

Appendix 6. Technical Specifications

Building Technical Specifications

The technical specifications of the construction that will be supplied and assembled in the project, whose project design and drawing will be finalized by the CONTRACTOR, are presented as draft drawing in the technical specification documents in order to provide the following estimated areas. Net areas will emerge when the building is applied according to the dimensions in the prepared project.

The foundation construction to be prepared by the CONTRACTOR firm for the project is not under the commitment of the CONTRACTOR and will be completed by the ADMINISTRATION.

All main connections (electricity, clean water and waste water) will be brought to the buildings by the ADMINISTRATION so that the CONTRACTOR can complete the connections.

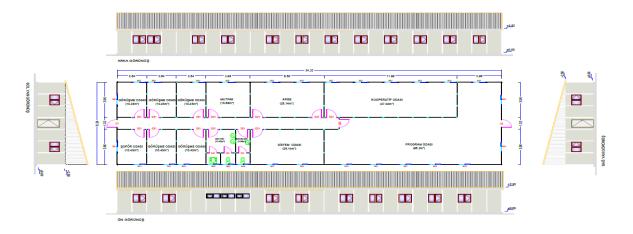
SN	Intended Use	Estimated Area m ²	Type of Manufacturing	Structure	Explanation
1	Interview Room 1	10	Prefabricated		
2	Interview Room 2	10	Prefabricated		
3	Interview Room 3	10	Prefabricated		
4	Interview Room 4	10	Prefabricated		
5	Interview Room 5	10	Prefabricated		
6	Program Room	100	Prefabricated		
7	Cooperative / Meeting Room	50	Prefabricated	Prefabricated Building 1	All prefabricated buildings shall be positioned in the direction of east-
8	System Room	30	Prefabricated	Building 1	west and the roof pitch direction
9	Driver Room	10	Prefabricated		shall be designed as facing south.
10	Toilet 1	3	Prefabricated		The solar panels to be installed later are planned to be placed on these
11	Toilet 2	3	Prefabricated		roofs. The design shall be made by
12	Accessible Toilet	4	Prefabricated		taking the panel weights into
13	Kitchen	15	Prefabricated		consideration while calculating the
14	R&D / Municipality	30	Prefabricated		roof weight.
15	Toilet (30 pieces)	90	Prefabricated	Prefabricated Building 2	
16	Shower (6 pieces)	20	Prefabricated		
17	Ablution Area	15	Prefabricated	Prefabricated	
18	Changing Room	90	Prefabricated	Building 3	
19	Prayer Room	15	Prefabricated		
20	Guard Post (2 pieces)	5	Ready Structure	Ready Structure	The posts will be located at the gate entrances.
21	Machine, Equipment, Storage Area	200	Tent	TENT 1	The tent shall be divided with a folding screen and half shall be used as machine/equipment area and the other half as storage area.
22	Kid-zone / Resting Area & Food Court	200	Tent	TENT 2	The tent shall be divided with a folding screen and half shall be used as kid-zone and the other half as resting area.



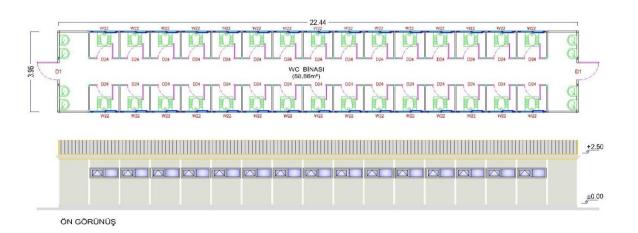
Supply and Assembly of Prefabricated Building

(Drawings have shared as example only – alternative layout acceptable)

