



ASSISTIVE PRODUCT SPECIFICATION FOR PROCUREMENT

Handrails and grab bars

Objective:

The objective of this specification is to help organizations in procuring good quality handrails and grab bars that are durable and which assist the individuals to move and stand with more stability.

World Health Organization

1. Product description

The purpose of this section is to provide specific key details relevant to the assistive product so that it is easily identifiable.	
Purpose of 1.1	Name of product as per WHO priority APL and/or commonly used names.
1.1 Name of product	Handrails and grab bars
Purpose of 1.2	As per ISO 9999 classification and terminology document (refer https://www.iso.org/standard/60547.html).
1.2 ISO 9999 code	<p>18 18 03 <i>Handrails and support rails</i> Bars, usually cylindrical, attached to a wall, floor or other stable structure that provide the means for a person to support or stabilize himself/herself using hands or arms while walking, e.g. up and down stairs or ramps or moving along corridors</p> <p>18 18 06 <i>Fixed grab bars and handgrips</i> Devices, usually straight or angled bars, that are permanently attached to a wall, a wall and a floor, or a wall, ceiling and floor to provide support to a person while standing or changing position</p> <p>18 18 10 <i>Removable grab rails and handgrips</i> Devices, usually straight or angled bars, that can be temporarily attached to walls, floors, ceilings or furniture using, e.g. clamps or suction pads and removed without tools providing support to a person while changing position</p> <p>18 18 11 <i>Hinged rails and arm supports</i> Devices that provide support to a person when changing her/his position; they can be fixed to a wall or floor and can be folded up or sideways or lowered down to allow access or when they are not needed</p>
Purpose of 1.3	Describes the product type in clear, simple, easily understood language and the intended use in addressing functional needs.
1.3 Description and intended use	<p>Devices, usually straight or angled bars, that are permanently attached to a wall, a floor, or a ceiling to provide support to a person while sitting, standing, walking or changing position (for example transferring from bed). Grab bars are intended to assist with balance and support for those who may require minimal to moderate assistance while performing sit-to-stand, stand-to-sit and sit-to-sit transfers.</p> <p>Handrails are intended to assist a person at risk of slipping or falling when moving in indoor and outdoor environments.</p>
Purpose of 1.4	Refers to general characteristics of the assistive product that describes its appearance and components.

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1.4 General features	<p>Circular in shape. Continuous construction with no joins/obstruction along the passage of the rail. Preferable to have both ends permanently attached to wall framing (when possible), or wall to floor, or floor to ceiling. Installers to ensure integrity of wall structure prior to installation. Fold-up/swing away rail could be considered/assessed for, should space be required for transfers. (Tested to ensure ability to withstand full weight of person – Safe Working Load (SWL)).</p> <p>Varies in position (distance from floor, direction (e.g. horizontal, vertical, diagonal)); length (standardized or customized options); material (stainless steel, steel, wood, brass or plastic) and finish (slip-resistant, satin, powder-coated, epoxy-coated, polished, etc.). All features need to consider person, environment and local resources.</p>
Purpose of 1.5	Refers to product models that are included in the specific APS.
1.5 Inclusion	<p>Short grab rail/grab bar</p> <p>Long hand rails</p>
Purpose of 1.6	Refers to product models that are excluded in the specific APS.
1.6 Exclusion	Suction rails
Purpose of 1.7	Important, searchable words that relate to the specific assistive product.
1.7 Keywords	Minor home modification, grab bar, hand rail, balance/stability, support

2. Product requirements

The purpose of this section is to provide details of all applicable requirements relative to the specific assistive product. A requirement is mandatory and typically describes what a product should be able to do, how it should appear (product and packaging) etc. Only supply and service requirements considered applicable in procurement of handrails and grab bars.

