

Problem Statement/Need for the Product

Current sanitation products (including latrine slabs and super-structures) used in emergencies do not include components for enabling access by elderly or persons with disabilities (including children). UNICEF is seeking solutions to improve access to latrines in emergency contexts such as refugee camps or settlements. The solution must be able to be easily integrated with the existing self-supporting latrine slab used by UNICEF in emergencies. The details and specifications of this slab can be found in the UNICEF Supply Division's catalogue: <https://supply.unicef.org/>.

Programmatic Relevance for UNICEF

UNICEF's strategic priorities include a renewed focus on equity, and ensuring that both regular UNICEF programming and emergency response address the needs of children with disabilities. Persons with disabilities are considered more vulnerable and at risk of illness, as well economic and social exclusion—challenges which are exacerbated in emergency contexts.

Current products or response used by UNICEF:

For emergency response, UNICEF currently procures a self-supporting plastic direct-drop squatting plate with foot rests, with an attached, preferably hinged, drophole cover. The squatting plate supports a weight of minimum 150kgs at the centre, with a minimal support structure extending up to a maximum of 10 cm from the edge of the slab. Products should be durable and designed with tropical temperatures and direct sunshine in mind. Holes are provided on the extreme four corners of the squatting plate through which the four provided anchor/fixation pegs can be inserted with water-tight fit. These metal pegs of dimensions 8 mm x 275 mm are included in supply of the slab. An arrangement is provided on the underside of the squatting plate to enable fastening of a pan/bowl and water-seal trap if required. This fastening can be by bolting or other secure principle. Dimensions are typically as follows: Length 1200 mm, width 800 mm, thickness either 40 or 55 mm.

Volume & Potential Impact

Depending on the number and magnitude of emergencies in a given year, procurement of these products fluctuate. In 2015, UNICEF procured approximately 62,000 of the emergency slabs. Potential procurement of disability components could comprise around to 10% of all orders.

However, this does not account for other aid organizations or governments which might procure latrine slabs for emergencies and see a need for the accessibility component.

Use of product in UNICEF context

Emergency Response/Displacement Camps

Latrine construction in emergencies usually takes place rapidly, with one row or block of latrines (consisting of 4-5 dropholes or stances) being constructed over a trench in one day. Construction and installation is often done by unskilled labour with minimal instructions and locally available tools. Handicap International guidelines (see Additional References below) recommend that 10% of latrines in short term camps or 20% in long term camps be accessible—this would amount to approximately 1 out of every 10 stances or 1 out of every 5 stances, respectively.

- **User description:** Users include both adults and children of all ages. **Individuals may be elderly or pregnant with mobility restriction, or persons (including children) with physical disabilities with varying levels of mobility restrictions.** Latrines are typically segregated by gender. In some cases, users may be accompanied in the latrine by someone to assist with their movement inside the latrine.
- **Use environment:** Refugee camps or settlements with limited to no access to grid electricity, common hardware or machine tools. In addition, many camp settings have limited access to water, presenting challenges for both cleaning of facilities and maintaining proper hygiene.
- **Geographic location:** Global, but can include harsh environmental conditions, including extreme heat or cold and limited access to water

Use Case Requirements

Mandatory Requirements (Please note, Mandatory must be met in order to be considered):

- Must be able to be integrated with UNICEF's existing emergency slab specifications (80 x 120cm).
- Must ensure mass production capabilities, either directly or through a partner/sub-contractor.

