

ANNEX A: Performance Specifications

Project: Improved Emergency Latrine Slab

Objective

UNHCR is inviting requests for proposals for an improved emergency latrine slab. An “improved emergency latrine slab” is defined as a light-weight latrine slab that ensures the safe separation of human faeces from the environment by including a self-closing mechanism for the drop hole. “Self-closing” is defined as: “without the need for the user to take action to close the cover and without being powered by external electrical source/inputs”. The inclusion of a fly and odour-reducing self-closing mechanism is an eliminatory requirement in the bidder selection. Traditional pour-flush systems will not be considered for this request.

Additional parameters and requirements are provided in the below table. Bidding companies are required to provide narrative information and supporting evidence (such as photos, videos and documentation, where applicable) for each specification/requirement. Information and answers to the specifications are to be provided in the same order as the list below. Sufficient explanation should be provided if a specification/requirement cannot be met by the proposed product. Selected parameters will be evaluated through either in-house measurement or tested at a UNHCR-selected certified laboratory. Potential bidders must submit five (5) slab/self-closing mechanisms samples as part of the proposal submission and, if available, one (1) sample of each disability add-on for visual inspection and laboratory testing and for future reference by UNHCR.

Joint proposals will be considered. Partial proposals will not be accepted.

Notes on proposal preparation:

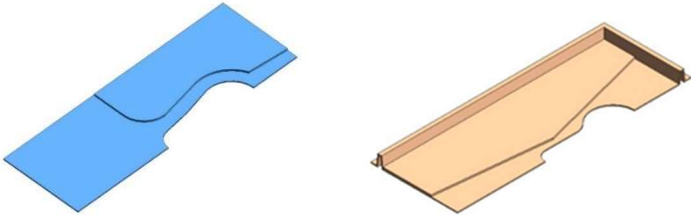
- a) In order for UNHCR to be able to evaluate the current market challenges on these products, it is requested that the bidder provides an explanation whenever a criterion is not met. UNHCR shall nevertheless evaluate when a criterion is not met or when the information is not available. Not meeting a specific criterion will affect the technical scoring of that criterion.
- b) Where required, photos should be clear by ensuring proper light and angles for relevant and requested image details for review by the evaluators. Photos referring to the same specification should be grouped in a Word or Pdf file (max. 4 pictures per A4 page).
- c) Where required, videos may be taken on a smart phone as long as proper light and angles for relevant and requested image details can be seen by the evaluators. For video file submission, bidders should facilitate a link from which UNHCR evaluation panel can download the video (access can be password protected, however, the password needs to be provided to UNHCR in the relevant column in annex B).

Notes on general specifications and detailed requirements:

- **Assembly requirements:** Slab and accessory combinations should include all what is required so that no additional materials/connectors need to be sourced or added prior to assembly and install. Tools required for assembly should be listed and described and no specialised equipment should be required. Assembly of the slab should be as straightforward and simple as possible. Preference will be given to solutions that require no – or the least amount of – tools. Preference will also be given to solutions with no – or the least amount of – connectors and the fewest distinct components. No (or absolute minimal) additional materials should be required for assembly.
- **Mechanical and physical specifications:** Lighter slabs are preferred, with a maximum allowable weight of 20kg for an individual slab and pan. Weight is not evaluated for any add-on accessories.
- **Mobilization time and production capacity:** A shorter mobilization time and a higher production capacity is preferred.
- **Special needs and add-ons (optional)** Systems that have the ability to add on assistive devices for people with special needs, as well as components for upgrading the system functionality, are preferable. This will also foster the reuse of the slab potentially progressing up the sanitation ladder for a longer lifespan.
- **Technical drawings:** Every technical drawing provided in response to the specifications, when required, should be clear and large enough to show the information and numbers on it. Narrative should be provided when further explanation is needed for proper understanding.

Note: "Spec No" column is just for internal use. It does not provide any information to the Bidder.

