light color temperature 4000K, lamp efficiency 129lm/W, light source characteristics MacAdam 3, 50.000 operating hours before light flux drops to 90 % of initial value at 25 ° C, color reproduction index 80, with high-transmission opal polychromatic with refractive prisms, complete with electronic switching device, mechanical protection IK08, protection degree IP66, CRI 80, CE certified, dimensions 1100x92x90 mm, weight 1,7kg, type Aquaforce Pro 96630754 Thorne or equivalent. The lamp shall have a light source and all the necessary equipment for work.</p> <p>The contractor shall supply and install chain suspensions, type: Aquaforce Pro or equivalent. This item will be paid separately, per set of installed chains suspensions.</p> <p>Calculation per piece of installed LED lamp.</p> <p>Calculation per set of installed suspension kit.</p> <p>Calculation per m1 of installed suspension chain.</p>

BoQ Item	D3.9.	Unit	pcs
Unit price definition	Surface-mounted LED lamp, for sport hall, 130W, 16800LM, 4000K, 129lm/W, IP65, IK08, labeled (S8)		
Description	<p>Procurement, delivery and installation of surface-mounted LED lamp, for sport hall. The lamp shall have total input power 130 W, lamp light output flux 16800lm, light color temperature 4000K, lamp efficiency 129lm / W, glare coefficient UGR <22, light source characteristics MacAdam 3, 50.000 operating hours before light flux decreases to 80% initial value at 25 ° C, protection grade IP65, IK08, electrical insulation class SC1, ambient operating temperature from -40° C to + 55° C, the lamp has ENEC and EAC certificates, dimensions 390x390x114 mm, weight 6kg, to type CRAFT M LED17000-840 PM LDO WH or equivalent. The lamp shall have a light source and all the necessary equipment for work.</p> <p>Calculation per piece of installed LED lamp.</p> <p>Procurement, delivery and installation of a ceiling/wall bracket, type: CRAFT AD/AW type or equivalent. The bracket shall have possibility of adjusting the angle (the angle is set in 15° steps), approved for use in sports halls, has a BWS certificate.</p> <p>Calculation per installed piece.</p>		

BoQ Item	D3.10.	Unit	pcs
Unit price definition	Surface-mounted LED lamp, 41W, 4956lm, 121 lm/W, IP20, 4000K, labeled (S9)		
Description	<p>Procurement, delivery and installation of surface-mounted LED lamp. The lamp shall have total input power 41W, light output flux 4956lm, light color temperature 4000K, lamp efficiency 121lm/W, glare coefficient UGR <19, light source characteristics MacAdam 3, 50.000 operating hours before light flux decreases to 80% initial value at 25 ° C, made of cast aluminum, protection degree IP20, the lamp has ENEC and EAC certificates, dimensions 1209x115x63 mm, weight 3kg, type LINCOR DI C 5000-840 L12 LDE ASQ1 SR or equivalent. The lamp is delivered in a package</p>		

with a light source and all the necessary equipment for work. The lamp shall have a light source and all the necessary equipment for work.
Calculation per piece of installed LED lamp.

BoQ Item	D3.11; D11.8	Unit	pcs
Unit price definition	Surface-mounted LED lamp for evacuation routes, 4 W, 130 lm, 32lm/W, autonomi 3H, IP40, labeled (P1)		
Description			
Procurement, delivery and installation of surface-mounted LED lamp for evacuation routes. The lamp shall total input power 4W, output flux 130lm, lamp efficiency 32lm/W, autonomy 3h, light source characteristics with estimated lamp life 50.000 at 25°C, el. ballast integrated inside the luminaire, made of cast aluminum, degree of protection IP40, white color, dimensions 146x146x34mm, weight 1 kg, type VOYAGC STAR MSC E3 WH or equivalent. The lamp is delivered complete with a light source and all the necessary equipment for work.			
Calculation per piece of installed LED lamp.			

BoQ Item	D3.12; D11.9	Unit	pcs
Unit price definition	Surface-mounted LED lamp for evacuation routes, 4 W, 130 lm, 32lm/W, autonomi 3H, IP40, labeled (P2)		
Description			
Procurement, delivery and installation of surface-mounted LED lamp for evacuation routes. The lamp shall total input power 4W, output flux 130lm, lamp efficiency 33lm/W, autonomy 3h, light source characteristics with estimated lamp life 50.000 at 25°C, el. ballast integrated inside the luminaire, made of cast aluminum, degree of protection IP40, white color, dimensions 146x146x34mm, weight 1 kg, type VOYAGC STAR ANT E3 WH or equivalent. The lamp is delivered complete with a light source and all the necessary equipment for work.			
Calculation per piece of installed LED lamp.			

BoQ Item	D3.13.	Unit	pcs
Unit price definition	Spotlight with LED light source, 45W, 4500lm, 4000k, 100lm/W, IP66, IK07, labeled (R1)		
Description Procurement, delivery and installation of spotlight with LED source. The lamp shall have total input, total input power 45W, light output flux 4500lm, light color temperature 4000K, lamp efficiency 100lm/W, asymmetric optics, made of light gray cast aluminum (RAL9006), 50.000 operating hours before decay light flux at 85%, el. ballast integrated inside the luminaire, degree of protection IP66, IK07, dimensions 181x236x48mm, weight 1.7kg, CE and ENEC certified, Type:			

LED Fit from Thorn or equivalent. The lamp is delivered complete with a light source and all the necessary equipment for work.

Calculation per piece of installed LED lamp.

BoQ Item	D3.14.	Unit	pcs
Unit price definition	Spotlight with LED light source, 90W, 9000lm, 4000K, 100 lm/W, IP66, IK07, labeled (R2)		
Description			
Procurement, delivery and installation of spotlight with LED source. The lamp shall have total input, total input power 90W, light output flux 9000lm, light color temperature 4000K, lamp efficiency 100lm/W, asymmetric optics, made of light gray cast aluminum (RAL9006), 50.000 operating hours before decay light flux at 85%, el. ballast integrated inside the luminaire, degree of protection IP66, IK07, dimensions 368x236x48mm, weight 3kg, CE and ENEC certified, Type: LED Fit from Thorn or equivalent. The lamp is delivered complete with a light source and all the necessary equipment for work.			
Calculation per piece of installed LED lamp.			

BoQ Item	D3.15.	Unit	pcs
Unit price definition	Photorelay		
Description Procurement, delivery and installation of photorelay as replacement of existing ones for outdoor lighting control purposes. Calculation per piece installed.			

