

Accessibility in Emergency

Technical sheets

WASH infrastructure

Pakistan

Introduction

These technical sheets are meant to complement Handicap International's publication "Accessibility for All in an Emergency Context". They provide additional technical specifications for various temporary and permanent WASH infrastructures: hand pumps, water tanks, latrines, bathing areas, washing stands.

Accessibility benefits many people: persons with disabilities, older persons, small children, pregnant women, and ill persons.

For further information or technical assistance, contact Handicap International at info@hi-pakistan.org or opcoord@hi-pakistan.org.

Contents and images contained in these technical sheets have been revised in October 2010 and come from the following sources:

- *Various Handicap International program experiences (including Pakistan) and guidelines*
- *Jones H., and Reed R.A. (2005) Water Supply and Sanitation for Disabled and Other Vulnerable Groups. WEDC, Loughborough University, UK. <http://wedc.lboro.ac.uk/wspd>*
- *Werner, David. (1987) Disabled Village Children. Hesperian Foundation*
- *CBM (2008) Promoting Access to the Built Environment - Guidelines*

The images in these technical sheets depict both emergency and transitional structures (latrines, bathing areas); however the features (handrails, paint, steps, door width, etc) can be used in both emergency and transitional structures.

- Revised October 2010

Pathways and General Access

Pathways to all facilities should be wide, smooth and free of obstacles:

- Width of pathways should be at least 3' (90cm). In areas of high population movement/concentration, pathways should be at least 6' (1.80m) wide to facilitate movement in both directions.
- Pathways should be smooth and level: use sand, crushed (not large) gravel, concrete
- Remove all obstacles (rocks, bricks, etc) from pathways

Open hazards:

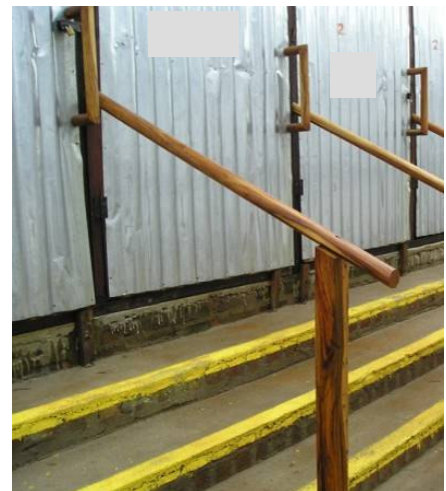
- Drainage systems and other open hazards (holes, pools of standing water, etc) should be covered or blocked off

Latrines

All emergency and transitional latrines should be constructed using Universal Design, to ensure that the majority of the population can use them. In addition, 10% of all latrines (i.e. 1 latrine per block of emergency latrines) should incorporate additional features to make them accessible for all. If there are areas with high concentration of people with reduced mobility, place accessible bathing areas closest to them. For detailed technical specifications of permanent latrines, contact Handicap International.

All emergency/temporary and transitional latrines

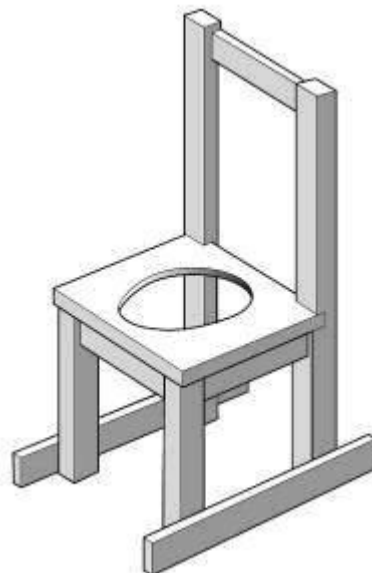
- Minimum size: 4'x4' (1.2m x 1.2m)
- Install handrails or other supports to hold onto:
 - Handrails on either side of the squatting pad: either diagonal (40cm length, with mid-point at 50-70cm), or square (height 50-70cm)
 - Rope hanging from ceiling
- Door width: 90 cm (not including frame)
- Door should open outwards, with a large door handle
- Doors and frames should be a different color to make it easy for people with visual impairment to know if the door is open or closed
- Locking mechanism should be large and easy to manipulate (sliding or revolving metal or wooden bolt, do not use chains as they are hard to grip)
- If steps are required, steps should be maximum 16cm in height and at least 26cm in depth. Edges of steps should be painted with yellow paint to provide contrast for visually-impaired persons. Handrails should be fixed (GI pipe with closed end or wood) at a height of 90cm on either side of the steps, paint them a bright color (i.e. yellow or blue). Handrail diameter should be 1.5-2.5" (4-6cm).