2.1 Functional requirements

Purpose of 2.1	A functional requirement refers to technical details and other specific functionality that define what a product variation is supposed to accomplish. Per product variation, the requirement should describe the typical user, specific characteristics of the product (in addition to the general features above) as well as the requirements for standard configuration of the product. It is important to focus on performance requirements rather than form factors. It is important to have a clear and specific description of the typical users including e.g. health condition, functional limitation or demographics (range of age, body weight, height, etc.). If applicable, specific context of use (e.g. indoor/outdoor, in noisy environment, etc) should be specified in the product variations.			
Item	Product variations	Typical user	Specific characteristics	Requirements for standard configuration
1	Wall mounted straight grab bar	<p>People with functional limitations who require support:</p> <ul style="list-style-type: none"> to change position (standing up from sitting, sitting down from standing or 	Fixed, modular (to create angular rails), or custom in length. Horizontal, vertical, or diagonal in position.	<p>Essential features:</p> <ul style="list-style-type: none"> Materials: made of aluminum or stainless steel Surface: Non-slip, which may be through textured aluminum, or rubber

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		<p>moving from a flat surface to another),</p> <ul style="list-style-type: none"> • to maintain stability while standing. 		<ul style="list-style-type: none"> • Rust-proof or rust-resistant, particularly for use in a shower, bath or tub • Strength: sufficient for safe, repeated use considering weight of user and carer/assistant (if required). Minimum load of 150 kg (for wide platform) • Length: The effective grab length of grab bar is not less than 230mm. • Circumference: Appropriate for hand grip • Colour: adequate contrast visually with the background wall finishes
2	Wall mounted angular grab bar	<p>People with functional limitations who require support:</p> <ul style="list-style-type: none"> • to change position (standing up from sitting, sitting down from standing or moving from a flat surface to another), • to maintain stability while standing. 	Fixed, modular (to create angular rails), or custom in length. Horizontal, vertical, or diagonal in position.	As above
3	Wall-mounted banister rail (handrail)	<p>Individuals who require support:</p> <ul style="list-style-type: none"> • while walking up/down flight of stairs, or along the corridor due to poor motor control, poor balance, pain or low endurance. 	As above	As above
4	Floor to wall/floor to floor grab bar	<p>Individuals who require support:</p> <ul style="list-style-type: none"> • to push when standing up • when steadying to sit down • where there is no adjacent wall or adjacent wall structurally unstable 	As above	As above

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		to be mounted with rail.		
5	Fold down/drop down rail (handrail)	<p>Individuals who require support:</p> <ul style="list-style-type: none"> • When no suitable sidewall for wall mounted grab bar, or where space is a problem. • Individuals who need assistance pulling up from a seated position or climbing up a single step. 	<p>Design could consider options of</p> <ul style="list-style-type: none"> • Having extra vertical “support leg” down to the floor • Looped rail which provides two alternative gripping positions 	As above
Purpose of 2.2		Brief and clear description of general product performance requirements and overall qualities (e.g. stability, strength, durability, waterproof, etc).		

<p>2.2 General design requirements</p>	<p>Construction Design of rail should consider readily available material that is strong, durable and safe. Installer to consider material that is able to withstand the force applied to it. Consideration should be given to the construction of the rail, how it is joined together and the thickness of the rail tubing. This will help determine the strength of the rail and how much force can be applied through it. Important also to consider the fittings that go with the rail construction, e.g. brackets, screws. Clearance from wall, when possible, approximately 50mm to ensure sufficient space for finger clearance.</p> <p>Material Design of rail should consider readily available material that is strong, durable and safe. Commonly used material includes stainless steel, aluminum, brass, plastic and galvanised tubing. If using the rail in a wet area it is important to consider materials that do not rust such as stainless steel or aluminum. Some materials retain temperatures and may not be suitable in very hot or cold environments. If installing a metal grab rail, consider its ability to conduct electricity, particularly if the rail is being installed in bathroom or areas where water is present. To avoid safety hazards the grab rail can be earthed by a tradesperson.</p> <p>Finish Material of finishing should consider readily available material that is strong, durable and safe. Types of finishes commonly used include slip-resistant, satin, powder-coated, epoxy-coated, enamel-coated and polished. The finish on the grab bar and hand rail is important for both aesthetic and safety considerations. If the rail is being installed in a wet area, e.g. shower area; a slip-resistant & corrosion-resistant finish is needed. Option for colored finish needs to be available – for those with visual impairment.</p> <p>Diameter of the grab rail Optimal rail diameter should allow the user’s hand to encircle and be in complete contact with the rail when gripping. Recommended circumference is 30-50mm, however, it’s important to consider individual user.</p> <p>Length of the grab rail In order to ensure rails are properly fitted into supporting wall structures/frame – customized length is increasingly used. Manufacturers may offer this while installers may order rails in full length and cut-to-measure (work in collaboration with prescriber & user- when possible). However, commonly available standardized lengths include 300mm, 450mm, 600mm, and 900mm.</p> <p>Safe Working Load Sufficient SWL for general population. Ensure option available for bariatric user. (The grab rail shall remain in its position as secured when having a 110kg load applied in each of three directions, horizontal, vertical up and vertical down).</p>
<p>Purpose of 2.3</p>	<p>Details of existing or in-progress national or international standards should be provided here, whether freely or commercially available.</p>

