**Terms of Reference for HH Latrines construction**

**Purpose:**

RI hereby invites suitable qualified and experienced service providers to submit proposals for the construction of Emergency HH latrines in Zam Zam IDPs camp.

**Scope of works:**

Supply material and labour for the construction of Emergency HH latrines in Zam Zam IDPs camp as per the below technical specifications.

* Mobilize the latrine construction materials to site
* Concrete slab fabrication with appropriate curing
* Conduct latrines digging, lining(if in the contract) and superstructure
* Print the logo of RI & USAID per each latrine.

**SPECIFICATIONS FOR TOILET CONSTRUCTION IN IDP SETTINGS**

**Introduction**

These design guidelines specifically define the quality of materials and workmanship to be used when constructing toilets in IDP camp.

**SITE SELECTION**

A basic requirement is that the site selected for the toilet facility is free from the risk of high winds, flooding, subsidence, or erosion.

**Pit Design:**

1. Depth 3 meters(As per Ground water level and site engineer instruction)
2. Width/Diameter 80cm

**PREVENTION OF SURFACE OR GROUND WATER**

**CONTAMINATION**

* HHs and contractors must ensure that all excreta containment systems including any pits, tanks, lagoons, sewerage or soak away do not contaminate surface water or shallow groundwater sources.
* All excreta management systems must be located at least 30 meters away from groundwater sources. The bottom of any pit or soak-away must be at least 1.5m above the highest average groundwater table level.

**Pit Slab specifications:**

Concrete slab for pit cover should be made with dimensions 120cm x120cm from cement, Iron bar, Sand, Gravel, with a mix ration of 1:2:3(1bag cement, 2PKT Sand & 4PKT Gravel for concrete).

The pit should be covered by plastic sheeting size 1.5meterx1.5meters before putting the concrete slab so as to avoid water entering.

**Pit cover:**

Small slab size 20x30cm should be fabricated for pit hall cover.

**GUIDELINES FOR TOILET SLAB STRENGTH**

* The toilet slab and supporting beams must be sufficiently strong to support the weight of users and should not flex of give the user reason to doubt its strength. Support beams should span at least 50cm into each of the pit walls.
* Wooden, concrete or plastic slabs should be tested with the weight of 4 persons before use. Concrete slabs should be reinforced regardless of their type. Wooden planks, trunks and beams should be free from insect attack of any kind with no other defects which would affect its strength. Wooden structures in contact with the ground should be treated with used engine oil or diesel to deter termites.

**GUIDELINES FOR TOILET SLAB ANCHORAGE**

* Latrine slabs should be firmly anchored in place. If plastic latrine slabs are used they should be firmly attached to the support structure either through the use of sufficiently long nails, bolts with washers, metal stakes, or heavy gauge wire.

**GUIDELINES FOR SANITARY SEALING**

* In all toilet installations there should be no visible gaps between the squat plate and the pit walls either through the use of at least 30cm of tamped clay soil or 30cm of concrete sanitary seal.

**GUIDELINES FOR VECTOR CONTROL MEASURES**

* If the toilet is not of the VIP design, tightly fitting closable lids should be used.

**GUIDELINES FOR RAIN AND STORMWATER PROTECTION**

* The ground directly around the outside of the toilet facilities should be backfilled and compacted to slope outwards and prevent surface water entering or eroding the toilet facilities.

**MATERIAL SPECIFICATIONS OF COMMON CONSTRUCTION MATERIALS**

* Gravel used for constructing concrete toilet slabs must be clean and free from mud, dust and plant material. It must be ensured that only crushed aggregates (not river gravel) between 6mm and 10mm are be used to prevent inter granular crack propagation across the thin toilet slab and to ensure an adequate covering under bars.
* Sand used for latrine slabs should be coarse (no fines), clean and free from mud, dust and plant material.
* Water should be non-saline and free from organic matter.
* Cement must be fresh (manufactured in the last three months) dry, and should be stored in a safe, dry, place at least 15cm off the ground. Toilet slabs should be cast with a 1:2:3 concrete mixture. Care should be taken to ensure that the mixture is not over watered.

Cast slabs should be immediately covered with straw,

cement bags, sacking or leaves to keep the concrete moist and cool. The concrete should be cured with frequent watering at least twice daily for at least 10 days before use.

* Reinforcement bars should be free from rust and of the correct type and size for concrete construction work (typically a characteristic yield stress of at least 210 N/mm²). Steel reinforcement should be placed on the lower side of the slab (the part in tension) with at least 12mm concrete covering under every bar. Reinforcement should be laid in both directions. Where the slab is rectangular, the bars parallel to the smaller span should be below the bars reinforcing the greater span. Domed Mozambican slabs must be reinforced with the correct size chicken wire covered with wire mesh and a mixture of 1 part cement to two parts sand.

**Logo and visibility**

After fully completed the construction work latrines should be numbered/marked 1upto nth.

Logo for donors and RI should be printed in visible place in all the latrines.

**HANDWASHING STATIONS DESIGN CONSIDERATIONS**

* Contractors should supply for one functional Jerrican tippy tap hand washing station per HH latrine. Handwashing stations should be conveniently located within 10m of each HH toilet exit and their use should be actively promoted. The water dispensing device and soap must be located within easy reach of all users, especially children. Liquid soap, or bars attached to string, may be used if there is soap theft. If no soap substitutes like ash should be promoted.
* Hand-washing water storage containers should be sized to hold at least half a day of hand-washing water. To conserve water and avoid wastage, appropriate measures should be taken for the hand-washing taps. Calculation of the total volume of hand-washing water

required should be based on 0.5 to 1.0 litre of water per person per day. Hand washing reservoirs must be covered to prevent contamination or vector breeding.

**ENVIRONMENTAL CONSIDERATIONS FOR SOURCING WOOD**

* Ensure that all supplies of wood for household latrine slabs, latrine superstructures, privacy screens, and fencing has been procured from sustainable sources outside of the IDP camp environment.

**Fencing for latrines**

Fencing should be made from bamboo sheet mats and palm leaves sheet (local materials) with the following dimensions:

1. Length 2m x150cmx50cm
2. Height 200cm
3. Width 150cm x 120cm x 80cm