BoQ Item	D4.1; D12.	Unit	pcs
Unit price definition	Modular accessories for outlet 2P+E, 16A, white color, 2M		
Description			
Supply and installation of modular accessories, white color, built-in PVC box Ø60mm armature 2M,			
mask 2M, outlet 2P+E 16A, 2M – 1pcs – white			
Calculation per installed set.			

BoQ Item	D4.2.	Unit	pcs
Unit price definition	Modular accessories for outlet 2P+E, 16A, white color, 2M with IP44 protection		
Description Supply and installation of modular accessories, white color, built-in PVC box Ø60mm armature 2M, mask 2M, outlet 2P+E 16A, 2M – 1pcs – white, with IP44 index of protection. Calculation per set installed.			

BoQ Item	D4.3.	Unit	pcs
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Unit price definition	Three-phase outlet 16A/400V
Description	Supply and installation of three-phase connector 16A/400V, in accordance with IEC standards. Calculation per installed set.

BoQ Item	D4.4.	Unit	pcs
Unit price definition	Three-phase outlet with IP protection IP44 16A/400V		
Description	Supply and installation of three-phase connector 16A/400V with IP 44 protection, in accordance with IEC standards. Calculation per installed set.		

BoQ Item	D4.5.	Unit	pcs
Unit price definition	Industrial outlet with IP protection IP67, 3P+N+PE, 32A, 400V		
Description	Supply and installation of industrial outlet, 3P+N+PE, 32A/400V with IP 67 protection, 6h, in accordance with IEC standards. Calculation per installed set.		

BoQ Item	D4.6; D12.2	Unit	pcs
Unit price definition	Modular accessories for two outlets (2 x (2P+E, 16A)), white color, 4M		
Description	Supply and installation of modular accessories, white color, built-in PVC box 4M, armature 4M, mask 4M – white, outlet 2P+E 16A, 2M - 2 pcs – white. Calculation per installed set.		

BoQ Item	D4.7.	Unit	pcs
Unit price definition	Modular accessories for two outlets (2 x (2P+E, 16A)), white color 4M, with IP protection		
Description	Supply and installation of modular accessories, white color, built-in PVC box 4M, armature 4M, mask 4M – white, outlet 2P+E 16A, 2M - 2 pcs – white, with IP protection. Calculation per installed set.		

BoQ Item	D4.8.	Unit	pcs
Unit price definition	Modular accessories for three outlets (3 x (2P+E, 16A)), white color, 6M		
Description	Supply and installation of modular accessories, white color, built-in PVC box 6M, armature 6M, mask 6M – white, outlet 2P+E 16A, 2M - 3 pcs – white. Calculation per installed set.		

BoQ Item	D4.9.	Unit	pcs
Unit price definition	Modular accessories for four outlets (2 x (2P+E, 16A); and 2 x (2P, 16A)), white color, 6M		
Description	Supply and installation of modular accessories, white color, built-in PVC box 6M, armature 6M, mask 6M – white, outlet 2P+E 16A, 2M - 2 pcs, 1M -1 pcs – white. Calculation per installed set.		

BoQ Item	D4.10.	Unit	pcs
Unit price definition	Modular accessories for TWO outlets (1 x (2P+E, 16A); and 1 x (2P, 16A)), white color 6M		
Description	Supply and installation of modular accessories, white color, built-in PVC box 6M, armature 6M, mask 6M – white, outlet 2P+E 16A, 2M - 2 pcs, 1M -1 pcs – white. Calculation per installed set.		

BoQ Item	D4.11.	Unit	pcs
Unit price definition	Modular accessories for one ordinary switch, white color, built-in PVC Ø60mm, 2M - ordinary switches		
Description	Supply and installation of modular accessories, white color, built-in PVC box Ø60mm armature 2M, mask 2M, ordinary switch, 2M –1pcs -white Calculation per installed set.		

BoQ Item	D4.12.	Unit	pcs
Unit price definition	Modular accessories for 2way switch, white color, built-in PVC Ø60mm, 2M - 2way switch		
Description	Supply and installation of modular accessories, white color, built-in PVC box Ø60mm armature 2M, mask 2M, 2way switch, 2M –1pcs -white Calculation per installed set.		

BoQ Item	D4.13.	Unit	pcs
Unit price definition	Modular accessories for two ordinary switches, white color, built-in PVC Ø60mm, 2x1M - ordinary switches		
Description	Supply and installation of modular accessories, white color, built-in PVC box Ø60mm armature 2M, mask 2M, ordinary switch, 1M –1pcs -white Calculation per installed set.		

BoQ Item	D4.14.	Unit	pcs
Unit price definition	Modular accessories for three ordinary switches, white color, built-in PVC 3M, 3x1M - ordinary switches		
Description Supply and installation of modular accessories, white color, built-in PVC box Ø60mm armature 2M, mask 3M, ordinary switch, 3M –1pcs -white Calculation per installed set.			

BoQ Item	D5.1; D13.1	Unit	m'
Unit price definition	Conductor P/F 1x16 mm²		
Description			
Making galvanic connection of all metal masses in the building that do not belong to the electrical installation with fine-wire conductors P/F 1x16 mm² (handrails, fences, metal doors and etc.)			
Calculation per m1 of installed conductor.			

BoQ Item	D5.2.	Unit	m'
Unit price definition	Conductor H05Z-K 1x6 mm²		
Description			
Making galvanic connection of all metal masses in the building that do not belong to the electrical installation with fine wire conductor with halogen free insulation 1x6mm².			
Calculation per m1 of installed conductor.			

BoQ Item	D5.3.	Unit	pcs
Unit price definition	Busbar for potential equalization		
Description			
Delivery and installation, according the position given in the drawing, of the busbar for potential equalization. The busbar is equipped with connection clamps and 8 connection points, for connecting cables up to 10 mm ² and with a cover.			
Calculation per piece of installed busbars.			

BoQ Item	D6.1; D14.1	Unit	m'
Unit price definition	Galvanized steel flat conductor Fe/Zn 25x4 mm		
Description			
Supply and installation of the lowering system made of the plate conductor made of galvanized steel Fe/Zn 25x4 mm, according to the plan of the lightning installation, and in all according to the main design.			
Calculation per m1 of installed conductor.			

BoQ Item	D6.2.	Unit	m'
Unit price definition	Galvanized steel flat conductor Fe/Zn 20x3 mm		
Description			
Supply and installation of the plate conductor made of galvanized steel Fe/Zn 20x3 mm on the roofs, according to the plan of the lightning installation, and in all according to the main design. The new conductors shall be connected with old ones.			
Calculation per m1 of installed conductor.			

