



# ASSISTIVE PRODUCT SPECIFICATION FOR PROCUREMENT

## Walking Canes, Tripods, and Quadripods

### Objective:

The objective of this specification is to help organizations in procuring good quality walking canes, tripods, and quadripods that are durable and which assist the individuals to move 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	Walking canes/Tripods/Quadripods
Purpose of 1.2	As per ISO 9999 classification and terminology document (refer <a href="https://www.iso.org/standard/60547.html">https://www.iso.org/standard/60547.html</a> ).
1.2 ISO 9999 code	<p>12 03 16 <i>Multi-tip walking sticks and canes</i> Walking devices providing support and balance which have a handgrip, shaft and three or more tips</p> <p>12 03 03 <i>Walking sticks and canes</i> Hand-held devices providing support and balance when walking, comprising handgrip without a forearm support, shaft and one tip</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>A walking cane/tripod/quadripod is a device providing support when walking with a single telescopic height adjustable shaft with a molded handgrip and single tip, or branching into three or four tips. Attached to the single/three/four tip(s) can be a variety of ferrules (usually rubber) for different environmental contexts, which can be interchanged or replaced as needed.</p> <p>A walking cane/tripod/quaripod enables a person to maintain stability and balance whilst walking over a variety of indoor and outdoor surfaces and can also be used to reduce impact on the opposite leg. It gives support and promote mobility during walking for a person with impaired mobility. Quadripods/tripods typically provide more stability than a walking cane but without the cumbersome forearm cuff of an elbow crutch.</p>
Purpose of 1.4	Refers to general characteristics of the assistive product that describes its appearance and components.
1.4 General features	Straight or offset handle with ergonomically molded handgrip. Telescopic height adjustable shaft ending in a single (cane), three (tripod) or four tips (quadripod). Each tip is fitted with a single ferrule. A variety of ferrules are available for different models and terrains.
Purpose of 1.5	Refers to product models that are included in the specific APS.
1.5 Inclusion	Walking canes that are height adjustable ending with one, three or four tips and ferrules.
Purpose of 1.6	Refers to product models that are excluded in the specific APS.
1.6 Exclusion	Forearm, elbow, and axillary crutches, walking frames.
Purpose of 1.7	Important, searchable words that relate to the specific assistive product.

1.7 Keywords	Activity, in/outdoor mobility, mobility products, mobility devices, participation, rehabilitation
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## 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 walking canes, tripods, and quadripods.

### 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	Tripod	User should be able to ambulate independently with minimal additional support needed and have fair grip strength and upper limb mobility. An acceptable level of cognition required to ambulate independently and operate the tripod effectively. The user should not have any weight bearing restrictions during gait.	1 handle, with 1 shaft, 3 tips, and 3 ferrules	Handle: Should be covered with a durable material (e.g. Nylon 6/6) which has good abrasion and hydrocarbon resistance. Usually made of durable plastic or rubber with ergonomically molded handgrip. Shaft: height adjustable (via clip or push button- the pin should be made of stainless steel) that has high strength, low deformation and high abrasion resistance characteristics Tips: non-slip and replaceable, usually made of durable rubber. Variety of types available for different environmental contexts.  Available in pediatric and adult sizes.
2	Quadripod	Same as above	1 handle, with 1 shaft, 4 tips, and 4 ferrules	Same as above
3	Canes / Walking Sticks	Same as above	1 handle, with 1 shaft, 1 tip, and 1 ferrule.	Same as above. Some may be foldable.