1) Prefabricated Office Building

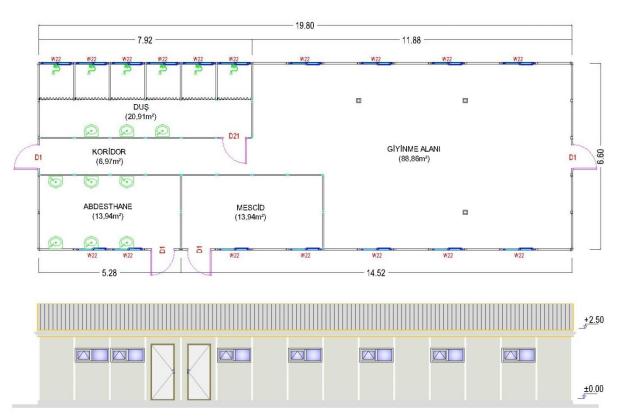


2) Prefabricated WC Building (30 Toilet Cabins and Wash Basins)



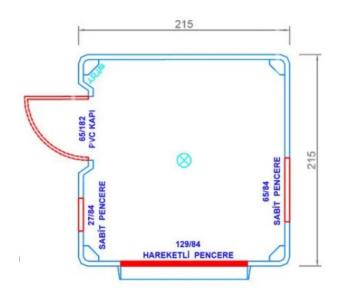


3) Prefabricated Changing Room-Living Space Building (Changing Room, 6 Showers, Ablution Area, Prayer Room)



ÖN GÖRÜNÜŞ

4) Guard Post - (suggested design)





GENERAL SPECIFICATIONS

- 1) The ready structures consisting of standard parts shall be bolt and nut connected. The building assembled on the concrete foundation shall be disassembled and re-assembled, extended or reduced when required.
- **2)** Since all panel dimensions are standard, the places of the panels shall be changeable and interchangeable.
- **3)** The ready structures shall be fixed to the concrete foundation with steel dowels. All bolts, nuts and flakes shall be galvanized steel which is rust-resistant
- **4)** The eave, corner and facade closures and closure between two floors of the building shall be RAL9002-off-white colored or equivalent standard colors determined by the ADMINISTRATION.
- **5)** The electrical and sanitary installation projects shall be prepared according to the necessary standards which has been indicated in details and as a method of implementation, cable channel crochet and clamp over the panel shall be used.
- **6)** The steel columns, beams and steel purlins constituting the load-bearing system shall be manufactured from ST 37 quality steel and will be coated with galvanize. Due to bolt and nut connections, the connections shall be disassembled and re-assembled. The materials used shall be galvanized.
- **7)** All structural loads, moving and constant loads on the foundation shall be submitted to the ADMINISTRATION after the static calculation of the CONTRACTOR. Clean water, wastewater and electricity projects will be prepared and submitted to the ADMINISTRATION. Following the approval, the implementation shall start.
- **8)** The roof and load-bearing system of the ready structures should be designed according to TS 500 values which could be changing to the location, with resistance to 50kg/m² wind load and 80kg/m² snow load and 20 kg/m² load (15 kg/m² structure_and_5 kg/ m² solar system) including the solar panels and connections and if requested, the relevant ratios shall be redesigned by also taking the geographical conditions and land structure of the relevant area into consideration.
- **9)** All prefabricated buildings shall be positioned in the direction of east-west and the roof pitch direction shall be designed as facing south. The solar panels to be installed later are planned to be placed on these roofs. The design shall be made by taking the panel weights into consideration while calculating the roof load.
- **10)** In the design and construction of the buildings, the "Regulation on the Fire Protection of the Buildings" and escape distances stated in ANNEX/5 chart of the same Regulation shall be complied. The fire escape doors shall be planned on the opposite direction of the buildings and the relevant fire escape doors shall be designed as to open outwards.
- **11)** The materials used shall comply with TSI, EN, DIN and ISO standards. When requested by the ADMINISTRATION, the conformity certificates with respect to the materials shall be presented to the ADMINISTRATION by the CONTRACTOR. In case the relevant work is not



included in the mentioned specifications, the equivalent standards internationally accepted with the relevant norms and standards shall be used.