BoQ Item	D6.3.	Unit	pcs
Unit price definition	Holders of the lightening conductors		
Description			
Delivery and installation of wall and roof holders for lightening conductors.			
Wall			
The facade holders are installed every 80-100 cm. The unit price includes bracket with dowel and screws 160 mm long.			
Roof			
Fixing tape for fixing a roof conductor for roofs covered with PVC roof coverings. The tape must be from the same material as the roof covering on which the fastener is fixed. Before ordering the Contractor shall check type of roof covering. The tape must be attached according to the instructions of the roof covering producer.			
Unit price include all work, material, scaffolder and similar for installation.			
Calculation per piece of installed holder.			

BoQ Item	D6.4; D14.2	Unit	pcs
Unit price definition	Connecting elements, strip-strip		
Description			
Delivery and installation of materials and couplings: type KON 01 – strip – strip connection, LOV-light. protection point of impact, KON 08 – wire-wire connection, KON 02 – strip-wire connection, producer Hermi or equivalent.			
Calculation per installed piece.			

BoQ Item	D6.5.	Unit	pcs
Unit price definition	Lightening reception system with early start		
Description			
Delivery and installation of the lightening reception system (grippers) with early start, type: SI60 INTERCEPTOR manufactured by ERICO or equivalent. The system consists of the following elements: lightning protector interceptor SI 60 (1 pcs), grip bracket - 2m section 1 (1pcs), grip bracket - 2m section 2 (1pcs), grip attachment bracket (1 pcs), clamps for tape connection (1pcs)- Sections are 2m and 2x1m. The column is mounted on the wall using prefabricated brackets according to the manufacturer's instructions.			
Before installing the lightning reception system, the contractor shall check continuity of the existing downlines and, in the case of an interruption, restore them to the correct condition.			
Unit prices includes all works and materials necessary for installment of the system.			

Calculation per installed piece of elements.

BoQ Item	D7.1.	Unit	pcs
Unit price definition	Conventional fire alarm control panel		
Description			
Supply and installation of conventional fire alarm control panel, capacity 4 zones. The control panel shall be Bosch FP 104-1S0 type or equivalent. The control panel with possibility of programing executive functions. A backup battery power supply shall be provided, in the metal housing, which shall enable system autonomy for 7hA. The control panel shall be manufactured in accordance with EN 54.			
Unit price includes procurement, delivery, installation, programming, commission and training of the und-users.			
Calculation per installed piece complete as described above.			

BoQ Item	D7.2.	Unit	pcs
Unit price definition	Relays		
Description			
Supply and installation of 12V/DC relays for executive functions of the fire protection system.			
Calculation per installed piece.			

BoQ Item	D7.3.	Unit	pcs
Unit price definition	Telephone communicator		
Description			
Supply and installation of the telephone communicator, type: PARAVOX VD710 or equivalent, for wall mounting.			
Calculation per installed piece.			

BoQ Item	D7.4.	Unit	pcs
Unit price definition	Conventional automatic thermal-smoke fire detector		
Description			
Supply and installation of a conventional automatic fire detector, thermal-smoke, type Bosch FCH-T, or equivalent. Environmental electromagnetic impact monitoring for quick analysis and prevention of false alarms. It contains an integrated loop insulator.			
Unit price includes all works and materials including mounting base.			
Calculation per installed piece.			

BoQ Item	D7.5.	Unit	pcs
Unit price definition	Manual fire detector		

Description

Supply and installation of an addressable manual fire detector for wall mounting to the cable installation, type: BOSCH FMC-120-DKM or equivalent.
Calculation per installed piece.

BoQ Item	D7.6.	Unit	pcs
Unit price definition	Conventional alarm siren		
Description	Supply and installation of a Conventional alarm siren, for indoor wall installation. Sound level up to 100dB (A). A short-circuit and interrupt line insulator shall be installed in the siren. Calculation per installed piece.		

BoQ Item	D7.7.	Unit	pcs
Unit price definition	Conductors PP 3x1,5 mm2		
Description	Supply and installation of cable type PP 3x1,5 mm2, for connecting of fire protection control panel to the power supply. Calculation per m1 of installed conductor.		

BoQ Item	D7.8.	Unit	pcs
Unit price definition	Halogen free cable JH (St) H 2x2x0,8mm2		
Description	Supply and installation in PVC pipe Ø 20mm, halogen free cable JH (St) H 2x2x0,8mm2, for connecting of system elements with fire protection control panel. Calculation per m1 of installed conductor.		

BoQ Item	D7.9.	Unit	pcs
Unit price definition	Halogen free flexible PVC pipes, Ø 20mm		
Description	Supply and installation of halogen free single layer flexible PVC pipe, Ø 20mm. Calculation per m1 of installed pipe.		

BoQ Item	D8.1; D15.1	Unit	LS
Unit price definition	Testing electrical installations and obtaining certificates		
Description	Testing of the electrical installations with obtaining a certificate from an accredited company for issuing the certificates. If the certificates are negative, the contractor will have to bring the installation to a correct condition and perform the test again. Calculation pre lump sum.		

BoQ Item	D8.2	Unit	LS
Unit price definition	Testing grounding and lightning protection and obtaining certificates		
Description			
Testing of the all electrical installations (grounding and lightning protection and installations) with obtaining a certificate from an accredited company for issuing the certificates. If the certificates are negative, the contractor will have to bring the installation to a correct condition and perform the test again.			
Calculation pre lump sum.			

BoQ Item	D8.3.	Unit	LS
Unit price definition	Testing of the fire alarm system		
Description Testing of the fire alarm system and training of the end-users. Calculation pre lump sum.			

BoQ Item	D9.1.	Unit	set
Unit price definition	Replacement of the "GRO-B" distribution cabinet equipment		
Description			
Dismantling of all equipment and installation of the new in the main distribution cabinet "GRO-B". The unit price includes all elements necessary for the installation of switches and cable shunting (cable glands, busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, terminal block, copper braids, single-pole scheme, pocket for single-pole scheme and other necessary material). The new equipment in the board consists of the following elements:			
switch disconnector INS 1-0, 250A, 3P	pcs	1	
Current transformer 200/5A	pcs	3	
contactor iCT 100A, 3P, 230V	pcs	1	
contactor iCT 63A, 3P, 230V	pcs	2	
contactor iCT 25A, 3P, 230V	pcs	2	
fuse switch disconnector with fuses ISFT 160/x A	pcs	2	
rail residual current circuit breakers (RCCB) iID 40/0,03A, 4P	pcs	2	
circuit breaker iC60H-C/10-32A, 1P, 10kA	pcs	16	
locks	pcs	4	
Unit price includes dismantling of all old equipment and installation, assembly and connection of the new one as described above.			