General Specifications/ Detailed Requirements	Form of information/evidence	ANNEX B section	CRITERIA*	Spec No
MANDATORY REQUIREMENTS				
A slab with a self-closing mechanism that is not powered by external electrical source or battery and that is not a traditional pour-flush solution. A self-closing mechanism is required that reduces odours and flies while allowing urine, faeces and cleaning materials to pass through without blockages. This mechanism may be integrated within the slab or attached separately.	Narrative, photos & drawings	4.1.2	BR	1
Slab includes either a pan or a keyhole shaped drop hole.	Photos & drawings	4.1.3	BR	5
All components are expected to have a minimum service life of 5 years under field conditions and a guaranteed shelf life period of 5 years.	Narrative	4.1.4	MP	20
At least 25 slabs, with or without self-closing mechanism, fit on a SINGLE EUR pallet.	Narrative (dimensions/calculations). Photo optional	4.1.5	BR	8
If the proposed product does not include a fitted pan (i.e. the proposed solution does not involve a pan or the pan is supplied separately), then the keyhole dimensions should be: length 340-410 mm; widest part of keyhole 160-220mm; largest circular area opening $\leq 0.04\text{m}^2$ (equal to circular area of 220 mm diameter).	Technical drawings	4.1.6	MP	18
The slab size is of length x width 1200 x 800 mm with $\pm 1.25\%$ tolerated variance limits.	Technical drawings	4.1.7	MP	16
Weight of slab including self-closing system and fixings (excluding seat/ handrail accessories) is not above 20 kg	Narrative of weights measurements during production register.	4.1.8	MP	17
TECHNICAL REQUIREMENTS				
Slab has holes in the four (4) corners to facilitate attachment to support structure.	Technical drawings	4.1.9	BR	2
Slab includes four fixing pegs/bolts/stakes (minimum 250mm long), corrosion resistant.	Narrative type of materials/priming & photos	4.1.10	BR	3
Slab to incorporate raised footrests suitable for all ages and body sizes to elevate the user's feet from the main slab surface. Find two illustrations as example.	Photos & technical drawings	4.1.11	BR	4

General Specifications/ Detailed Requirements	Form of information/evidence	ANNEX B section	CRITERIA*	Spec No
				
Discharge pipe diameter for pan to be ideally 110mm, within the stablshed limits of +/- 40mm (only applicable to solutions that involve a pan).	Technical drawings	4.1.12	BR	19
Self-closing mechanism is of good quality and ensures precise functionality	Video showing the functioning of the self-closing mechanism. A smartphone video is sufficient; a purely animated video will not be accepted	4.1.13	BR	7
All required tools, if any, for on-site assembly of slab/pan/self-closing system are included (at least one set will be included per pallet) and properly listed and described.	Narrative (list of tools and description). Photos optional	4.1.14	AR	12
If additional materials/equipment/connectors are required to facilitate local assembly of the slab & associated self-closing components (apart from tools), those are included and properly listed and described. (This does not apply to other parts of the latrine construction or installation process).	Narrative (list of items and description) & photos as optional form	4.1.15	AR	13
Show process for on-site assembling of slab and components. Include any technical drawing or instruction required.	Video showing a real person assembling the slab and the components of the self-closing mechanism in real time. Also include instructions, if applicable	4.1.16	AR	14
List total number of distinct parts to be assembled (slab/pan/self-closing mechanism only). Also list separately the number of connectors required to assemble (each counted individually rather than as a set).	Narrative (list items and description) & document (pdf or doc format) with photos or narrative & drawings	4.1.17	AR	15

General Specifications/ Detailed Requirements	Form of information/evidence	ANNEX B section	CRITERIA*	Spec No
A small slab of size 800 ± 10mm x 600 ±8mm with a self-closing mechanism is optionally available.	Technical drawings & photos	4.1.18	MP	16
All plastic components show UV stability and resistance. If available, reports of accelerated one-year UV tests show a positive result.	Narrative or report of one-year accelerated UV test results if available	4.1.19	MP	20
All materials have a working temperature range from -15°C to +70°C and are resistant to cleaning products. Bidder to provide, if available, laboratory reports from the main components' materials from the same sample's batch on the following tests: Temperature of deflection ASTM D648, ISO 75 or equivalent; thermal stability ASTM D3045 and Chemical resistant test ASTM D543. (UNHCR reserves the rights to test the material and product).	Narrative, report from authorised laboratory/-ies, if available	4.1.20	MP	21
All materials and connectors are resistant to moisture mildew and mould.	Narrative or report/proof of the resistance capacity	4.1.21	MP	22
Product is available in a variety of colours to suit various local contexts/cultures. Products with fine bathroom appearance finishes as marble, ceramics or wood will be appreciated. Proposals that include products only offering in a green colour will not be accepted.	List of available colour(s) & list of available finishes	4.1.22	AST	27
The slab and pan surfaces are easy to clean; corners and raised textures where waste can accumulate are minimal.	Narrative (describe surface, roughness, etc.) & photos (close-ups and clear angles of the surface)	4.1.23	AST	30
Handrails/support handles are available. They are directly attachable to or supported by the slab or may form part of a chair or support system which rests on the slab and does not rely on external parts like walls.	Technical drawings & photos	4.1.24	SAO	41
Seat/stool is available. It is directly attachable to the slab and does not rely on external parts like walls.	Technical drawings & photos	4.1.25	SAO	42
Information on air-freight, road and sea-freight options has been provided including number of units per pallet, pallets per container, weight, dimensions and space/volume usage ratio. Include indication of the height of packed EUR pallet when containing 25 slabs, including self-closing mechanism*. (*The latter is for UNHCR to assess space use when stacked and does not relate to the packaging options actually provided by the bidders).	Narrative (dimensions, calculations) & photos or narrative & technical drawings	5.1.2 & 5.1.13	BR	8