- **12)** Following the project delivery, the audits for the Electric Safety, Building Safety and Fire Safety can be controlled by the ADMINISTRATION with the help of a third-party audit company and the non-conformities determined shall be urgently removed by the CONTRACTOR free of any additional charge.
- **13)** Together with the building project, the mechanical installation and electrical installation projects shall also be prepared and the projects and schemes shall be shared with the ADMINISTRATION.
- **14)** Draft Foundation Plan and Architectural Design of Structures will be submitted within the bidding process. After contract has been signed and upon the discussion and reviewing, clarified final designs should be submitted within 2 weeks period to ADMINISTRATION.
- **15)** The buildings shall be designed as disabled-friendly. The fire escape doors shall be designed as to allow the passing of a disabled_person in a wheelchair. The Office Building shall be planned as to include one (1) accessible toilet. Grab bars shall be placed in the accessible toilet. The Office Building and accessible toilet shall be flush toilets and the WC Building toilets shall be squat toilets.

WC Building: Thirty (30) 1.5x2 squat toilets

Office Building: One (1) 2x2 accessible toilet and two (2) 1.5x2 flush toilets

Panel

They will be laminated by pressing the insulation material placed between the outer and inner coating material under high pressure or will be produced as a steel framed panel made of galvanized C and U profiles produced in advanced technology roll-form machines.

It will be approximately in the dimensions stated below.

Exterior Wall Panels

Minimum Wall Height: 2500 mm

Insulation: The inner and outer coating material of the insulation material should be placed and applied in a single piece to cover the whole panel. In this way, maximum efficiency in insulation should be achieved.

Insulation value: $\lambda = 0.037 \text{ W/mK}$

Thermal Transmittance: $U = 0,663 \text{ W} / \text{m}^2 \text{ K}$



External Surface Coating

The coating material shall be A1 calss non-flammable, non-swelling, mold-proof, lightweight, moisture-proof and insect-proof.

Board: $(\lambda=0.20 \text{ w/mK} - 1300 \text{ kg/m}^3 \text{ (TS EN14509)}) \text{ (TS EN 13501-1:A1)}$

Color: The external surfaces shall be RAL9002-off-white colored.

Internal Surface Coating

The coating material shall be A1 calss non-flammable, non-swelling, mold-proof, lightweight, moisture-proof and insect-proof.

Board: $(\lambda=0.20 \text{ w/mK} - 1300 \text{ kg/m}^3 \text{ (TS EN14509)})$ (TS EN 13501-1:A1)

Color: The internal surfaces shall be RAL9002-off-white colored.

Interior Wall Panels

Minimum Wall Height: 2500 mm

Insulation: The inner and outer coating material of the insulation material should be placed and applied in a single piece to cover the whole panel. In this way, maximum efficiency in insulation should be achieved.

Insulation value: $\lambda = 0.037 \text{ W/mK}$

Thermal Transmittance: U = 0,663 W / m² K

External Surface Coating

The coating material shall be A1 calss non-flammable, non-swelling, mold-proof, lightweight, moisture-proof and insect-proof.

Board: $(\lambda=0.20 \text{ w/mK} - 1300 \text{ kg/m}^3 \text{ (TS EN14509)})$ (TS EN 13501-1:A1)

Color: The external surfaces shall be RAL9002-off-white colored.

Internal Surface Coating

The coating material shall be A1 calss non-flammable, non-swelling, mold-proof, lightweight, moisture-proof and insect-proof.

Board: $(\lambda=0.20 \text{ w/mK} - 1300 \text{ kg/m}^3 \text{ (TS EN14509)})$ (TS EN 13501-1:A1)

Color: The internal surfaces shall be RAL9002-off-white colored.

ROOF TECHNICAL PROPERTIES

Galvanized Steel Purlins

It shall be manufactured from galvanized steel in compliance with TSI standards.

Galvanized Steel Trusses



It shall be manufactured from galvanized steel in compliance with TSI standards. The galvanized steel trusses shall be connected with bolt and nut.

Rain Grooves and Rainwater Downpipes

The rain grooves and rainwater downpipes shall be manufactured from 1st class quality materials in compliance with TSI standards and added to the roof.