Calculation per installed set as described above.

BoQ Item	D9.2.	Unit	set
Unit price definition	Replacement of the distribution board “RT-S” equipment		
Description			
Dismantling of the existing switchboard (made of flammable material - wood)and installation of the new "RT-S". "RT-S" is intended for installation, made of sheet metal measuring 400x400x150mm. The item also includes all elements necessary for the installation of switches and cable shunting (cable glands, busbars, terminal blocks, POK ducts, plastic labels, pertinax, nameplates, terminal block, copper braids, single-pole scheme, pocket for single-pole scheme, lock for lock and other necessary material). Install the following equipment in the board:			
differential switch iID 40/0.03A, 4P			
circuit breaker iC60N-C/10-32A, 1p; 6 kA			
Unit price includes dismantling of all old equipment and installation, assembly and connection of the new one as described above.			
Calculation per installed set as described above.			

BoQ Item	D11.4.	Unit	pcs
Unit price definition	Surface-mounted LED 600x600 lamp with frame, 3800lm, 115 lm/W, 3W,4000K, IP20/IP44, IK06, labeled (S2)		
Description			
Procurement, delivery and installation of recessed LED 600x600 lamp and frame for installation of lamp in a monolithic plasterboard ceiling. The lamp shall have total input power 33 W, light output flux 3800lm, light color temperature 4000K, lamp efficiency 115lm / W, light source characteristics MacAdam 3, 50.000 operating hours before decreasing light flux on 80% initial value at 25°C, mechanical protection IK06, protection degree IP20/IP44, CE certified, dimensions 596x596x14 mm, weight 4 kg, type BETA 2 LED3800-840 HF Q600 Thorn or equivalent. The lamp shall have a light source and all the necessary equipment for functioning.			
Calculation per piece of installed LED lamp.			
Supply and installation of the lamp housing frame.			
Calculation per piece of installed frame.			

BoQ Item	D14.3.	Unit	m'
Unit price definition	Excavation of trenches, dim. 0,4x0,8m		
Description			
Marking of the routes and mechanical and manual excavation of the trench, dim. 0,4x0,8m, in the soil of III and IV category, for the purpose of construction of the grounding installation.			
Calculation per m1 of excavated trench.			

BoQ Item	D14.4	Unit	m'
Unit price definition	Backfilling the trenches		
Description			
Backfilling the trench with soil from excavation with flattening of the surface and bringing to its original state.			
Calculation per m1 of filled trench.			

BoQ Item	D14.5	Unit	m'
Unit price definition	Galvanized steel conductors Fe/Zn Ø8mm		
Description			
Supply and installation of the lowering system made of galvanized steel Fe/Zn Ø8mm conductors, according to the plan of the lightning installation, and in all according to the main design. The new conductors shall be connected with old ones.			
Calculation per m1 of installed conductor.			

BoQ Item	D14.6	Unit	m'
Unit price definition	Aluminum conductors Ø10mm		
Description			
Supply and installation of the reception system made of aluminum Ø10mm conductors, according to the plan of the lightning installation, and in all according to the main design. The new conductors shall be connected with old ones.			
Calculation per m1 of installed conductor.			

BoQ Item	D14.7	Unit	LS
Unit price definition	Connection of all metal masses on roofs		
Description	<p>Connection of all metal masses on the roof with the receiving line of the lightning protection installation.</p> <p>Calculation per lump sum.</p>		

BoQ Item	D14.8	Unit	pcs
Unit price definition	Roof conductor fasteners		
Description	<p>Supply and installation of roof rails – type: SON 16 or equivalent intended for mounting on metal sheet roofs.</p> <p>Calculation per installed piece.</p>		

BoQ Item	D14.9	Unit	pcs
Unit price definition	Brackets for wall, T shape		
Description	<p>Supply and installation of wall, T brackets for the installation of Fe/Zn strip on ventilation opening and vertical crossing.</p> <p>Calculation per installed piece.</p>		

BoQ Item	D14.10	Unit	pcs
Unit price definition	Steel “L” profile		
Description	<p>Supply and installation of mechanical lightning protection made of steel "L" profile. Steel profile is 1,6 m long.</p> <p>Calculation per installed piece.</p>		

Section 7: Mechanical Installations

7.0. General for all work items

This technical specifications and bill of quantities envisages equipment that meets parameters required by the main design.

The contractor shall install the equipment with same or better characteristic as one described in technical specification as well as dimensions that can fit into the designed installation.

When submitting bids, the contractor must review the entire works by inspecting the textual and graphic documentation, in order to avoid unjustified subsequent works, as well as to precisely specify the equipment (type and manufacturer) that he is able to provide.

In each position of bill of quantities (Volume 4), unless otherwise stated written, is included:

- procurement,
- transport to the installation site,
- assembly and installation,
- production of specific assemblies,
- delivery and installation of auxiliary assembly and consumables,
- all necessary tools, scaffolding and means of transport,
- field allowances for workers, accommodation and food,
- transport of workers,
- customs duties and taxes.

The agreed unit prices include all works, material, scaffolding, transportation, use of tools, equipment or machines etc., to provide fully completed and accepted position of the works.

These general conditions apply to each item of BoQ separately.

7.1. Air Ventilation

7.1.1. Introduction

The air ventilation system is designed in the culinary classrooms which are located in the ground floor of the building "A".

The interior solution of the rooms and the fact that they are not classic kitchen (with grouped kitchen appliances), but a classroom with several kitchen blocks, concentrated around spatially separated electric stoves, conditioned the solution of the technical solution of the ventilation system. The design envisages a system of 4 wall and 2 island eco-hoods, which are for each room connected into a common duct system with an exhaust fan for extracting waste air, smoke and fatty vapors with an exit to the facade of the building. In order to avoid intense overflow (draft) through the room, a system is which brings the appropriate amount of outside fresh air into each eco-hood is also designed. The

amount of air supplied in this way will be slightly smaller than the amount of extracted air, so the premises of these classrooms will be in small under negative pressure in relation to the neighboring rooms.

One of the windows on the facade under the ceiling should be opened every time the ventilation is switched on, in order to ensure the exchange of air in the parts of the room that are not covered by hoods and are needed for people's breathing. In periods when the classrooms are not working (between classes), natural ventilation of the premises should be performed by opening the windows.

