EXCRETA DISPOSAL MANAGEMENT DURING EMERGENCY

January 2019

DOCUMENT INTERNE / **ACTION INTERNATIONALE**

GUIDELINES AND FACILITIES SET UP
FOR THE ERU

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IN THIS DOCUMENT YOU WILL FIND :

- Reminders about SPHERE standards and summary of main elements to take into account to choose the excreta management facility to implement
- Brief presentation of the main excreta management facilities
- A list of materials to be used for the construction of two emergency toilets
- Side diagrams for the construction of two emergency toilets
- Examples of emergency toilets

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REMINDERS ABOUT SPHERE STANDARDS

Containment of human excreta away from people creates an initial barrier to excreta-related disease by reducing direct and indirect routes of disease transmission. Safe excreta management is a WASH priority. In crisis situations, it is as important as providing a safe water supply. An environment free of human excreta is essential for people's dignity, safety, health and well-being.

Standard	Key actions
Environment free from human excreta	Immediately after a crisis, control indiscriminate open defecation as a matter of urgency. Establish facilities to immediately contain excreta.
	Consult representative stakeholders about the siting, design and implementation of any excreta disposal facilities as well as hygiene practices.
	Conduct a hygiene promotion campaign that encourages safe excreta disposal and creates a demand for more toilets.
Excreta disposal: adequate, appropriate and acceptable toilets in sufficient quantity	Consult representative stakeholders (especially women and girls, children, older people and persons with disabilities) for the location, design and constructions of toilets to minimise safety and security threats to users.
	Ensure that people have the information, means, tools and materials to construct, clean, repair and maintain their toilets.
	Ensure that the water supply needs can be feasibly met for handwashing with soap, for anal cleansing, and for flush or hygienic seal mechanisms (if selected). Provide appropriate cleansing material and ensure safe disposal and sustainability of supply.

To keep in mind:

> Building toilet facilities alone will not solve all hygiene threats. It is very essential to provide adequate information and knowledge to people affected by a disaster to prevent water-borne diseases.

> Representative stakeholders from the affected population must be involved in designing the adequate excreta disposal facilities according to:
  - Social and cultural practices;
  - Hygiene practices: knowledge and beliefs regarding excreta management, anal cleansing practices (with water, toilet paper, stone, etc.)…

> Culture and beliefs:
  - Cultural preferences as well as religious and personal beliefs are crucial to take into account in designing excreta disposal facilities. For example, Muslims would not defecate towards the Mecca. As such, toilets and toilet slabs should not be oriented towards Mecca.
  - Moreover, we know people prefer defecating while facing the toilet door. So it is necessary to plan sufficient space inside the toilets allowing users to easily turn in the facility.

> From the early stage of excreta disposal facilities design and locations you should take into account:
  - The toilet users' safety especially for women, pregnant women, kids, elderly, and disable persons (lighting, located to minimise security threats, etc.);
  - Adequate calculation of the volume of excreta to be produced according to the number of users (dimensioning toilet pits);
  - Discomforts generated by the odour, by the fact to be seen going into the toilet, the busiest of the areas where the toilets are located, etc.;
  - The likely moving / displacement of toilet facilities over the emergency period to mitigate the risks of contaminations and outbreaks, the odours, etc.; it would depend on the local weather conditions;
  - Needs for handwashing areas and provision of soaps near and inside the toilet facilities;
  - Solid waste management facilities to ensure the desludging of toilet pits (avoid solid wastes inside the toilet pits);

- Flooding risks (drainage) and toilet pits overflow which could contaminate the surface and underground water resources;

> The construction of the toilets should guarantee:

- Privacy in line with users' expectations (fences with sheets around the facilities, locks inside the toilets, single-access gender-neutral toilets, etc.);
- Sturdiness of the facilities;
- Easiness of use;
- Ventilation of the facilities to minimise fly and mosquito breeding;
- Maintenance of the latrine facilities especially their cleanliness (to put in place at early stage with the affected populations);

Key indicators:

> Ratio of shared toilets: minimum 1 per 20 people
> Segregate all communal or shared toilets by sex and by age where appropriate
> Distance between dwelling and shared toilet: maximum 50 meters
> Include handwashing facilities with soap at the toilet facility
> The bottom of toilet pits should be at least 1.5 metres above the groundwater table
> The distance between containment facilities and water sources (shallow wells, rivers, etc.) should be at least 30 metres
> Toilet pits should be as airtight as possible to mitigate the odours and the proliferation of flies

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THE MAIN EXCRETA DISPOSAL FACILITIES DURING EMERGENCY

1. **Open defecation areas / fields:** to be used the first 2-3 days when a high number of people need immediate excreta disposal facilities.