Ceiling

The ceiling cladding shall be drywall board in the dimensions of 600x1200.

Insulation: TSI 901 (0.043 W/m.K – 14kg/m3) (DIN 4102-1-A)

Moisture Barrier: Moisture mat manufactured from polyethylene materials in compliance with TSI standards shall be applied.

Ceiling Cladding: It shall be of colored modular drywall dropped ceiling in the dimensions of 60 cm x 120 cm

Internal Color: The internal surfaces shall be RAL9002-off-white colored.

Thermal Transmittance: U = 0.666 W / m2 K

Exterior Doors

The exterior doors shall be in the dimensions and specifications stated below. However, the dimensions can be changed in compliance with the intended use according to the request of the ADMINISTRATION.

Dimensions:

Approximate sizes

D1: 90 cm x 200 cm single-leaf exterior door

D2: 180 cm x 200 cm double-leaf exterior door

Door dimensions will be prepared according the project, minimum standards will be covered.

Door Frame: minimum 1.5 mm galvanized sheet

Surface Coating: 0.70 mm RAL9002-off-white colored

Insulation: (0.037 W/Mk – 16kg/m3

Lock: TSI 1st Class

Door Handle: TSI 1st Class

Hinge: TSI 1st Class Three (3) hinges

The exterior door leaf shall be colored stainless steel sheet coated and polystyrene (EPS) filled.

Interior Doors



The interior doors shall be in the specifications stated below. However, the dimensions can be changed in compliance with the intended use according to the request of the ADMINISTRATION.

Door dimensions will be prepared according the project, minimum standards will be covered.

Door Frame: minimum1.5 mm metal

Surface Coating: MDF panel door **Color:** RAL9002-off-white colored

Lock: TSI 1st Class

Door Handle: TSI 1st Class

Hinge: TSI 1st Class minimum Two (2) hinges

Windows

The windows will be formed according to the request of the ADMINISTRATION and shall be manufactured in white color PVC joineries. The windows shall be in the dimensions and specifications stated below. However, it can be changed in compliance with the intended use.

Within the prepared project, it will be determined according to below approximate dimensions

125x100 cm: 125 cm x 100 cm left fixed right leaf folding normal window

125x50 cm: 125 cm x 50 cm left fixed right leaf transom ground glass ribbon window

125x100 cm: 125 cm x 100 cm fixed window

125x100 cm: 125 cm x 100 cm sliding window

115x100 cm: 115 cm x 100 cm sliding up window

115x100 cm: 115 cm x 100 cm fixed window

125x150 cm: 125 cm x 150 cm gridded fixed window

125x150 cm: 125 cm x 150 cm left fixed right leaf folding window; gridded window

125x100 cm: 125 cm x 100 cm sliding window

Type: PVC (Polyvinyl Chloride) material

Protection: Removable insect screen shall be applied to the windows.

Glass: 4+12+4 mm double glazing

All materials to be used are in compliance with TSI standards and shall be manufactured from 1st class quality materials.

Sanitary Installations

The sanitary installations shall be applied with TSI certificated 1st class quality materials.



The sanitary installations will be applied by using PVC clamps from the wall surface.

Vitrification Materials shall be made of white ceramic

The armatures shall be tab armatures with cold-hot water options in case of hot water installations.

Clean Water Pipes should be PPR-C pipes and pipe joints.

Waste Water Pipes should be PVC pipes and pipe joints

The wash basins shall be in the dimensions and specifications stated below. However, the dimensions can be changed in compliance with the intended use according to the request of the ADMINISTRATION.

Approximate sizes:

Wall mounted wash basin in the dimensions of 40 cm x 50 cm

Wash basin with mirror in the dimensions of 30 cm x 40 cm, under mirror shelf and melamine soap pump

The showers shall have soap pump, shower curtain and shower grill. The shower flooring shall be made of 1st class quality ceramics suitable dimensions for purpose

Toilet Seat (Flush Toilet): Wash down ceramic toilet seat shall be used and shall have melamine toilet paper holder.