7.1.2. General requirements

1. The installation shall be made all according to the main design.
2. All elements of the installation shall in all details correspond to the specified characteristics and shall have such dimensions that they can fit into the dimensions provided by the main design.
3. The installation contractor declares that he has the knowledge and capabilities required of the contractor of this type, i.e.:
 - a) to be able to procure, deliver, install, connect with other elements of the installation envisaged by the project, whether domestic or imported equipment, and to have the means to provide for this equipment the appropriate prospectuses, instructions and explanations that would be required for this purpose;
 - b) to have the knowledge and ability to solve all the details within the installation, in an appropriate technical and aesthetic way, for which no detailed drawings are given such as: hanging pipes and air ducts, making solid and sliding supports, installation of vent vessels, installation of heating bodies, placing equipment on floating, elastic or solid foundations, fitting equipment into an architectural and construction unit, etc.;
 - c) to have the possibilities necessary for the regulation of the operating parameters of the installation:
flow and flow rate, water and air temperature and humidity using all design elements provided by the project.
4. The equipment, materials and fittings that will be used to make the installations must be of the latest factory production in all respects in accordance with the applicable regulations. Fittings and measuring instruments must be of solid construction and fully fit their purpose.
5. The contractor shall install all the equipment envisaged by main design project in the manner defined by the drawings, technical description and this technical specification. The contractor is obliged to provide his professional and auxiliary workforce, his tools, machines, instruments and everything else that is needed for installation.
6. Works on the construction of the foundation for the equipment that requires funding are part of the delivery of the installation and the contractor shall perform them. All masonry work required to fasten the brackets, binders, clamps etc. for carrying the elements of the installation, are the responsibility of the contractor.
7. The contractor shall install the control circuits, as well as all other elements that make up the automatic control, according to the main design. The contractor is obliged to fully comply with the instructions of the manufacturer of measuring and control equipment during installation, as follows: detailed connection diagrams, installation instructions and instructions for regulation and operation.

8. After the completion of the entire installation, the contractor shall control and fine-tune the equipment for measuring and automatic regulation according to the designed parameters.
9. Electrical installation is the subject of the electrical installation design, however, the connection of all electrical devices as part of the designed mechanical equipment is required to be performed by the mechanical installation contractor, with his workforce, materials and tools.
10. All electrical equipment intended for installation in the designed installation must be adapted for connection to the network 3x380V, 50Hz, or 220V and 50Hz for single-phase connections.
11. Electric motors should be supplied with fuses and starters.
12. Electro-control switchboards should contain all the elements necessary for the management, control and security of the device (fuses, countersinks, control lamps, etc.). All necessary relays and other electrical instruments that fall within the scope of automation or are part of the equipment that forms the connection between the automation and the electric motor should also be mounted on the electrical control panel.
13. The contractor shall provide all the necessary material for the electrical connection of all electric motors and other electrical devices that are part of the installation, with each other, as well as with the electrical control switchboard.
14. Insulation and painting are approached after the installation is completed and after a successful test of the tightness of the installation. Prior to insulation and painting, all metal parts of the installation without factory surface protection must be thoroughly cleaned with a steel brush and primed twice. Insulation must be performed correctly and, in the manner, defined by the main design. Painting the installation is performed with a color of the supervisor choice. The paint should have good covering properties and resistance to the maximum predicted temperature.
15. After the complete installation, the trial work and regulation of the installation should be started. During the test run, perform all preparatory actions, such as releasing air from the pipeline, pre-regulation, placing the valves in the working position, etc., and then start the installation. After eliminating any deficiencies that occur in the installation of the installation, proceed to its fine regulation, using the all-project provided and installed control and measuring devices and equipment. Report the regulation of speeds, flows and temperatures accurately and well, adhering to the conditions defined by the project.

a) Specific requirements for ventilation installations

1. The pipes should be laid so that the pipes can stretch freely, without stress. The stroke of the pipe due to stretching must not lead to tearing or damage of the elements that support the pipelines, nor damage the building elements of the building. All fixed parts (solid points) must be solidly constructed so that the pipeline cannot move. Install pipe bushings in pipe penetrations through walls and mezzanine structures. Joining of pipes that are performed by welding, pre-prepare, and after welding process the weld, so that the bright opening does not change.
2. Pipe distribution should be performed so that the pipes are placed with the required slope and fastened with hangers, clamps and brackets. The distance between the brackets i.e., the hangers, unless otherwise specified in the documentation, shall be adopted according to the following table:

Pipe diameter	The distance between the supports(m)
NO10	1.5
NO15 - NO20	2.0
NO25 - NO32	2.5
NO40 - NO50	3.0
NO65 - NO80	3.0
NO100	4.5
NO125 and more	5.0

3. Galvanized sheet metal of the following thicknesses must be used for the production of flat and shaped parts of the channel, as follows:

Larger channel side (mm)	Sheet thickness(mm)
do 250	0.5
251 - 499	0.75
500 - 999	1.0
over 1000	1.25

For reducers and other fittings for determining the thickness of the sheet, the dimension of the larger edge at the end of the smaller cross section applies.

4. Rolled profiled steel must be used to make the flanges, as follows:
a) for sheet metal parts 0.5 to 0.75 mm thick L 25x25x4mm,
b) for sheet metal parts 1.0 to 1.25 mm thick L 30x30x4mm.
5. Joining of sheets of flat and shaped parts of sheet air ducts should be done with a double bent seam. Angle iron flanges should be installed at the ends of straight and shaped parts. The ends of the sheet metal of individual parts must be bent over the flange (laced). A seal made of 5-8 mm asbestos braid or 3-4 mm thick asbestos cardboard should be placed between the flanges. Use $\varnothing 1/4$ " hexagon head screws to connect the flanges.
6. Channel hangers and brackets must be made of rolled steel $\varnothing 10$ mm and L profiles measuring 25x25x3mm to 35x35x3mm, using an M10 nut and a washer.
7. The channels should be made with as few sharp turns as possible. Each elbow of the channel should be made with guide vanes, and the same applies to forking. Channels with a longer cross-sectional dimension larger than 500 mm should be "spanned" in order to avoid drumming.