Emergency and transitional accessible latrines

(10% of total, minimum 1 per block)

- Minimum size: 6'x6' (1.8m x 1.8m)
- Door width: 90 cm (not including frame)
- Door should open outwards, with a large lever-type door handle (outside) and a rope (inside) to help closing from inside
- Locking mechanism should be large and easy to manipulate (sliding or revolving metal or wooden bolt, do not use chains as they are hard to grip)
- It should have a non-slip/rough floor (PCC slab)
- Toilet should be placed to one side of the space, to allow movement inside the latrine
- Construct a toilet seat with a seat height of 1.5' (50cm). A backrest is ideal. Toilet seats can be made from wood, cement, metal. See examples below.
- Construct a handrail from GI pipe or wood beside the toilet, with a height of 3' (90cm)
- Construct the latrine level with the surrounding ground, or put an appropriate ramp (90cm or 3' wide) at entrance, so tricycle/wheel chair can wheel onto it if necessary. The ramp should have a minimum gradient of 1:10 (10%); if possible try to achieve the ideal gradient of 1:20 (5%). Install handrails on either side of the ramp (GI pipe with closed end, or wood) at 3' (90 cm) heights. Handrail diameter should be 1.5-2.5" (4-6cm). Ramp can be made from concrete, wood, dirt or fine/crushed gravel.



Bathing Areas

If bathing areas are individual, all areas should be constructed using Universal Design, to ensure that the majority of the population can use them. In addition, 10% of all bathing areas (i.e. 1 per block) should incorporate additional features to make them accessible for all. If there are areas with high concentration of people with reduced mobility, place accessible bathing areas closest to them.

Individual Bathing Areas

- Minimum size 4'x4' (1.2m x 1.2m)
- Use PCC slab (avoid gravel, bricks or other uneven surfaces)
- Door should open outwards, with a large lever-type door handle (outside) and a rope (inside) to help closing from inside
- Locking mechanism should be large and easy to manipulate (sliding or revolving metal or wooden bolt, do not use chains as they are hard to grip)
- Good drainage system to avoid standing water (which makes the surface slippery)
- Install a handrail (GI pipe with closed end, or wood) along at least 1 wall, at a height of at 3' (90 cm). Handrail diameter should be 1.5-2.5" (4-6cm).



Emergency accessible bathing area (10%, or 1 per block)

- Minimum size: 6'x6' (1.8m x 1.8m)
- Door width: 90 cm (not including frame)
- Door should open outwards, with a large lever-type door handle (outside) and a rope (inside) to help closing from inside

- Locking mechanism should be large and easy to manipulate (sliding or revolving metal or wooden bolt, do not use chains as they are hard to grip)
- Use PCC slab (avoid gravel, bricks or other uneven surfaces)
- Good drainage system to avoid standing water (which makes the surface slippery)
- Install a bathing seat with a height of 45 to 60 cm along one wall
- Install a handrail (GI pipe with closed end, or wood) along at least 1 wall, at a height of at 3' (90 cm). Handrail diameter should be 1.5-2.5" (4-6cm).



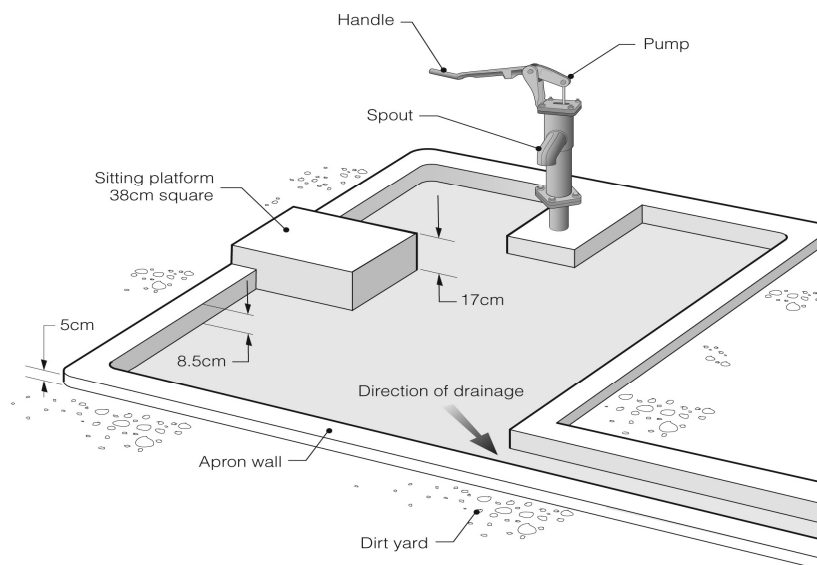
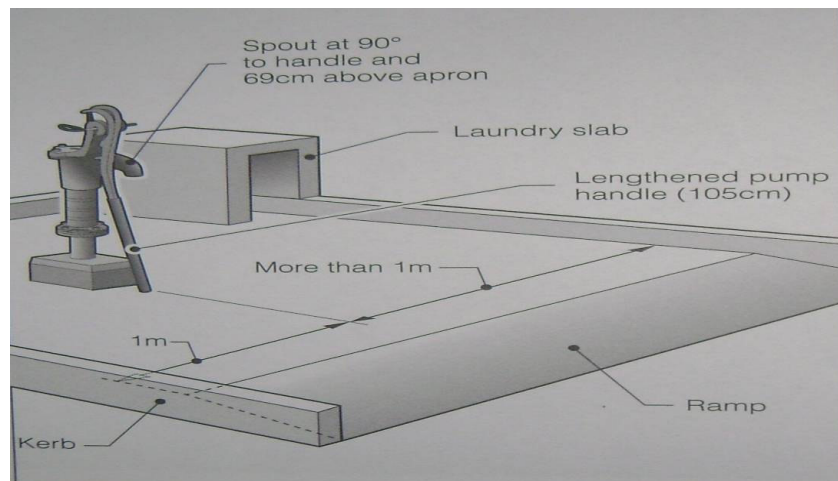
Water Tanks and Hand-washing Stations