Toilet Bowl (Squat Toilet): Ceramic squat toilet with tap and flush shall be used and shall have tap and melamine toilet paper holder.

Urinal: Ceramic urinal and urinal partitions shall be used.

Water Sanitation Installation

All urinal, toilet and toilet connections, clean water and waste water connections will be made with suitable materials and first class workmanship. The connection of the waste water connections to the waste water chimney to be shown by the ADMINISTRATION will be carried out by the CONTRACTOR. Selection of suitable infrastructure materials will be decided by the supervisor.

Kitchen Sink and Cabinets

The kitchen sink shall be in the dimensions and specifications stated below. However, the dimensions can be changed in compliance with the intended use according to the request of the ADMINISTRATION.

Metal sink in the dimensions of 100 cm x 50 cm shall be used on the countertop with melamine coated chipboard.



TECHNICAL SPECIFICATIONS FOR ELECTRICAL INSTALLATIONS

The Electricity Projects of the Buildings planned to be carried out and built in compliance with the relevant regulations (General Technical Specifications for Electrical Installations, Electrical Interior Installations Regulation and Heavy Current Electrical Installations Regulation) shall be prepared by the CONTRACTOR and submitted to the approval of the ADMINISTRATION.

All types of issues endangering human health shall be considered and the necessary measures shall be taken in the project accordingly (residual current device, appropriate ground connections and etc.).

It will be produced from 1st class TSE certified materials according to the project approved by TEDAŞ.

HO7Z Halogen free cable will be used for indoor wiring.

STANDARDS TO BE COMPLIED

In case of the insufficiency of the standards and regulations stated below with respect to the implementation of the installations and equipment to be used in the project, the international standards shall be applied for information. When required, the interpretation of the relevant technical specifications or standards shall be done by the ADMINISTRATION or Control Engineering.

Standard Needs to be compiled in Tukey

Specifications and Unit Price Tariffs of the Ministry of Environment and Urbanization and Turkish Electricity Distribution Corporation (Shall be applicable for the manufacturing not defined in the Technical Specifications.),

Regulations of the Ministry of Environment and Urbanization,

Electrical Interior Installations Regulation,

Heavy Current Electrical Installations Regulation,

Grounding of the Electrical Installations Regulation,

Electrical Energy Installations Project Regulation of the Turkish Electricity Distribution Corporation,

Heavy Current Facilities with Rated Current over 1 kV,

General Technical Specifications of the Electricity Distribution Facilities,

Electrical Installations Acceptance Regulation,

Regulation on the Safety of the Electrical Installations and

General Lighting Regulation of the Turkish Electricity Distribution Corporation.



MEASUREMENT AND TESTING

When the testing of any system in the installations is requested by the Control Engineering during the course of the construction, the CONTRACTOR shall be liable to have the relevant testing done either together with the Control Engineering or by the relevant institutions by providing all equipment and tools and all relevant expenses shall be covered by the CONTRACTOR.

MEASUREMENT AND TESTING OF GROUNDING

In all installations, the measurement of grounding for the panels and each lighting column shall be done by the Chamber of Electrical Engineering and the measurement reports shall be submitted to the ADMINISTRATION.

OPERATING AND MAINTENANCE INSTRUCTIONS

The CONTRACTOR shall prepare the operating and maintenance instructions and connection schemes of all systems to be manufactured and assembled as one (1) original and five (5) copies in Turkish and, if possible, in English and submitted to the ADMINISTRATION. The CONTRACTOR shall provide the necessary and sufficient training with respect to the devices and operation upon the request of the ADMINISTRATION to the personnel determined by the ADMINISTRATION free of charge.