8. The valves for regulating the amount of air must be of solid construction with stiffeners on the lower and upper edge, in order to avoid their vibration in any direction. The valves have shafts outside the channel or chamber and can be manually operated or motor driven.
9. All fans in the installation must be of static pressure capacity and speed as indicated in the specification, and of such dimensions that they can be installed in the space provided for them. Fans must belong to the class of "noiseless", i.e. to have the least possible noise at a given speed. The fans should be connected to the electric motors via V-belts and couplings. V-belts and pulleys must be fitted with guards.
10. Electric motors for fan drive must be designed for connection to a three-phase system of rated current 380 V, 50Hz. Electric motors should be of completely closed construction, with sliding pulleys and must be equipped with appropriate rotor starters. Electric motors are mounted on sliding rails made of cast iron or pressed steel.
11. Refrigeration plants should have the capacity and characteristics defined by the project, equipped with all necessary devices for commissioning, regulation and maintenance of operating parameters and safety-protective elements. Install the cooling system in all respects according to the conditions and requirements of the manufacturer.
12. Equipment requiring funding should be placed on appropriate foundations, the definitive measures of which are determined according to the dimensions of the delivered equipment.
13. Install the equipment in the machine rooms according to the project, taking into account the possibility of access to certain elements, the possibility of access to certain elements and devices for handling and the possibility of their disassembly. Pay special attention to the installation of safety-technical and protective equipment, such as connecting expansion vessels, safety valves, installation of fire dampers and other fire-fighting devices, silencers, etc., adhering to the project documentation and the laws and regulations used in the project.
14. The tightness test is performed on both the water and air part of the installation. The aqueous part is tested with cold water at a test pressure which is determined as the sum of the hydrostatic pressure and the pump head, increased by 2 bar. The installation is held to test pressure for two hours. During this time, there must be no leaks or leaks, ie no pressure drop at the control points.
15. The airtightness of the air part of high-pressure installations is tested by measuring the flow at the outlet connection of the air-conditioning chamber and at the current elements. The balance of the amount of air must not differ by more than 10%. On low pressure installations, only the tightness of the air part of the installation is inspected.
16. During the technical testing of the installation, it is checked whether the installed equipment, devices and automation correspond to the project. Also, the quality of installation works is determined and the projected parameters on the installation and in air- conditioner rooms are checked.
17. The room temperature in winter mode is checked when the outside temperature is - 5 ° C or lower, and in the summer period when the outside temperature is 29 ° C or higher and the weather is sunny. After three hours of uninterrupted operation of the installation, if the rooms on the previous day were normally air-conditioned, the temperatures envisaged by the project must be reached in all rooms. Temperature measurement is performed in the middle of the room at a height of 1.2 m from the floor. During this measurement, it is necessary to measure all other parameters on the installation necessary for their conversion to the conditions of external design parameters.

7.2 Unit description

BoQ Item	E1.1	Unit	pcs
Unit price definition	Centrifugal box fan, 120oC continuous		
Description	<p>Supply and installation of centrifugal box fan (duct fan) for extracting air from kitchen hoods, with motor out of air flow, for temperatures up to 120°C, type: SYSTEMAIR MUB / T 042 450D4 or equivalent together with speed regulator type: RTRE 7 or equivalent.</p> <p>The ventilator shall has following technical characteristic: air flow $V = 3000 \text{ m}^3/\text{h}$, working static pressure $\Delta P = 320 \text{ Pa}$, power supply 1014 W, 230 V, 5.3 A.</p> <p>Calculation per installed piece of fan together with speed regulator.</p>		

BoQ Item	E1.2	Unit	pcs
Unit price definition	Centrifugal rectangular duct fan		
Description	<p>Supply and installation of centrifugal rectangular duct fan for injection of the air into the perimeter of the kitchen hood, type: SYSTEMAIR KT 60-30-4 or equivalent together with speed regulator type: RTRE 4 or equivalent.</p> <p>The ventilator shall has following technical characteristic: air flow $V = 2700 \text{ m}^3/\text{h}$, working static pressure $\Delta P = 210 \text{ Pa}$, power supply 1619 W, 400 V, 2.71 A.</p> <p>Calculation per installed piece of fan together with speed regulator.</p>		

BoQ Item	E1.3	Unit	pcs
Unit price definition	Manual damper for flow regulation		
Description	<p>Supply and installation of manual damper for flow regulation for round ducts $\varnothing 150$ and $\varnothing 200$, type IMP KLIMA DSU 150, DSU 200 or equivalent.</p> <p>Calculation per installed piece.</p>		

BoQ Item	E1.4	Unit	pcs
Unit price definition	Aluminum weather louvre with fixed blades, 1600x400 mm		
Description	<p>Supply and installation of wall grille with counter-frame for air extraction, type WLA-22 VN, supplied with a water stop at the rear edge, drip nose and bird netting, in dimension: 1600x400 mm.</p> <p>Calculation per installed piece.</p>		

BoQ Item	E1.5	Unit	pcs
Unit price definition	Island range hood		
Description	<p>Supply and installation of the kitchen eco-hood, island version, made of stainless steel AISI 430, with grease filters, high temperature resistant lighting, grease tank and grease drain connection, type JAKKA JOEH 900x1800x500 mm or equivalent.</p> <p>Calculation per installed piece.</p>		

BoQ Item	E1.6	Unit	pcs
Unit price definition	Wall range hood		
Description	<p>Supply and installation of the kitchen eco-hood, wall-mounted, made of stainless steel AISI 430, with grease filters, high temperature resistant lighting, grease tank and grease drain connection, type: JAKKA JZEH 900x900x500 or equivalent.</p> <p>Calculation per installed piece.</p>		

BoQ Item	E1.7	Unit	kg
Unit price definition	Air ducts made of galvanized sheet steel		
Description	<p>Supply and installation of air ducts, straight and shaped. Air ducts shall be made from high quality galvanized sheet metal, with a zinc coating of 275 g/m² marked DX51D + Z275 according to EN10142 (zinc coating thickness 19 µm), thickness from 0,6 mm to 1,2 mm, with meeting the requirements for strength and permeability according to EN 1507, dimensions in accordance with the standard EN 1505.</p> <p>Transverse stiffening "Z" with DS fold, and additional stiffening of the longer sides of the channel.</p> <p>Calculation per kg of installed ducts.</p>		

BoQ Item	E1.8	Unit	0,5
Unit price definition	Connecting, suspension and supporting material		
Description	<p>Supply and installing the flanges from profiled iron (MEZ profile and corners), sealing the flanges with spongy self-adhesive tape; the manufacture of girders and hangers made of "L" and other profiles and threaded rods Ø8 which are connected by steel dowels to the concrete structure, as well as to all other connecting, suspension and supporting material, is taken 50% of the previous item.</p> <p>Unit price includes all work and materials as described.</p>		