General Specifications/ Detailed Requirements	Form of information/evidence	ANNEX B section	CRITERIA*	Spec No
Slabs/pans/seal mechanisms (including fixings) are all packed on the same pallet according to the number of slabs included.	Narrative (numbers and space calculations) & photos (if feasible)	5.1.8	BR	9
Pallets and contents shrink wrapped and/or secured for transportation.	Narrative (materials used and how is wrapped and secured) & photos (if available)	5.1.10	BR	10
Wood packing material meets ISPM 15 Phytosanitary standard.	Documentation	5.1.11	BR	11
The proposed product is expected to be available from more than one geographic area in order to mitigate political and natural risks to supply. (Distinct geographic areas will be considered to be at least 1500km apart from each other to mitigate natural disaster risks and to be in different countries to mitigate political risks).	Narrative (incl. list of geographic areas from where product would be available)	6.1.1	MSC	44
The bidder's supply chain is conducive to local procurement. Examples of how this can be achieved include: Retail shops in developing countries, global licencing agreements, suitability for 3D-printing, creative commons licences, a combination thereof or other arrangements.	Narrative	6.1.2	MSC	45
Each slab should carry a mention of the production batch and bidder's name with a fixed non-removable and permanent marking.	Photo	6.1.3	MSC	48
The bidder states the mobilization time which shall not be more than 10 calendar days from the day a purchase order is issued. It should be given as reference, the weekly production capacity with maximum production (allocated to UNHCR) achievable during the first month after having placed the order	Narrative	7.1	MSC	49
Bidder to be certified under ISO 14001 or can show evidence of the certification process underway.	Documentation	9.1.1	EC	31
A copy of the bidder's environmental policy is provided which demonstrates due consideration of the bidders' operations environmental aspects.	Narrative & copy of environmental policy, if available	9.1.2	EC	32
Bidder to be aware of the carbon footprint of the slab manufacturing process and provide an estimate for kilograms of equivalent CO ₂ per slab and underlying assumptions.	Narrative	9.1.3	EC	33
Information on carbon offset activities of the manufacturer to be provided.	Narrative or documentation	9.1.3	EC	34

General Specifications/ Detailed Requirements	Form of information/evidence	ANNEX B section	CRITERIA*	Spec No
Bidder to be aware of the carbon footprint of raw (input) materials of the slab, including their transport to manufacturing plant and provide narrative accordingly.	Narrative	9.1.3	EC	35
The proposed product contains recycled plastic. Bidder to indicate the percentage of recycled plastic and provide supporting evidence.	Percentage and supporting evidence for indicated percentage	9.1.4	EC	36
The proposed product contains bioplastic. Bidder to indicate the percentage of bioplastic, the type of bioplastic and whether it is from a bio source, or biodegradable or both.	Percentage and supporting evidence for indicated percentage	9.1.4	EC	37
The proposed product contains other ethical and sustainable alternatives to plastic. Bidder to indicate the percentage, the material with any supporting evidence (e.g. a label according to ISO 14024:2018, Nordic Swan Ecolabel, European Ecolabel, a national ecolabel, Max Havelaar, WFTO, etc.)	Narrative, percentage and supporting evidence for indicated percentage, include certificates, if applicable	9.1.4	EC	38
Final product percentage of recyclability, using the final product as a starting point for decomposition (not the input material).	Percentage and supporting evidence for indicated percentage	9.1.5	EC	39
Negative environmental impact of the slab and self-closing mechanism at end of life/at camp closure is minimized. This can be achieved, for example, by a return & disposal system, compostability of the slab, upcycling possibilities, or other proposals that will avoid environmental contamination and ensure as easy process as possible.	Narrative	9.1.6	EC	40
VISUAL INSPECTION & LAB TESTING (Total of 5 slabs and, if available, one sample of each disability add-ons to be sent)				
Slabs, pans, self-closing mechanisms and fixings are stackable. Multiple slabs can be safely stacked on top of each other for ease of transportation, without damaging slabs above/below. MANDATORY	Samples to be sent to UNHCR at address given in cover letter	n/a	BR	6
Keyhole dimensions (only applicable if pan supplied separately or the proposed solution does not involve a pan), maximum length 340-410 mm; widest part of keyhole 160-220mm; largest circular area $\leq 0.04\text{m}^2$, (equal to circular area of 220 mm diameter). MANDATORY IF APPLICABLE	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	18
The pan, integrated or connected to slab, is capable of withstanding 50kg/0.49kN load when applied at the centre of the pan, maintaining stability of connection between slab	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	23