WARRANTY

The CONTRACTOR shall be responsible for the materials and installations until the general acceptance of the work. The CONTRACTOR shall install all systems in the relevant installations in full and operating and shall be responsible to immediately repair all breakdowns, expect for the usage errors, free of charge for one (1) year as of the temporary acceptance of the work. In case of the failure to repair the parts requiring reparation within one (1) month, the warranty shall be extended for one (1) month and the reparation of the parts not repaired in the relevant term shall be done from the market on behalf of the CONTRACTOR and shall be deducted from the guarantee of the CONTRACTOR. Even if the relevant part is not stated in the Technical Specifications, the CONTRACTOR shall submit the warranty certificates of all systems to the ADMINISTRATION as to start the warranties as of the date of temporary acceptance.

ENERGY SUPPLY

1- With respect to the energy supply, the CONTRACTOR shall be liable to receive the permission for energy by negotiating and exchanging correspondences within the framework of the work.



- **2-** The CONTRACTOR shall be liable to prepare the energy supply projects in accordance with the permission for energy and to have them approved by the relevant distribution company within the framework of the work.
- **3-** The CONTRACTOR shall complete all manufacturing in accordance with the energy supply

The electrical installation will be applied from the ceiling and the wall surface using TSI certified materials. 380 and 220 Volt electrical installation will be a circuit with leakage current protection relay, electrical panel grounded and PVC fuse box. (These values will be revised upwards for the request of the administration and the purpose of use.)

SWITCHES AND PLUGS

It shall be applied by using TSI certificated 1st class quality materials.

LUMINAIRES

Application will be made by using TSI certified, 1st class quality, IP 65 standards-compliant material. LED luminaires will be preferred in all productions and production will not be started without material approval from the ADMINISTRATION.

FUSES

Up to 16 a., switched automatic fuse (3ka)

Additionally, the supply and assembly of automatic fuse with 3 kA short circuit breaking capacity acting as a switch, with 2 and 4 pole neutral and phase cut specifications, B or C curve, manufactured in compliance with TSI 5018-1 EN 60898-1 standards and supplied to the market with CE conformity marking as to include all types of materials and workmanship.

It shall be applied by using TSI certificated 1st class quality materials.

CABLING

It will be carried out in accordance with the Electricity Internal Installation Regulation.

Phase: Brown - Black - Red, Neutral: Blue, Protection Conductor (Grounding): Yellow - Green color codes and by using TSI certified cables.

Installation line lines will be wired using 2.5 mm2 HO7Z, Lighting lines 1.5 mm2 HO7Z cable. In the dimensioning of the cable sections, the electrical project will be taken as a basis, in case of conflict, the administration will be consulted and the installation will continue.

FOUNDATION

The concrete foundation and floor to be prepared by the ADMINISTRATION and the assembly of the structures on shall be carried out by the CONTRACTOR.



BUILDING TAG

On all buildings, there shall be tags indicating the name and serial number of the building.

WARRANTY

The buildings shall be under warranty for one (1) year for manufacturing defects except for the usage errors as of the temporary acceptance term. During the warranty, the CONTRACTOR shall be responsible for the expenses related to the reparation of the breakdowns arising from the materials and manufacturing defects and expenses related to the parts and part replacement.