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Purpose of 2.2	Brief and clear description of general product performance requirements and overall qualities (e.g. stability, strength, durability, waterproof, etc).
2.2 General design requirements	<p>Tripods/Quadripods/Walking canes/sticks help to improve stability and balance through increasing a user's base of support and provide tactile information about the ground, as well as enabling weight redistribution off a weak or painful lower leg. The walking cane/tripod/quadripod should be easy to operate, with parts being replaceable, strong and durable.</p> <p>Made of durable lightweight metal (e.g. extruded anodized aluminum). Quality of metal is critical for durability, especially with regards to holes for height adjustments. The shaft should be in two parts, is telescopic in nature, and preferably made of aluminum as this is recyclable, durable, lightweight and has low corrosion. The height adjustable mechanisms is preferably made of stainless steel. Height adjustable mechanism to be made out of stainless steel for high strength, low deformation and resistance to abrasion. The pin should be made of stainless steel, at least 6mm in diameter and electroplated to prevent corrosion (high strength, low deformation and high abrasion resistance).</p> <p><b>Handle:</b> Straight or offset. Offset handles are preferred as they allow the pressure to be borne over the center of the cane/walking stick/tripod/quadripod for greater stability.</p> <p><b>Handgrip fabrication:</b> usually made of durable plastic or rubber with different shaped handgrips (e.g. injection-moulded polypropylene of grade 2340PC). Ergonomically molded handgrips are preferred, although swan neck and flat handles are also acceptable.</p> <p><b>Shaft:</b> height adjustable via clip or push button. Push-button adjustability enables the tripod or quadripod to be used in the right or left hands. Holes should not become enlarged with repeated use or adjustments. Foot pieces and cuff to slide freely over the full extensibility and can easily be disassembled; clearance between sliding parts not to exceed 1mm.</p> <p><b>Tripod/Quadripod base:</b> Available in small base and large base as well as straight or offset. Offset base to allow for natural gait.</p> <p><b>Optimal features:</b> Some may have wrist straps (loop or plug)</p> <p>The handle and shaft should be subjected to a static load test. 400N (approximately 40kgf) is applied in the upright position to the central part of the handgrip, with the stick adjusted to maximum length. Permanent deformation is measured accordingly.</p>
Purpose of 2.3	Details of existing or in-progress national or international standards should be provided here, whether freely or commercially available.

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2.3 Standards	<p>Walking canes/tripods/quadripods should comply with and be tested according to relevant national or international standards. Tests (e.g. stability test, static load test, fatigue test) should be carried out by accredited test laboratories. The deformation of testing items should meet the requirement of standard limited range. All documentation should be in the official language of the country or in English (other languages could also be specified). The test laboratories should be accredited for the methods of the appropriate standard(s) at the time of the testing. A sum of the results from the test laboratories that states the fulfillment of the requirements should always be provided. The sum should be dated and signed and delivered together with the offer.</p> <p><i>Current standards for walking canes/tripods/quadripods include:</i></p> <p>ISO 11334-4:1999 Walking aids manipulated by one arm -- Requirements and test methods -- Part 4: Walking sticks with three or more legs</p> <p>ISO 11334-1:2007: walking aids manipulated by one arm with three or more legs</p> <p>ISO 24415-1 Tips for assistive products for walking - Requirements and test methods - Part 1: Friction of tips</p> <p>ISO 24415-2: 2011: Tips for assistive products for walking- requirements and test methods- Part 2: durability of tips of crutches (excludes tips manufactured for special purposes such as ice and snow)</p> <p>CNS 15191 (2010)/BS 5181 (1975)/ CPSA 0073 (1996): static loading and junction strength test for wooden walking sticks.</p> <p>CNS 15192 (2010): adjustable metal walking sticks</p> <p>EN 1985 Walking aids - General requirements and test methods or equivalent.</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>
2.4 Certificate of conformity	<p>A certificate that the product conforms to 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). The certificate of conformity is a legal document and should be signed by an authorized person at the supplier.</p> <p>If the walking canes/tripods/quadripods do not comply with or are not tested according to relevant national or international standards, the supplier should provide a certificate that the product comply with the requirements in this call for tender. Documents supporting that a walking cane, tripod or quadripod is safe and effective for use by the typical user, including detailed reports of tests performed, should also be provided. If a walking cane, tripod or quadripod does not comply with national or international standards, the supplier 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>The certificate of conformity should be supplied in the official language of the country being supplied or in English (other languages can also be specified).</p>
Purpose of 2.5	<p>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).</p>