2.3 Standards	<p>National standards of grab bar and handrail design may be specified for installation and use in public settings but not private buildings. However, it is important that product (materials, <i>manufacturing and installation</i>) meets minimum standards to ensure safety of user.</p> <p>Manufacturer: Grab bars and handrail should comply with and be tested according to relevant national or international standards. Tests should be carried out by accredited test laboratories. Manufacturers should be able to provide proof that minimum standards are met and adhered to. If not met, or tested according to relevant national or international standards, an explanation should be provided. Should the standards not be met or tested accordingly, the supplier/manufacturer is liable for any damages and injuries caused by a product that is used according to its purpose by the typical user as stated above.</p> <p>Installer: Should ensure grab bar and handrail of choice meet relevant national or international standards. Installer should be able to advise if extra accessories or structural support required/suitable to ensure safe use of grab bar. Installer should ensure installation complies with relevant national building code.</p> <p>All documentation should be in the official language or in English. (Other languages could be specified too.)</p> <p>Current product standards for grab bar <i>ISO 17966:2016</i> specifies requirements and associated test methods for assistive products for personal hygiene (APPHs) that support users, and which are intended by the manufacturer to alleviate or compensate for disability. The work environment and safety aspects for assistants are also included. It specifies safety and performance requirements that apply during normal use and foreseeable misuse and failure. It also specifies methods of measurement of the forces necessary to operate controls and specifies limits on the forces needed for some operations.</p> <p>*there seems to be no specific product standards for hand rails or grab bars however EN 12182 <i>Assistive products for persons with disability - General requirements and test methods</i> could be considered, and some specifications could be found in ISO 21542 <i>Building construction — Accessibility and usability of the built environment</i>, chapter 14.</p>
Purpose of 2.4	<p>A certificate of conformity confirms that a product conforms to applicable national and/or international regulations. If a certificate is required for the specific assistive product, this information should be requested, e.g., CE (Europe), COC (Japan), GCC (USA).</p>

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2.4 Certificate of conformity	<p>A certificate that the product conforms with applicable national or international regulations and standards should be provided (for example, a declaration of conformity with the medical device directive or the medical device regulation of the European Union).</p> <p>If the product does not conform with applicable national or international regulations and standards, the supplier should provide a certificate that the product complies with the requirements in this call for tender and is safe and effective for use by the typical user.</p> <p>The certificate should specify the product, all applied standards, the name and contact information of the supplier and the tender specifications. The certificate of conformity is a legal document and should be signed by an authorized person at the supplier.</p> <p>The certificate of conformity should be supplied in the official language or in English. (Other languages could be specified too.)</p>
Purpose of 2.5	Lists the relevant scope of information required to identify the appropriate size and weight of the assistive product in its standard configuration (specific dimensions may be given if appropriate).
2.5 Size and weight	Information about the overall (available) width, length and safe working load of grab bar/handrail should be provided.
Purpose of 2.6	Lists the relevant scope of information that should be provided to service providers (e.g. how to select, assemble, fit, adapt, follow up, maintain, repair, refurbish the assistive product). The desired language(s) in which the technical information should be provided should be stated.
2.6 Technical information (for service providers)	<p>Recommendations regarding proper assessment (for positioning of grab bar and hand rail) and information on how to assemble and install the product should be provided. Information on provided fittings should be detailed. Special instructions for installers to consider wall suitability, and special attachments required for different wall structures may have to be included, depending on national standards. Instructions on how to maintain, service, repair and refurbish the product should also be provided.</p> <p>The technical information should be provided in the official language or in English. (Other languages could be specified too.)</p>
Purpose of 2.7	Lists the scope of information, and its format, that should be provided to end-users to show how to safely use the assistive product.
2.7 Instructions for use	<p>A user manual with instructions for the safe use of the product should be provided by the supplier, and if necessary, instructions for assembling the product should be provided by the supplier. It should provide instructions on how to safely and effectively use the product, and how to maintain and clean it. It is intended for the user and/or care-giver, therefore the language and format should be appropriate for the intended users.</p> <p>The user manual may be provided in print or electronic format. The user manual should be provided in the official language, and if applicable, in English. (Other languages could be specified too.)</p>
Purpose of 2.8	Refers to the various weather and other environmental conditions, e.g., temperatures, humidity, rain, snow, sunshine, that the assistive product should be able to withstand.