- If a tap is installed on a water tank, the tap height should be 3 feet (90cm)
- Taps should be easy to use (i.e. lever-style, large handles)
- Use PCC slab for the platform (avoid gravel, bricks or other uneven surfaces)
- Ensure a good drainage system to avoid slippery surfaces
- Platform should be level with surrounding ground. If not possible, construct a ramp at least 3' (90cm) wide. The ramp should have a minimum gradient of 1:10 (10%); if possible try to achieve the ideal gradient of 1:20 (5%). Ramp can be made from concrete, wood, dirt or fine/crushed gravel.
- Wide platform: at 3' (90cm) between the edge of platform and the taps
- Make a safety edge around the drainage area
- Build a seat in front of one tap, at a height of 1.5' (50cm) for sitting while collecting water (wood, concrete or metal can be used). Install a small handrail beside the seat at a height of 3' (90cm).
- Build one tap at a height of 3' (90cm) for wheelchair users and people who are not able to sit or bend to reach lower taps



Hand Pumps

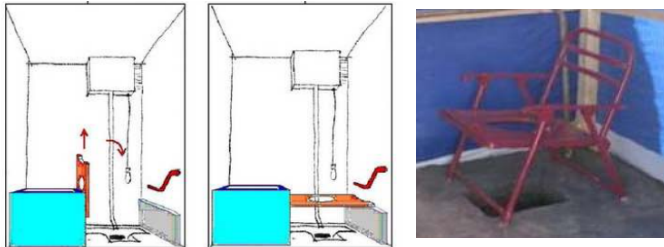
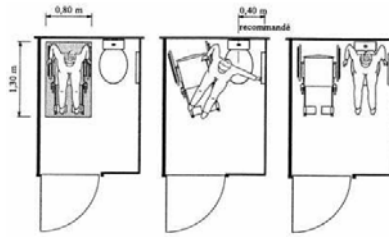
- Be sure the water source is safe and can be reached by people using mobility devices
- Construct a non-slip platform and good drainage system without standing water in and around the area
- Build a small concrete platform inset into the apron so that someone can sit on the platform and pump water
- Construct the apron so it is level with the surrounding ground, or has a ramp entrance, so a wheelchair can wheel onto it if necessary. The ramp should have a minimum gradient of 1:10 (10%); if possible try to achieve the ideal gradient of 1:20 (5%). Ramp can be made from concrete, wood, dirt or fine/crushed gravel.
- Place the spout at 90 degrees to the handle so that a person can pump and hold their water container easily



Appendix I Comments on document

For wheel-chair accessible latrines:

- Increase de latrine size to 6'x6'.
 - o The toilet (toilet chair or other option) should be placed to one side of the space to allow movement inside
- Increase door width to at least 2'11" (not including the frame) and make it open outward to have more space inside (a rope should be put inside to help closing from inside).
- Plan a removable toilet chair or bench. Plastic or foam recovered by waterproof material. Better if back support.



- Add an handrail beside the toilet (3' high)
- Add an access ramp: preferred slope 1:20 (5%). Minimum width: 0,90cm.
- Plan slip-resistant ramp surface with adequate drainage at the bottom

For all latrines (to make them accessible for crutches users):

- Increase door width to at least 3'3" (1m).
- Steps should be 15 cm to 18 cm high and not less than 28 cm deep. (OK on your design)
- Add handrail on both sides of the steps, (3' high-diameter of 40 mm to 50 mm)
- Add at least 1 handrail beside the toilet (3' high).
- Plan a slip-resistant ramp surface, as well as adequate drainage
- Use contrasting colors to signal the steps to persons with visual impairments.