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2.5 Size and weight	Information about the overall width, height, length and weight of the walking cane/tripod/quadripod should be provided. If applicable, dimensions in operating and folded modes should be provided. Minimum and maximum heights of the handles and width between handles should be provided. Height is measured from handle to ground.
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)	Information on how to assemble, adapt, fit, maintain, service, repair, and refurbish the walking cane/tripod/quadripod should be provided. The technical information should be provided in the official language of the country being supplied or in English (other languages can also be specified).
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	A user manual should accompany the walking cane/tripod/quadripod in the appropriate language and format for the country by the supplier including electronic and/or print format. 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. The user manual should be provided in the official language of the country being supplied, and if applicable, in English (other languages can also be specified). The objective should be to ensure safe use of the walking cane/tripod/quadripod.
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.
2.8 Environment of use	The walking cane/tripod/quadripod should be capable to manage sand, mud, rocky terrain, rain, snow, ice, sleet- this will affect the materials used in the shaft, as well as the quality and type of ferrules available for the product. The walking cane/tripod/quadripod should be capable to withstand temperatures from +50 to -30 Celsius and relative humidity from 15 - 90%. A variety of ferrules that fit the specific shafts procured should be made available, suitable to the specific environmental needs of each country.
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 walking cane/tripod/quadripod. The same should apply for spare parts and accessories.</p> <p>The supplier should cover all transport expenses when repairing the walking cane/tripod/quadripod under warranty and a replacement cane should be provided to the user whilst repairs are being done, at no additional cost to the user. There should be a loan walking cane/tripod/quadripod from the company while the original device is being repaired if required, although a service contract with the supplier is not usually required.</p> <p>Following a verbal or written 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.

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2.10 Lifespan	Under normal condition of use, the walking cane/tripod/quadripod should be designed for a lifetime of at least 5 years. Care should be taken as in low resource and rural areas, 'normal use' may not match the manufacturers definition, due to environmental demands to be placed on the device daily. 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>Walking cane(s)/tripod(s)/quadripod(s) can be delivered in bulk in boxes, with a label clearly stating details of the product. Individual plastic wrapping of each cane within a box is not necessary. The package should withstand handling during transport.</p> <p>The walking cane/tripod/quadripod should be delivered fully assembled or assembled to such an extent that the remaining assembly can be carried out with the use of commonly available screwdrivers or wrenches.</p>
Purpose of 2.12	Refers to additional product requirements, depending on the specific assistive product, e.g., material, corrosion-resistance, adjustability, foldability, etc.
2.12 Other product requirements	<p>The supplier should provide the following information about the walking cane/tripod/quadripod:</p> <ul style="list-style-type: none"> <li>• Folding mode (folding, telescope)</li> <li>• Permitted cleaning methods</li> <li>• Whether it is a set cost per annum over 5 years or price adjustment negotiations are required per annum</li> <li>• Whether samples can be issued to representative end users to test product for 6 months to assess durability and appropriateness for specific contexts</li> </ul>

## 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.	
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 walking cane/tripod/quadripod will be transported should be provided and who should pay for the transportation. Package and transport should take place so that damage to the walking cane/tripod/quadripod, accessories and spare parts is avoided. It is not necessary to wrap each walking cane/tripod/quadripod in plastic. A secure cardboard/wooden box with a bulk purchase is acceptable.
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 walking canes/tripods/quadripods and receiving delivery of them should not exceed 30 working days or other specified.
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.



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3.3 Accessories and spare parts	<p>The supplier should offer the following spares:</p> <ul style="list-style-type: none"> <li>• Ferrules: ridged rubber stopper, robust ferrules, ice ferrules or sherpa ferrules amongst others.</li> <li>• Wrist straps</li> </ul> <p>All parts that the walking cane/tripod/quadripod consists of, and which may be replaced at some stage, should be offered as spare parts and available as close to the end user as possible. The supplier should state which variations of walking cane/tripod/quadripod the 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. Spare parts should be made available for a period of at least 5 years after the last order of a walking cane/walking stick/tripod/quadripod. 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 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 3.5	Provides information regarding required repairment services the supplier will provide, including the timeframe and frequency.
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 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 3.6	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 assessing end-users, assembling, adapting, fitting, maintaining (including cleaning), repairing, replacing spare parts, and refurbishing the walking cane/tripod/quadripod should be provided to the service provider.
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.



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3.8 Training of users	Information about adapting, using, maintaining (including cleaning), and replacing spare parts of the walking cane/tripod/quadripod should be provided to the end-user.
Purpose of 3.9	Provides information regarding other supply and service requirements.
3.9 Other supply and service requirements	<u>Decommissioning</u> This should be done if there is any visible sign of damage to the shaft (such as bending or excessive corrosion) or a loose handle. Aluminum is recyclable, and a contract can be signed with local recycling companies to remove the decommissioned items. The manufacturer should indicate the average lifespan of the product in years, with normal use. However, care should be taken as in low- and middle-income countries, 'normal use' may not match the manufacturers definition, due to environmental demands to be placed on the device daily. Thus it is critical that samples are issued to selected end users to trial in the field over a period of at least 1 month prior to awarding a tender, so that wear and tear in the contextual environment can be ascertained.