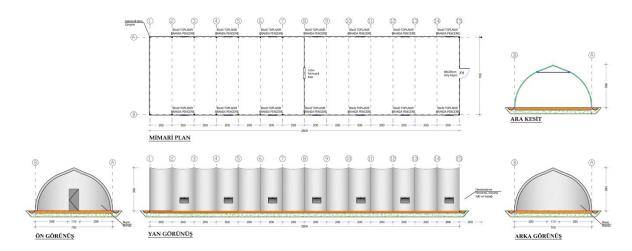


TECHNICAL SPECIFICATIONS OF THE TENTS

Purchase and Assembly of Prefabricated Building

- 1) Kid-zone Resting Area Tent
- 2) Machine Equipment Area Storage Area Tent

Example layout only – alternative acceptable



GENERAL SPECIFICATIONS

- 1) The tent structures consist of standard parts and shall be bolt and nut and split pin connected. The structure assembled on the concrete foundation and floor shall be disassembled and re-assembled, extended or reduced when required.
- **2)** It shall be designed as to be used as office, cafeteria, WC/bathroom and dormitory in worksite conditions and school, temporary housing, student dormitories, community health centers, hospital, canteen and guest house in natural life.
- 3) The tents are flexible structures made with jointed galvanized steel pipe frames and high strength PVC canvas. The tents have been designed by taking the first degree earthquake conditions into consideration and as snow proof and with resistance to wind load of 50kg/m² wind load and if requested, the relevant ratios shall be re-designed by also taking the geographical conditions and land structure of the relevant area into consideration.
- 4) All steel carriers shall be manufactured by using hot dipped galvanized materials.
- **5)** The tents requested shall be divided with a folding screen and middle passage door and could be lockable in case of need.

The half of first tent shall be used as kid-zone and the other half as resting area and

The half of the second tent shall be used as machine area and the other half as storage area.



There will be doors on the front and back side of the tents. It will allow evacuation in case of fire.

6) Concrete foundation or pebble floor is planned for the area where the tents are to be assembled by the ADMINISTRATION. The project shall be prepared by taking the height of the basement of the ground filling recommended into consideration and submitted to the ADMINISTRATION before the work.

Load-Bearing System

The load-bearing system consists of the frames and purlins manufactured from hot dipped galvanized pipes. The frames and purlins shall be bolt and nut and split pin connected.

Steel Frame Surface Protection

The frames, purlins and struts shall be manufactured from hot dipped galvanized pipes and profiles. All welds on steel parts will be made using galvanized welding electrodes.

Tarpaulin Body and Facade Coating

Approximately 500 g / m² PVC coated tarpaulin.

It should have the appropriate TS 10978 fire norm.

The exterior coating made of two sides PVC coated polyester plastic materials and turned into a single piece by adding with HF (high frequency) machines shall be resistant to UV rays of the sun, heat between 30°C and +70°C, wearing and acid.

The bright exterior surface shall be dirt-free, fungus-free, moss-free, foldable, rot-proof and easy to repair.

The tearing strength shall be minimum 50 kg/cm.

The thermal insulation resistance value shall be 5.0 Kcal m2h °C.

It shall be manufactured in WHITE color.

Tarpaulin Insulation and Interior Coating

TSI standards material will be used as the insulation layer. Approximately 180 gr / m² polyethylene tarpaulin will be used in the inner layer of the building.

Doors

The doors will have the following dimensions and features, but adjustment can be made in the dimensioning in accordance with the intended use in accordance with the request of the Administration.

The exit doors should be found in both front and back side of the tents to allow escape which allows fire evacuation.

Dimensions: minimum 180 cm x 220 cm double wing tarpaulin door



Insulation: The insulation material used in the body of the insulated tents shall also be used in the doors in compliance with TSI standards.

Lock: Metal lock with padlock in compliance with TSI standards shall be used.

Hinge: Three (3) white colored set screw hinges in compliance with TSI standards shall be used.

Natural Lighting

The white canvas used in the facade and body of the structure shall translucent and ensure natural lighting. Additionally, on the corners of the structure, insect screen windows in the dimensions of 50 cm x 50 cm shall be used.

Ventilation

In order to ensure natural ventilation, culverts with bird screen shall be used in the structures.

Foundation

Since no foundation is required, shall be fixed to the ground with special piles. However, when requested, fixing lugs shall be used to fix to concrete, asphalt or wooden beams.

Floor Covering

PVC floor covering shall be prepared by the CONTRACTOR for the tent floor as to ensure easy cleaning and hygiene conditions on the concrete foundation or compacted gravel floor made by the ADMINISTRATION.

Tent Electric General

In ready-made structures, 220 Volt electrical installation, leakage current protection relay, electrical panel grounded PVC fuse box circuit will be in accordance with the energy conditions and standards. (These values will be revised upwards for the request of the administration and the purpose of use.)

Switches and Sockets

Application will be made using TSE certified and 1st class quality materials.

Luminaires

Application will be made using TSE certified and 1st class quality materials. Led luminaire will be used.