An open defecation field is a big fenced area used during the very first initial phase following an emergency. On average, 2 hectares (± 5 acres) per week for 10,000 people.

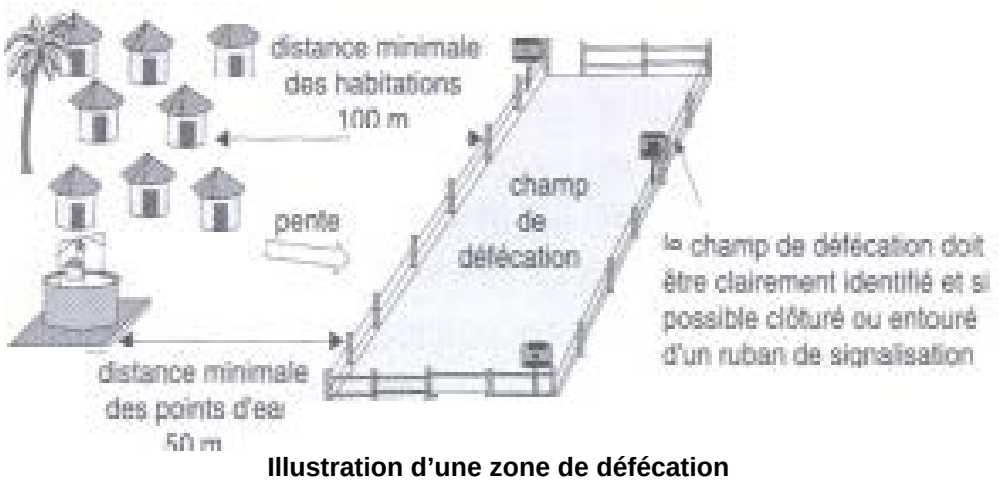

Illustration d'une zone de défécation

2. **Deep trench latrines / toilets:** 1st phase – until 2 months

Deep trench toilet facilities are fenced with plastic sheeting or fabric material. The height of the trench is generally comprised between 1m to 1.5m. To improve the facilities we can install squat-toilet plates on top of the trench and raise some "separation walls" between the toilet cabins.

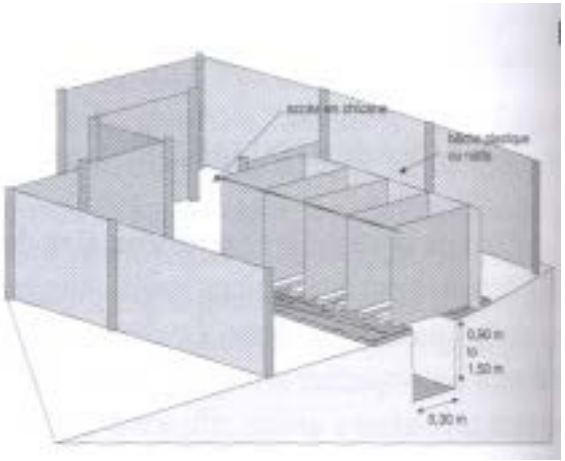

Schéma général de fosse d'aisance améliorée

Keep the excavated soil to further fill / cover the trenches when full or when the toilets are no longer in use. Identify new potential areas for building new deep trench toilets vs. your needs.

> Rotating areas for the deep trench toilets must be anticipated beforehand according to the available space and the population estimated needs.

> Keep the excavated soil at a fair distance from the toilet pits to avoid run-off entering (and potentially filling) your toilet pits. Drainage systems to be implemented.