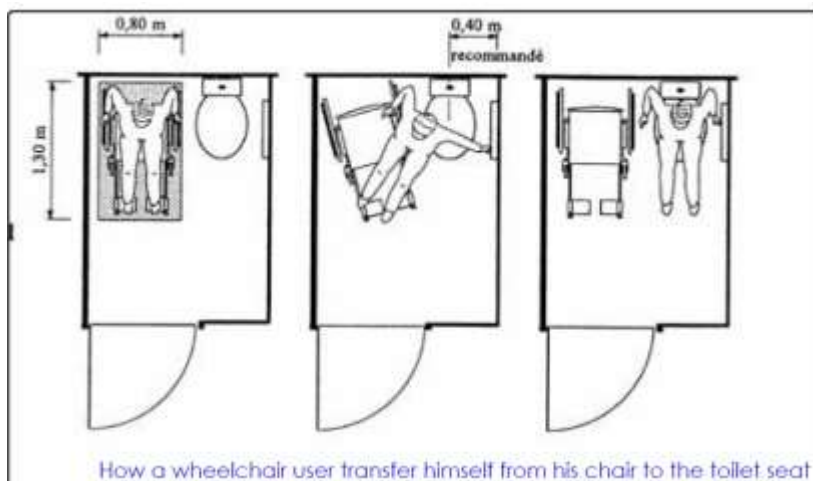
Attribute	Minimum Performance	Ideal Performance
Operational/Functional Requirements		
<i>Key function(s)</i>	Provide support and assistance for squatting position for Person/Children with disabilities (Supported squat)	Provide support and assistance for squatting position for Person/Children with disabilities with handrails or other mean, a seat, and back support, to avoid squatting.
User Requirements		
<i>Mobility & Access</i>	<ul style="list-style-type: none"> - Accessible for squatting position for Person/Children with disabilities who have the ability to enter the latrine on their own. - Accessible for Person/Children with disabilities, able to lift their own body weight onto the seat or squat above the hole without assistance from another person. - Should be easy for Person/Children with disabilities, to maneuver in between any railings, bars or supports. 	<ul style="list-style-type: none"> - Accessible for Person/Children with disabilities, with a range of mobility restrictions, including those in wheelchairs, or who require an additional person to enter the latrine with them. - Consideration for Person/Children with disabilities, transferring from a wheelchair, including access to the seat from the side (see diagram 1 below for more information). - Should be easy for Person/Children with disabilities, plus an additional person/caregiver to maneuvers in between railings, bars or support.

<i>Age & Size</i>	<ul style="list-style-type: none"> - Equipment dimensions are appropriately sized and designated for either an adult or a child (ages 5+). 	<ul style="list-style-type: none"> - Equipment dimensions are <u>adjustable</u> for both adults and children (e.g. adjustable seat levels, sloping handrails, etc.)
Performance Requirements		
<i>Weight</i>	<ul style="list-style-type: none"> - Does not significantly reduce the maximum load-bearing weight as required for the current squat plate (150 kg). Reduces load-bearing by maximum of 15kg. 	<ul style="list-style-type: none"> - Does not significantly reduce the maximum load-bearing weight as required for the current squat plate (150 kg). Reduces load-bearing by less than 15kg.
<i>Stability</i>	<ul style="list-style-type: none"> - During use, handrails or other supports should be securely fastened to the slab and minimize lateral movement when disabled user is pulling up or pushing down on handrails or other support. 	<ul style="list-style-type: none"> - During use, handrails or other support should be securely fastened to the slab and minimal to no lateral movement when user is pulling up or pushing down on handrails. - During use, Potty/Seat securely fastened to slab, or minimize lateral movement.
<i>Durability</i>	<ul style="list-style-type: none"> - Can withstand extreme weather conditions including direct sunlight. - Lifespan of 1 year 	<ul style="list-style-type: none"> - Can withstand extreme weather conditions including direct sunlight. - Re-use: Able to be deconstructed and reconstructed multiple times. - Lifespan of 3 years
<i>Cleaning</i>	<ul style="list-style-type: none"> - Easy to clean with minimal water. - No gaps or cracks where dirt and bacteria may get trapped. - Splash guards where necessary. 	<ul style="list-style-type: none"> - Easy to clean with minimal water. - No gaps or cracks where dirt and bacteria may get trapped. - Splash guards where necessary.
Design Requirements		
<i>Compatibility</i>	<ul style="list-style-type: none"> - Must be easily integrated with UNICEF's existing emergency slab specifications (80 x 120cm). 	<ul style="list-style-type: none"> - Can be fitted on a number of squat plate designs and sizes. **See Note 2 below for additional information - Does not require significant modifications to the current slab in the form of drilling additional holes for bolts, etc.