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2.8 Environment of use	Grab bar and hand rail should be able to withstand weather conditions, including rain, dust, snow, ice and sleet. They should also withstand ambient temperatures from +40 to -30 degrees Celsius and relative humidity ranging from 15% to 100%. If used in wet areas, every component of grab bar needs to be waterproof. Prescribers, providers, and installer need to ensure that hand rail/grab bar of choice for wet area have anti-slip/anti rust properties. Installer should be aware of potentially compromising waterproofing of walls during installation and should proceed with the necessary sealants.
Purpose of 2.9	Refers to the duration of the warranty period and the details of the warranty the manufacturer/supplier should provide within the specified period.
2.9 Warranty	<p>Provided normal heedful use, the supplier should, during the warranty period and without extra expenses, repair parts which break on the products delivered. This comprises all spare parts and labour, except for normal wear and tear of the product.</p> <p>The warranty period should be at least 2 years after delivery of the product. The same should apply for spare parts and accessories.</p> <p>The supplier should cover all transport expenses when repairing the product.</p> <p>Following a written or verbal complaint, the supplier should repair or replace the product within 10 working days and no more than 30 working days or other specified.</p>
Purpose of 2.10	Refers to the expected duration, in years, of the assistive product. Documents describing how this is ensured must be provided.
2.10 Lifespan	Given the purpose of use by typical users, the grab bar/hand rail should be designed for a lifetime of at least 5 years. Documents describing how this is ensured should be provided.
Purpose of 2.11	Lists the scope of information required in packaging and labeling the assistive product. Explains the state of assembly the assistive product should be in when received by the end-user.
2.11 Packaging, labelling, and state of assembly	<p>Grab bar and handrail should be delivered with a label clearly stating details of the product and when it is necessary to consult appropriately trained personnel regarding the use and correct positioning of the product. All necessary parts should be included in the package. The package should withstand handling during transport.</p> <p><u>When delivered directly to users</u>, standardized product should be delivered to such an extent that the remaining assembly can be carried out with the use of commonly available screwdrivers or wrenches. If any special tool is required, it should be included with the delivery. Recommendations regarding proper assessment (for positioning of the product) and installation process needs to be included in packaging.</p> <p><u>When delivered to installers</u>, standardized grab bar and handrail should be delivered to such an extent that the remaining assembly can be carried out with the use of commonly available screwdrivers or wrenches. If any special tool is required, it should be included with the delivery. Customized grab bar and handrail should be delivered in complete packaging to ensure product integrity during transportation.</p>
Purpose of 2.12	Refers to additional product requirements, depending on the specific assistive product, e.g., material, corrosion-resistance, adjustability, foldability, etc.

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2.12 Other product requirements	In the tender, the supplier should provide the following information about the product: <ul style="list-style-type: none"> • Modular system availability
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3. Supply and service requirements

From the information provided below, only those supply and service requirements considered applicable may be used in a procurement bid.