Single pit toilets

Single pit toilets are composed of a soakaway pit, the toilet superstructure, and PVC / squatting slabs. Dimensions of squatting slabs might differ between the Movement partners e.g. the French Red Cross usually provides squatting slabs measuring 80x80cm while the IFRC provides either 60x90cm or 120x80cm slabs. However, it is possible to work with other dimensions squatting slabs in the field…

We generally use plastic sheeting to cover toilet and shower superstructures. If we build a set of toilets (several toilets in the same facility) we would need less material for the construction; however, there is a higher risk for the toilets to decay faster.

The choice of building materials would depend on the estimated lifespan of your toilets. For toilets to be used more than 4 months, it might be better to use treated-wood to protect your facilities against termites and other pests. Furthermore, using iron / steel sheets for your facility roofs would be better than plastic sheeting, especially in high pluviometry countries.

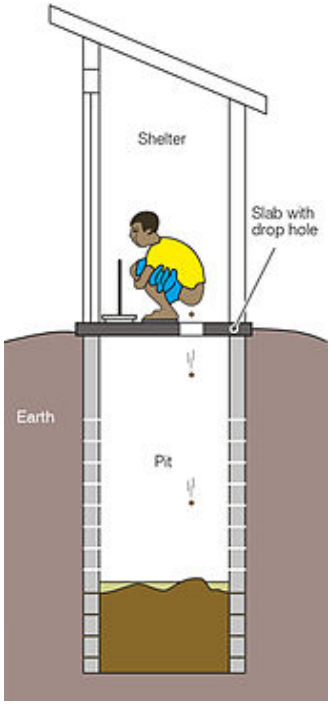

Diagram of a deep single pit toilet

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LIST OF CONSTRUCTION MATERIALS FOR 2 "BASIC STANDARD" TOILETS

- 1 wood saw
- 1 hammer
- 1 bubble level / level
- 1 knife or craft knife
- 5m rope
- Flat-headed nail: size of 70-80mm long, 1.5Kg or ± 50 pieces
- 2 PVC slabs (squatting plates) 80x80cm (dimensions can differ from this example)
- 16 m^2 of plastic sheeting or 15 m^2 iron / steel sheets (in case you use iron / steel sheets, you must plan an additional 16m wooden chevron / rafter 4/4cm to build the 2 door frames, 4 hinges to support the 2 doors and 2 hooks to close the doors from inside). A crosswise jamb on each door frame would increase the strengthening of your doors.
- 2m^2 of net such as mosquito net
- Wooden chevrons / rafters: 4/4cm over 2m: 23 pieces (equivalent to 46 linear metres).
  In detail, you will need 10 pieces of 2m (20m), 10 pieces of 0.88m (8.80m), 6 pieces of 0.80m (4.8m), 3 pieces of 1.85m (5.5m), and 3 pieces of 1.20m (3.6m).

CAUTION: dimensions provided here are given for the construction of "basic standard" toilets. You must adjust the dimensions when building accessible toilets (for pregnant women, elderly, person with disabilities, etc.).

SIDES DIAGRAMS / SCHEMES FOR THE CONSTRUCTION OF 2 TOILETS

1. Making the trench pit

Pit for 2 toilets (top view). Dimensions: **height = 1.5m, length = 2m, width = 0.8m**

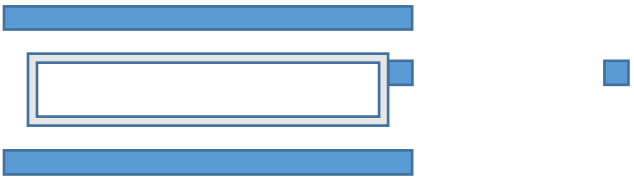
In the event of soft soil, you could either dig your pit with 45° inclined walls or use locally-made earth bricks to build walls inside your pit (see the photo below).