BoQ Item	E1.9	Unit	kg
Unit price definition	Air ducts made from steel sheet metal d=2,0mm		
Description	<p>Supply and installation of air ducts, straight and shaped. Air ducts shall be made from high quality sheet metal d=2,0 mm. The metal sheet shall be protected with anticorrosion coating. Dimensions in accordance with the standard EN 1505. Transverse stiffening "Z" with DS fold, and additional stiffening of the longer sides of the channel.</p> <p>Calculation per kg of installed ducts.</p>		

BoQ Item	E1.10	Unit	0,5
Unit price definition	Connecting, suspension and supporting material		
Description	<p>Supply and installing the flanges from profiled iron (MEZ profile and corners), sealing the flanges with spongy self-adhesive tape; the manufacture of girders and hangers made of "L" and other profiles and threaded rods Ø8 which are connected by steel dowels to the concrete structure, as well as to all other connecting, suspension and supporting material, is taken 50% of the previous item.</p> <p>Unit price includes all work and materials as described.</p>		

BoQ Item	E1.11	Unit	m'
Unit price definition	Spiro channel / round air duct made of galvanized steel sheet metal		
Description	<p>Production and delivery of spiro channels made of high-quality galvanized sheet metal with zinc coating of 275g / m2 marked DX51D + Z275 according to EN 10142 (zinc coating thickness 19 µm), thickness from 0,6 mm to 1 mm, with meeting the requirements for strength and permeability according to EN 12237, dimension in accordance with standard EN 1506. Dimensions: Ø150mm, Ø200mm, Ø250mm.</p> <p>Calculation per m1 of installed duct.</p>		

BoQ Item	E1.12	Unit	pcs
Unit price definition	Spiro duct angle element 90o		
Description	<p>Production and delivery of spiro channels angle elements and necessary fittings, made of high-quality galvanized sheet metal with zinc coating of 275g / m2 marked DX51D + Z275 according to EN 10142 (zinc coating thickness 19), thickness from 0.6 mm to 1 mm, with meeting the</p>		

requirements for strength and permeability according to EN 12237, dimension in accordance with standard EN 1506.
K-Ø150-90 and K-Ø200-90
Calculation per installed piece.

BoQ Item	E1.13	Unit	pcs
Unit price definition	Connecting and sealing materials		
Description	<p>For Installation and material for connecting and sealing material, elbows, brackets, holders, pipe clamps, pipe hangers, metal rosettes, wall sleeves, disguise, similar material required for installation, 50% of the value of the spiro channel / round air duct and fittings is taken. Calculation per 50% of value of spiro channels/ducts and elements</p>		

BoQ Item	E1.14	Unit	pcs
Unit price definition	Execution of the opening of openings in the walls		
Description	<p>Demolition of walls of various thickness d=10/20/25 cm and materials masonry or concrete walls, in order to install air ducts and/or other installations. Demolition shall be done carefully with previous cutting in order not to damage the remaining part of the wall. The Contractor shall execute the demolition carefully, collect the rubble, take it out, load it on a truck and take it to the landfill. Calculation per lump sum.</p>		

BoQ Item	E1.15	Unit	pcs
Unit price definition	Testing of installation and users training		
Description	<p>After completion of works the contractor shall perform testing of installed ventilation system and obtained certificate of ventilation parameters. Also, the Contractor shall train the school staff to use the ventilation system. Calculation per lump sum.</p>		

BoQ Item	E2.1	Unit	pcs
Unit price definition	Painting of the existing cast-iron radiators, type T-22, of following size		
Description	<p>Dismantling, sandblasting, painting and installation of existing cast iron radiators, type T-22 product of the factory "Zrenjanin Radiator". After dismantling of heating elements-radiators shell be sandblasted and after that painted with in two coats with paint resistant to temperature of 120°C. The radiators are made of different numbers of cast iron element 600/160 mm: 7, 9,11,13, 14,17,18,20 or 21.</p> <p>Calculation per piece of painted and re-installed radiator as described above.</p>		

BoQ Item	F2.2	Unit	m'
Unit price definition	Dismantling of steel pipes		
Description	<p>Dismantling of the steel pipes of different diameters Ø21,3 x 2,3 mm, Ø26,9 x 2,6 mm, Ø33,7 x 2,6 mm Ø42,4 x 2,6 mm.</p> <p>Calculation per m1 of dismantled pipe, with transport to the landfill located at AHD not exceeding 20 km, including payment of the fee for disposal of waste materials.</p>		

BoQ Item	F2.3	Unit	m'
Unit price definition	Supply and installation of seamless steel pipes		
Description	<p>Supply and installation of steel pipes in accordance with EN10216-1 of different diameters. DN32 (42,4x3,2mm), DN25 (33,7x3,2mm), DN20 (26,7x2,6mm), DN15 (21,2x2,3mm).</p> <p>Calculation per m1 of installed steel pipe</p>		

BoQ Item	F2.4	Unit	m'
Unit price definition	Connection material		
Description	<p>Supply of black steel and galvanized fittings, reductions, clamps, threaded rods, metal dowels, L profiles, brackets in brackets, punching holes for pipe penetrations through walls and ceilings and etc.</p> <p>Calculation 40% of value od value of installed pipes.</p>		

BoQ Item	F2.5	Unit	m'
Unit price definition	Painting		
Description	<p>Painting the new pipe network and supports with two coats of paint. Prior the painting the Contractor shall degrease and clean from rust pipes and supports.</p> <p>Calculation per lump sum.</p>		

BoQ Item	F2.6	Unit	m'
Unit price definition	Insulation of steel pipes		
Description	<p>Metal pipes, which are laid in the cement screed or concrete slab should be insulated with bituminous tape, as protection against corrosion.</p> <p>Calculation per m1 of insulated pipe.</p>		

BoQ Item	F2.7	Unit	set
Unit price definition	Elements for cast iron radiators		
Description	<p>Supply and installation of following elements on cast iron radiators: cast iron plug DN25 (1''), reduction to 1/2'', reduction to 3/8'', adjustable manual radiator air vent with screwdriver cut breather valve 3/8''.</p> <p>Unit price includes all material and works.</p> <p>Calculation per installed set of elements on one radiator.</p>		

BoQ Item	F2.8	Unit	set
Unit price definition	Supporting and hanging accessories		
Description	<p>Supply and installation of accessories for supporting and hanging of radiators, made of cast steel, which shall be supported on the floor (2 pcs) and on the wall (KUD+NUT+PUT-P).</p> <p>Unit price includes all material and works.</p> <p>Calculation per installed set of elements on one radiator.</p>		