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and pan/strength of pan (only applicable if proposed solution involves a pan) MANDATORY IF APPLICABLE				
Self-closing mechanism, including the slab when mounted on it, keeps functionality after being exposed to -15 degrees Celsius for 12 hours. MANDATORY	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	24
Fatigue test: Self-closing mechanism maintains functionality for a minimum of 10,000 uses. MANDATORY	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	25
The slab size is of length x width 1200 x 800 mm with $\pm 1.25\%$ tolerated variance limits. MANDATORY	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	16
Slab has limited slip potential when evaluated following (wet and dry) pendulum slip test	Samples to be sent to UNHCR at address given in cover letter	n/a	AST	28
Slab at keyhole level shows minimum deflection (before and after being subjected to extreme temperature variations, up to 70°C for 36 hours and returned again to ambient temperature) when subjected to a loading of 150kg/1.47kN at footrests/centre of slab, while slab is supported on 100mm wide strips across each end only — allowing a 1m clear span (i.e. not secured via the four holes on the edges). Calculate the difference between deflection values among the two deflection tests (before and after). MANDATORY	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	24
Discharge pipe diameter for pan to be ideally 110mm, within the stablished limits of ± 40 mm (whether integrated or supplied separately to slab; only applicable if proposed solution involves a pan)	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	19
Weight of slab including self-closing system and fixings (excluding seat/ handrail accessories) is not above 20 kg.	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	17
When the slab is placed horizontally, liquids spilled all over the sides of the squatting area of the slab flow towards the keyhole/pan without ponding or otherwise being restricted.	Samples to be sent to UNHCR at address given in cover letter	n/a	AST	29
Slab (and a pan if supplied separately) can survive a drop from a height of 2 meters onto a concrete floor without damage affecting operation/function.	Samples to be sent to UNHCR at address given in cover letter	n/a	MP	26
Handrails to be held rigidly in position on slab, do not break or deform, do not easily move or topple over, and do not damage the slab when a person (80-90kg) leans on one side of the handrails.	Samples to be sent to UNHCR at address given in cover letter	n/a	SAO	41

General Specifications/ Detailed Requirements	Form of information/evidence	ANNEX B section	CRITERIA*	Spec No
Seat/stool to be held rigidly in position on slab, do not break or deform, do not get loose, easily move or topple over, do not damage the slab and does not affect functionality of the self-closing mechanism, when a person (80-90kg) sits on the stool/seat.	Samples to be sent to UNHCR at address given in cover letter	n/a	SAO	42
Tactile features to help guide visually impaired persons are provided as follows: raised round bumps on the slab that provide a pathway along the centre line leading from the slab edge towards the drop hole. The bumps should be 23-26mm in diameter, raised to a height of 3-7 mm, and 41-61 mm apart from each other. In addition, tactile features should have a colour contrast of at least 30 points difference in the light reflectance value (LRV) between the features and the main slab. The bumps are without sharp angles so as to avoid cleaning issues.	Samples to be sent to UNHCR at address given in cover letter	n/a	SAO	43
Handrails are between 800mm to 1000mm in height.	Samples to be sent to UNHCR at address given in cover letter	n/a	SAO	41
Seat/stool is available in two sizes, one for children and one for adults.	Samples to be sent to UNHCR at address given in cover letter	n/a	SAO	42

- *BR Basic Requirements
 AR Assembly Requirements
 MP Mechanical & physical specifications:
 AST Appearance and surface texture
 EC Environmental criteria
 SAO Special needs add-on
 MSC Manufacturing and supply chain information