Top view:

2. Installing the longitudinal load rafters

Install rafters over the length of your toilet pit, on both sides of your pit in order to support the weight of your toilets superstructure and its displacement accordingly: **2 pieces of 2m each.**

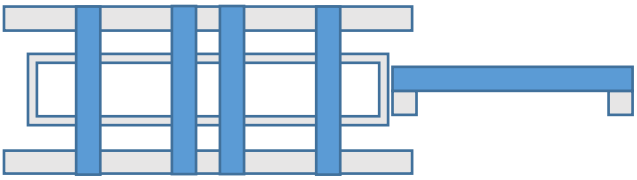
Top view: Side view:



3. Installing the squatting slabs load rafters

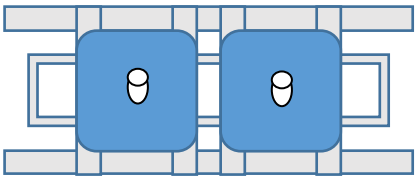
Install rafters over the width of your toilet pit in order to support the weight of your squatting slabs**: 4 pieces of 0.88m each**.

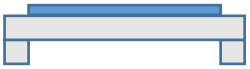
Top view: Side view:



4. Installing the squatting slabs onto the squatting slabs load rafters

Top view: Side view:



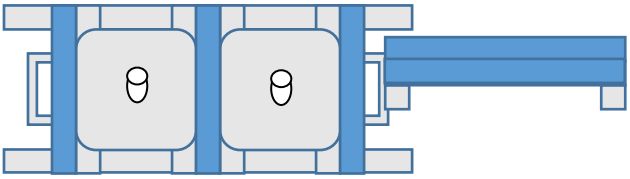


5. Installing the squatting slabs separator rafters

Install separator rafters over the width of your toilet pit in order to make a clear separation between your 2 squatting slabs: **3 pieces of 0.88m each**.

Separator rafters must be doubled on the height to maintain the squatting slabs positions and should be fixed together.

Top view: Side view:

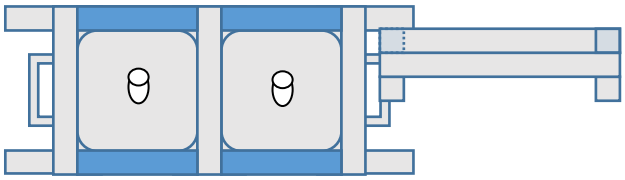


6. Installing rafters to wedge the squatting slabs

These rafters must be installed between the separator rafters in order to wedge and block the squatting slabs: **4 pieces of 0.80m each**.

Top view:

Side view:

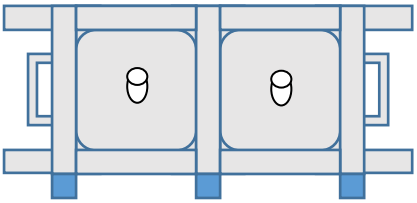


7. Installing toilet superstructure front poles

Install the front poles against separator rafters on the entrance side of the toilets. They can be fixed to both the longitudinal load rafters and the separator rafters: **3 pieces of 2m each**.

Top side:

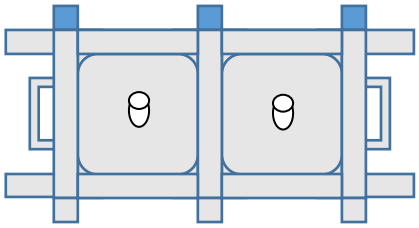
Side view:



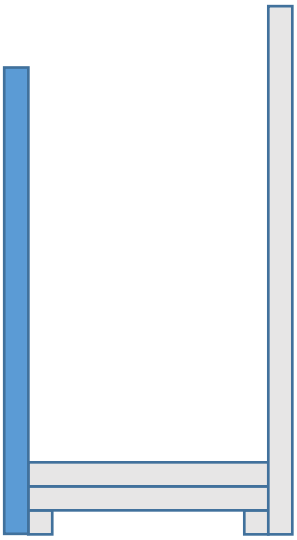
8. Installing toilet superstructure back poles

Install the back poles against separator rafters on the back side of the toilets. They can be fixed to both the longitudinal load rafters and the separator rafters: **3 pieces of 1.85m each.**

Top view:



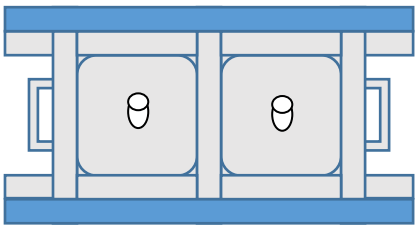
Side view:



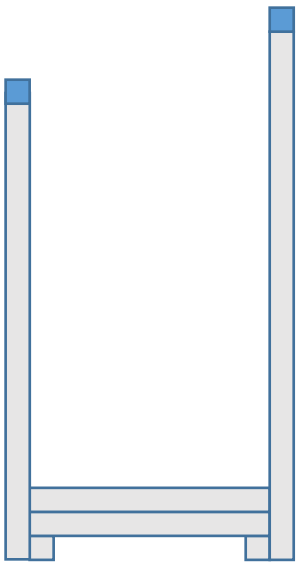
9. Installing toilet superstructure top poles / purlins

Install a top pole / purlin onto the front poles and fix it. Install a top pole / purlin onto the back poles and fix it. The 2 newly installed purlins are parallel to the longitudinal load rafters: **2 pieces of 2m each**.

Top view:



Side view:

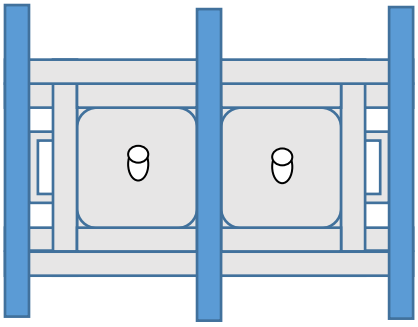


10. Installing roof load rafters

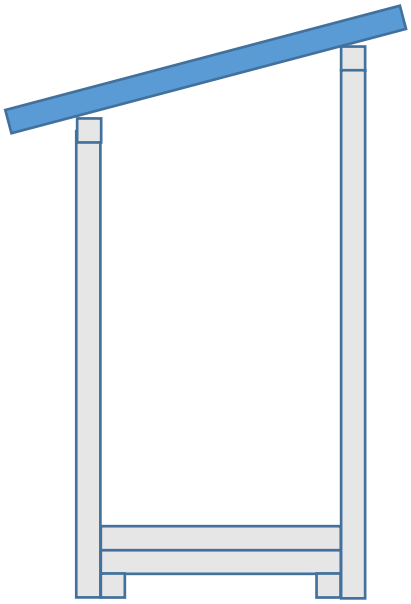
Install the roof load rafters onto the purlins. It is very important the roof load rafters to overhang on both sides with a minimum of 20cm. As such, it would avoid rainwater to enter and/or flow into the toilets: **3 pieces of 1.20m each**.

If rainfall is high in your area, you could install a simple gutter made with an 80mm PVC pipe cut over its length. It could be fixed onto the roof load rafters. Moreover, you could also dig a small drainage around your toilet facility to evacuate the rainwater to a nearby ditch.

Top view:



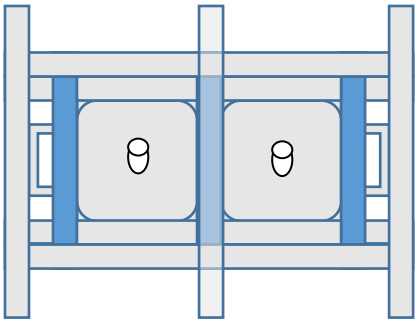
Side view:



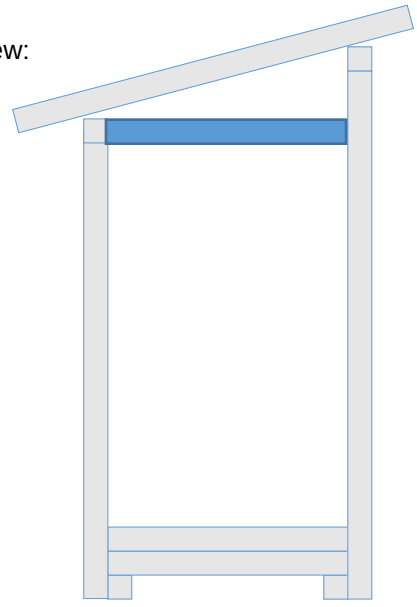
11. Installing down-flat side reinforcements

Install down-flat side reinforcements between the front and the back poles to reinforce the overall toilet superstructure. Moreover, they will be useful to fix your plastic sheeting or your iron / steel sheets as well as your mosquito nets: **3 pieces of 0.88m each**.