BoQ Item	F2.9	Unit	pcs
Unit price definition	Thermostatics valve with anti-vandal protection head		
Description	<p>Supply and installation of thermostatic valves DN 15 complete with thermostatic head in robust design for continuous adjustment of temperature with anti-vandal protection.</p> <p>Unit price includes all material and works.</p> <p>Calculation per installed set of elements on one radiator.</p>		

BoQ Item	F2.10	Unit	pcs
Unit price definition	Return valves DN 15		
Description	<p>Supply and installation of return valves DN 15 (1/2").</p> <p>Calculation per installed piece.</p>		

BoQ Item	F2.11	Unit	pcs
Unit price definition	Tap valves DN 15		
Description	<p>Supply and installation of DN 15 tap valves for filling and emptying the radiators installation. Tap valve is installed on radiator.</p> <p>Calculation per installed piece.</p>		

BoQ Item	F2.12	Unit	LS
Unit price definition	Tap valves DN 15		
Description	<p>The contractor shall preform following activities during testing of installation: testing of the constructed installation for strength and tightness – test with cold water; commissioning of the boilers; warm trial testing of the operation of the entire heating system; checking for correct functioning of all installed equipment; measurement on the flow-measuring control regulating valves of the flow by branches with regulation of the pipe network; checking the operation of</p>		

each radiator; checking correctness of thermostatic heads; regulation of all three-way heating circuits according to the outside temperature, checking of the correct operating of the of boilers; preparation of minutes on the correctness of all elements of the installation; marking with arrows the directions of the fluid flow on the pipelines and marking the belonging of the equipment according to its purpose (classrooms, gymnasium, offices and similar). The position includes and training of personnel responsible for managing and maintenance of the heating system. Calculation per lump sum.

Section 8: Sport Equipment

Before placement of order the Contractor shall control all measures and provide samples of equipment and furniture. If the Contractor delivers items for which he has not received prior consent, they will not be installed or paid for.

BoQ Item	F1	Unit	compl.
Unit price definition	Supply and installation of Swedish ladders		
Description			
Supply and installation of Swedish ladders, dim. 260x90 cm, with 16 rods fitted and fixed so cannot rotate. Sides are made of glued spruce wood, bars of hardwood. The ladder is mounted on the hall wall with a metal bracket made of metal profile minimal dim. 40x40 mm, which is included in the price.			
Calculation per installed piece.			

BoQ Item	F2	Unit	pcs
Unit price definition	Supply and installation of mattresses		
Description Supply and installation of gymnastic mat that is used for independent use, stretching and gymnastics. Dimensions 164x82x6 cm. Gymnastic mat cover is made of non-tearing PVC and bottom is non-slip. Filling made of 4 layers of steel-closed polyethylene. The equipment must comply with the standards EN 12503-1 and EN 1177. Calculation per installed piece.			

BoQ Item	F3	Unit	set
Unit price definition	Supply and installation SIDE-FOLDING BASKETBALL HOOPS from 250 to 350 cm		

Description

Supply and installation of wall-mounted folding basketball structure with security backboard and hinged hoop, hoop attached independently of security backboard on frame. Security board is built into a frame that has soft protection. Frame has a height regulator, which via the screw spindle (left - right thread) and gas damper allows simply and quickly adjustment of the height using the handle, hoop height from 250 to 305 cm. Opening and closing through a system of telescopic construction with a blocker for the open and closed position.

The wall-mounted folding basketball structures shall include all necessary elements for fastenings needed as:

- construction of wall frame and construction with sliding mechanism 310 cm long,
- security backboard with soft protection frame dim. 180 x 105 cm and hoop height adjustment from 260 to 305 cm,
- hinged basketball hoop with a net which hangs on a hoop in 12 points. Hooks shall not have sharp parts and shall have holes less than 8 mm, in order to prevent the entry of fingers.

Unit price includes all works, material and scaffolding.

Calculation per set of installed basketball structure

BoQ Item	F4	Unit	compl.
Unit price definition	Supply and installation of VOLLEYBALL equipment		
Description			
The poles shall be built-in type made of aluminium and allow easy tensioning of the net. The contractor shall prepare foundation for the poles according to manufacturer's instructions.			
The set of volleyball equipment consists of but is not limited to following elements:			
<ul style="list-style-type: none">- aluminium pole Ø 100 mm, height 3 m, with tensioning mechanism - 1 pcs- aluminium pole Ø 100 mm, height 3 m, without tensioning mechanism - 1 pcs- soft protection of volleyball poles - 2 pcs- foundation shell for volleyball poles Ø 100 mm - 2 pcs- sports floor cover with brass ring - 2 pcs- volleyball net for competition- 1 pcs- antennas and sticks for the competition volleyball net - 1 set- volleyball net tension kit - 1 pcs- referee volleyball stand, aluminium with soft protection - 1 pcs			
Unit price includes all works and material.			
Calculation per installed volleyball set.			

BoQ Item	F5	Unit	compl.
Unit price definition	Supply and installation of HANDBALL GOAL		

Description

Handball goal has aluminium frame with folding structure, net and floor fixing.

The handball goal includes the following elements, but is not limited to:

- goal frame made aluminium profiles with a minimum thickness of 2mm - 1 pcs
- folding steel structure up to 110 cm height - 1 pcs
- net for handball goal, made of nylon of minimum thickness 4 mm - 1 pcs
- handball net curtain, nylon material, thickness minimum fi 4 mm - 1 pcs
- elements for fixing of goal to floor – 1 set

Unit price includes all works and material.

Calculation per installed set as described above.

BoQ Item	F6	Unit	m ²
Unit price definition	Supply and installation of WINDOW PROTECTION NET		
Description			
Supply and installation of window protection net, made of nylon of minimum thickness 4 mm, squares maximum 100x100 mm. Net is fixed and tensioned with steel cables. Distance of net from windows will be on supervisor's choice.			
Unit price includes net, support brackets, steel cable, fastening materials, scaffolding and all other works and material needed for completion of item.			
Calculation per m2 of installed net.			

BoQ Item	F7	Unit	pcs
Unit price definition	Supply and installation of 5m climbing ropes		
Description			
Supply and installation of climbing ropes intended for schools. Rope is 5m long, Ø 35 in diameter, with high-grade quality material of hook. The unit price includes rope and rope holder with all the necessary connecting and mounting material and work.			
Calculation per installed piece.			