<i>Installation Requirements</i>	<ul style="list-style-type: none"> - All required tools and any additional hardware are included with the product. - Minimal additional instructions required. 	<ul style="list-style-type: none"> - Additional hardware included with the product, replacement hardware can be found locally. - Can be assembled using locally available tools. - Minimal to no additional instructions required. If required include pictures or be multi-lingual.
<i>Equipment dimensions</i>	<ul style="list-style-type: none"> - Drophole opening: should provide adequate space for waste to pass through to the pit and minimize the need for cleaning (with caution that a small child, less than 6 months, not be able to pass through the hole). - Additional components dimensions should not exceed the dimensions for the squat plate (80 x 120) to accommodate typical superstructures to constructed around the slab. 	<ul style="list-style-type: none"> - Drophole/seat opening: should provide adequate space for waste to pass through to the pit and minimize the need for cleaning (with caution that a small child, less than 6 months, not be able to pass through the hole). - Additional components dimensions should not exceed the dimensions for the squat plate (80 x 120) to accommodate typical superstructures to constructed around the slab.
<i>Materials Used</i>	<ul style="list-style-type: none"> - All materials should be easily cleanable, without pores etc. - No exposed sharp edges or protruding hardware. 	<ul style="list-style-type: none"> - All materials should be easily cleanable, without pores etc. - No exposed sharp edges or protruding hardware.
<i>Security</i>	<ul style="list-style-type: none"> - Reduce ability for component to be easily removed from the latrine. 	<ul style="list-style-type: none"> - Permanently fixed/theft proof
Commercialization Requirements		
<i>Safety Requirements</i>	<ul style="list-style-type: none"> - According to standards 	<ul style="list-style-type: none"> - According to standards
<i>Supply, support, or maintenance</i>	<ul style="list-style-type: none"> - Shipping size: Compatible with standard pallet sizes. 	<ul style="list-style-type: none"> - Shipping size: Compatible with standard pallet sizes and high packing density (through nesting or other means).
<i>Production Capacity</i>	<ul style="list-style-type: none"> - Mass production minimum 500 per month. 	<ul style="list-style-type: none"> - Mass production minimum 500 per month.

Additional Information:

Diagram 1: How a wheelchair user might transfer to a toilet seat



Note 2: Additional Specifications to consider:

While UNICEF mostly procures squat plates with the 80 x 120 dimensions, some Country Offices and government partners may prefer a smaller slab with dimensions 60 x 90 cm (with thickness 65mm or less).

In addition there are a variety of suppliers and styles of squat plates on the market, and product developers are encouraged to research and test their designs with multiple squat plates if pursuing a universal design.

Additional References and Suggested Reading

More information on Accessible Water and Sanitation facilities in Emergencies can be found through the following links:

Handicap International Guideline for Accessibility in Refugee Camps:

<https://data.unhcr.org/syrianrefugees/download.php?id=1557>

UNICEF’s State of the World’s Children Report, 2013: Children living with Disabilities, Water and Sanitation. http://www.unicef.org/disabilities/files/Final_Flyer_WASH.pdf

Oxfam Guidance for Accessible Facilities for Physically Vulnerable Persons in Emergencies:

http://www.unicef.org/cholera/Chapter_9_community/17_OXFAM_Excreta_Disposal_for_Physically_Vulnerable_People_in_Emergencies_2.pdf

WaterAid Compendium of Accessible WASH Technologies

http://www.ewb-usa.org/files/Compendium_of_accessible_WASH_technologies.pdf.