Top view:



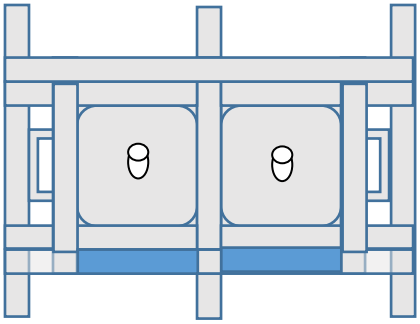
Side view:



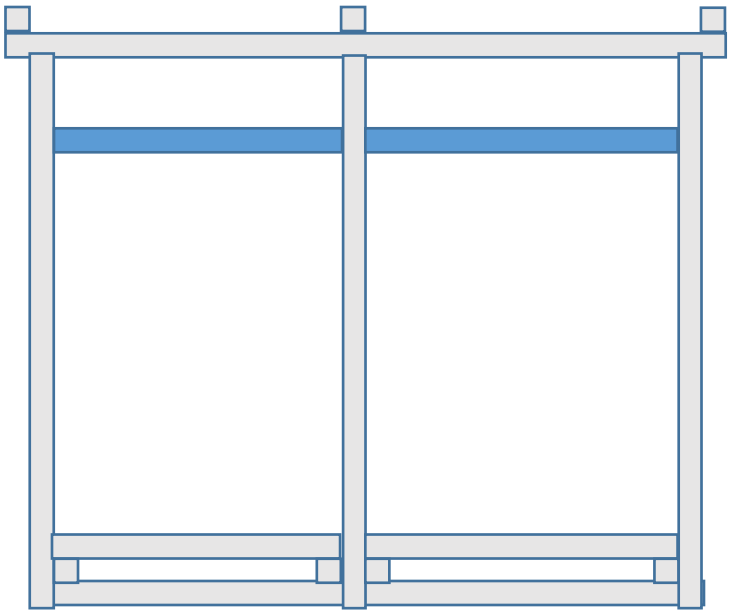
12. Installing down-flat front reinforcements

Install down-flat front reinforcements onto the toilet superstructure front poles. They will be useful to fix your plastic sheeting or your iron / steel sheets as well as your mosquito nets. Finally, you will need these reinforcements to install and fix your toilet doors: **2 pieces of 0.80m each**.

Top view:



Front view:

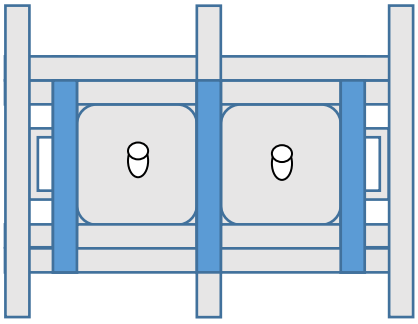


13. Installing diagonal reinforcements on the sides

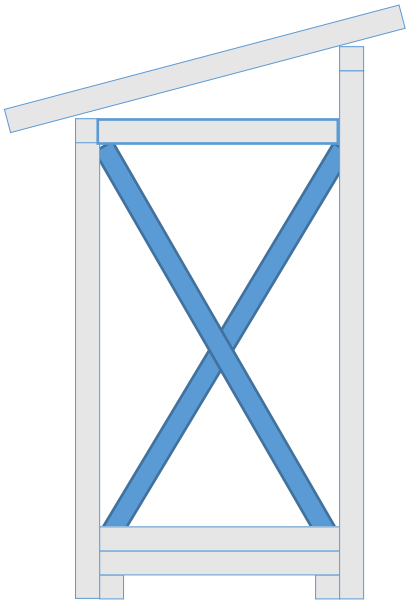
Install diagonal reinforcements between the front and the back poles of the 3 sides of your toilet superstructure. They lay on the separator rafters (lower part) and the down-flat side reinforcements (upper part): **3 pieces of 2m each**.