The purpose of this section is to describe key supply and service requirements that are needed in order to ensure that the assistive product is received in due time, operational, being maintained/repaired and refurbished. From the information provided below, only those supply and service requirements considered applicable may be used in a procurement bid.	
Purpose of 3.1	Lists the scope of information to be requested on how the assistive product will be transported to the place of delivery.
3.1 Transportation	Information on how the grab bars and handrail will be transported should be provided and who should pay for the transportation.
Purpose of 3.2	Specifies the time between placing an order and receiving delivery of the assistive product (e.g. that it should not exceed 30 calendar days).
3.2 Delivery time	The time between placing an order of up to 100 sets (or 40 meters) of grab bar and handrails and receiving delivery of them should not exceed 30 working days.
Purpose of 3.3	Refers to the specific details of the various accessories and spare parts available for the assistive product, including pricing and availability.
3.3 Accessories and spare parts	<p>Generally, there are no spares or accessories provided for grab bars and handrails.</p> <p>If available, all parts that the grab bar and handrail consist of (required for safe installation), and which may be replaced at some stage, should be offered as spare parts. The supplier should state which variations of grab bar and hand rail accessories and spare parts are meant for. When an accessory consists of one part, the same part should not be offered both as an accessory and a spare part, but only as an accessory. When an accessory consists of several parts that can be replaced, all replaceable parts should be offered as spare parts.</p> <p>Spare parts should be made available for a period of at least 5 years after the last order of the grab bar and hand rail. The price of the spare parts should be offered per part and not per set or pair.</p>
Purpose of 3.4	Provides information regarding required maintenance services the supplier will provide, including the timeframe and frequency.
3.4 Maintenance	Information about payment per hour, including definitions of when a job starts and finishes; travel expenses, from – to, fee per km, rules when several maintenance jobs are done on the same route; hotel bills; who should provide the spare parts; in cases where the job is done by a sub-supplier, the invoice should be sent by the supplier with the contract. The prices should be according to the contract. (More information may be requested to be provided.)
Purpose of 3.5	Provides information regarding required repairment services the supplier will provide, including the timeframe and frequency.

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3.5 Repair	Information about payment per hour, including definitions of when a job starts and finishes; travel expenses, from – to, fee per km, rules when several maintenance jobs are done on the same route; hotel bills; who should provide the spare parts; in cases where the job is done by a sub-supplier, the invoice should be sent by the supplier with the contract. The prices should be according to the contract. (More information may be requested to be provided.)
Purpose of 3.6	Provides information regarding required refurbishment services the supplier will provide, including the timeframe and frequency.
3.6 Refurbishing	Information about payment per hour, including definitions of when a job starts and finishes; travel expenses, from – to, fee per km, rules when several repair jobs are done on the same route; hotel bills; who should provide the spare parts; in cases the job is done by a sub-supplier, the invoice should be sent by the supplier with the contract. The prices should be according to the contract (More information may be requested to be provided).
Purpose of 3.7	Specifies if training service providers is required by suppliers, and the key elements included in the training (e.g. selection, assembly, fit, maintenance and repair of the assistive product). Refers to detailed training contents or materials, if available and applicable.
3.7 Training of service providers	Information about workshop on assembling, fitting and maintaining the grab bar / hand rail should be provided to the service provider. Training of personnel is required as grabs bars and hand rails should be fixed at a specific height in order to be effective and safe. Community-level training (e.g. TAP) should include the most essential tasks and competencies to allow safe prescription and set up.
Purpose of 3.8	Specifies if training users is required by suppliers, and the key elements included in the training (e.g. training to users should include fit, use, maintenance and cleaning of the assistive product). Refers to detailed training contents or materials, if available and applicable.
3.8 Training of users	Information on safe use, cleaning, maintenance and when to follow-up should be made available to users electronically or in the form of pamphlets. Information regarding when a user should consult with the appropriately trained personnel could be provided. Caregivers should be included in the training.
Purpose of 3.9	Provides information regarding other supply and service requirements.
3.9 Other supply and service requirements	For installation of grab bars/handrails: Information should be provided about payment per hour, including definitions of when a job starts and finishes; travel expenses, from – to, fee per km, rules when several maintenance jobs are done on the same route; hotel bills; who should provide the spare parts; in cases where the job is done by a sub-supplier, the invoice should be sent by the supplier with the contract. The prices should be according to the contract (More information may be requested to be provided).