It is recommended to invert the diagonal laying poles used to better distribute the strengths – see side view drawing below.

Top view:



Side view:



14. Installing the plastic sheeting

Plastic sheeting may be replaced by iron / steel sheets for greater results. However, if you do not have iron / steel sheets, then plastic sheeting will be good enough.

Install the plastic sheeting all around the wooden frame of your toilets. Nail the plastic sheeting onto the separator rafters (bottom), on the front and back poles, and on the down-flat side reinforcements.

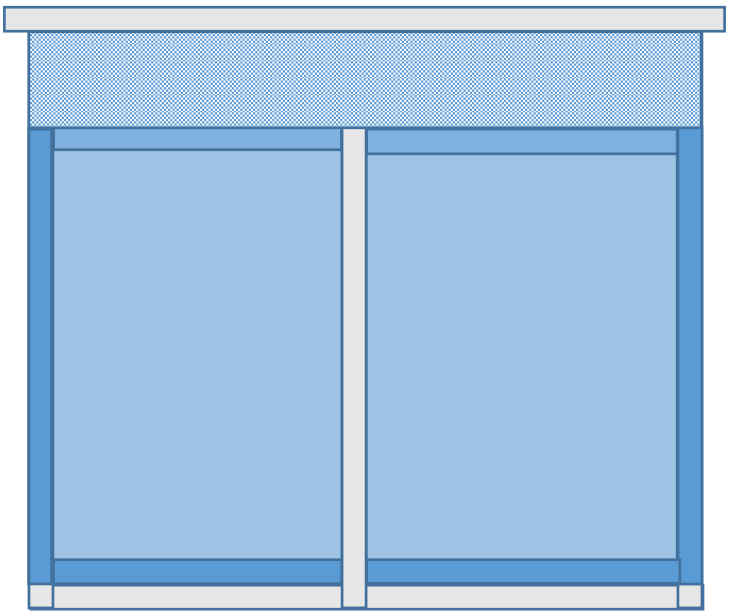
Another plastic sheeting should be used to make your toilet roof; it must be nailed onto the roof load rafters.

Use mosquito nets on the front side of your toilets to ensure ventilation of your facility while allowing sunlight to come in and while protecting your facility against flies, mosquitos, and other insects. You should also use mosquito nets on the top sides of your facility for the same purpose.

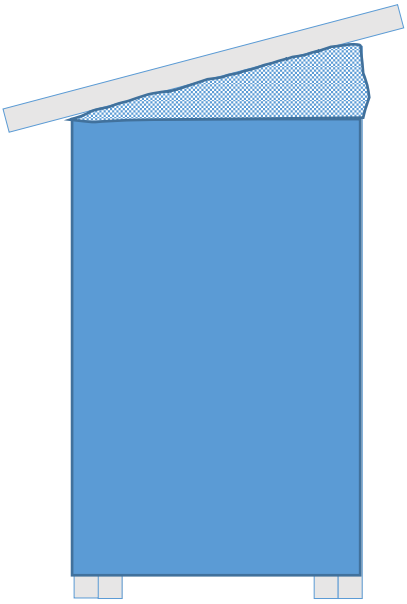
If possible, install lighting system in order to light up the front doors of your toilets. The lighting system may be installed on a pole, outside your toilet facility fence (see point 15 for installing your fence) with the light going above your fence. As such, you would ensure some lighting at night time.

Cut and install doors at the front side of your toilets. Each door must be equipped on its base with a rolled and nailed MM rafter to ensure adequate ballast of the door. Furthermore, your door-frame dimensions should be 10cm longer on each side to cover the front poles of your toilets and thus increase users' privacy. Your door can be nailed from the top purlin until mid of 1 front pole.

Front view:



Side view:



15. Installing fences around your toilet facility

Drive 3m poles into 0.5m ground to guarantee a minimum of 2m high plastic sheeting fences (2.5m high would be even better).

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Examples of emergency toilets

Cholera Treatment Center toilets / showers

Iron sheet toilets - PAKISTAN 2005

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