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TECHNICAL SPECIFICATIONS

FOR

ALUMINIUM LADDER 2 X20 FEET

(EXTENDABLE TYPE WITH ROPE AND PULLEY ARRANGEMENT)

Prepared by	Checked by	Checked by	Checked by	Approved by
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Specification No. CE/P&P/SPEC/2022/Aluminium ladder/010		**Date of Issue:** 12/08/2022		**Revision: 0**

This is a Tender Specification for procurement of ALUMINIUM LADDER2 X20 FEET/12 mtr long. (EXTENDABLE TYPE WITH ROPE AND PULLEY ARRANGEMENT subject to the modification by the Purchaser as per actual field requirement. Supplier to submit the Guaranteed Technical Particulars (GTP) and Drawings, after the award of the Contract, for approval of the Purchaser.

CLIMATIC AND ISOCERAUNIC CONDITIONS (CIC)

1.	The climatic and Isoceraunic conditions at the site of work are approximately given as under:	
	Description	Kashmir
i)	Max. temp of air in shade	30.6^0C
ii)	Min. temp of air in shade	-20^0C
iii)	Max. temp of air in sun	45^0C
iv)	Height above sea level (App.)	1600 Mtrs.
v)	Max. relative humidity	90%
vi)	Min. relative humidity	15%
vii)	Average no. of thunder storm days per year	54
viii)	Average rainfall	80 cm
ix)	Wind Zone	WZ – 3
x)	Average number of rainy days per year	106
xi)	Seismic Zone	SZ – 5
xii)	Area of installation	Heavy Snow Zone

2. **Communication and Transport:**

The nearest railway station is Jammu on the broad gauge line and is connected to the Divisional Stores by a metal road. The equipment is required to pass en-route through various tunnels on NH-44 (Nandni, Nashri and Jawahar Tunnel). The weights and maximum dimension of the packages suitable for transportation through tunnel route are as follows:-

1. Length = 7.0 m
2. Width = 3.0 m
3. Height = 4.55 m
4. Weight = 40 metric Ton

The supplier shall get the permissible weight and dimensions confirmed from the Highway Authorities before proceeding with the manufacture of the equipment. It will be the responsibility of the supplier to ensure timely and proper delivery of the equipment on door delivery basis, at Srinagar, through road transport. The supplier shall also ensure that the weights and dimension of the packages which are suitable to be carried by road transport up to Srinagar.

3.	**Additional conditions**	
I	Permitted Noise Level	45Db
Ii	Induced Electromagnetic disturbance	1.6kV
Iii	Pollution class/ creepage distance	III/25mm/kV
Iv	Isoceraunic Level (days/year)	50
V	Condensation	Occasional

ALUMINIUM LADDER 2 X20 FEET/12 mtr long. (EXTENDABLE TYPE WITH ROPE AND PULLEY ARRANGEMENT)

1. SCOPE

i) This specification covers the general requirements towards design, manufacture, testing at manufacturer's site, supply and delivery of Extendable type Aluminium Ladders with rope and pulley arrangement for carrying out works by the line and field staff.

ii) It is not the intent to specify completely herein all details of the design and construction of material. However, the material shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation up to the Bidder's guarantee in a manner acceptable to the Purchaser, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment, is not in accordance therewith.

iii) The material offered shall be complete with all components necessary for their effective and trouble free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification or not

2. APPLICABLE STANDARD

The Aluminium Ladder shall comply in all respects with the IS: 3936(Part-2)-1991 with latest amendments unless otherwise stipulated in this specification or any other International Standards which ensure equal or higher quality material.

3. GENERAL AND CONSTRUCTION REQUIREMENT

a) Material: Ladder shall be made of Aluminium alloy .The grade of Aluminium Alloy for the Aluminium Ladders shall comply with IS: 617:1975amended upto date.

b) Construction:

i) The Ladder shall be Light weight, robust and extendable type with rope and pulley arrangement.

ii) The ladders shall be having proper locking system The Upper sections can slide in guides or brackets so arranged that the length of the ladder can be varied as required between the fully extended position and the fully retracted position.

iii) All ladders shall be constructed to carry their intended loads safely.

iv) Side rails of Aluminium Ladder shall be of sufficient cross section to prevent excessive deflection in use.

v) The surfaces of the ladder shall be plane, free of splinters and the edge of hand rails used shall be bevelled.

vi) There should be no danger of slipping.

vii) The certificate of the material used for ladder has to be provided by the supplier before the delivery of ladder.

c) General Requirements :

i) Rung spacing should be uniform and not over 300 mm on centres.

ii) Rungs shall be recessed at least 22 mm into rails.

iii) Ladder shall be of 2x20 ft in length.

iv) Locks and guides shall be of such design and construction as to make the extension ladder equal in strength to a ladder of equal length constructed of continuous side rails.

v) Top and bottom of each ladder shall be securely fastened.

vi) Ladder having a missing, defective rung or one which depends solely for its support on nails shall not be used. Defective ladders shall be promptly replaced.

vii) For Load Testing, a load test of 1.5 times mass of worker plus 16 bricks should be hung for each rung and checked for any bend or distress. The lower rungs may be tested by reversing the ladder.

viii) The Manufacturer should provide the Certificate of the material used for making of Aluminium Ladders.

ix) All tests as per IS including the load test is to be carried out at manufacturer's place in presence of Departmental representative on at least 10% of the sample before dispatch.

The bidder shall furnish Guaranteed Technical Specifications in the format given in Section B, Annexure "A."

4. PACKAGING AND MARKING

. The Aluminium Ladders shall be suitably packed as per requirement of IS. The Aluminium Ladders shall be legibly and indelibly not having a harmful effect on the following information:

i) Name of the manufacturer

ii) Year of manufacture

iii) ISI Certification mark

iv) "CE P&P Wing,KPDCL

5. INSPECTION

The Manufacturer shall furnish a complete and detailed quality plan for the manufacturing process of the Aluminium Ladders. All raw materials shall conform to relevant applicable standards and tested for compliance to quality and requirement. The Manufacturer shall arrange, for inspection by the purchaser with one month advance notice for verifying the quality of the Aluminium Ladders as specified in the quality assurance plan already submitted by the Bidder at the time of Bid submission.

6. CHALLENGE CLAUSE:

The Purchaser reserves the right to have the material, received after inspection by the authorized inspecting officer, again tested for any parameter(s) from approved/NABL accredited testing house/in house technique of the purchaser. The results if found deviating/unacceptable or in non-compliance with the approved GTP'S, the lot shall be rejected and bidder shall arrange to replace the rejected lot within thirty (30) days of such detection at his cost including to and fro transportation.

7. DOCUMENTATION:

i) . All drawings shall conform to international standards organization (ISO) ' A' series of drawing sheet / Indian Standards specification(relevant IS). All drawings shall be in ink and suitable for microfilming. All dimensions and data shall be in System International Units.

ii) The manufacturing of the equipment's shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the Purchaser. All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawing shall be at the Bidder's risk.

iii) Approval of drawings / work by Purchaser shall not relieve the Bidder of his responsibility and liability for ensuring correctness and correct interpretation of the drawings for meeting the requirement of the latest revision of applicable standards, rules and codes of practices. The equipment shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards and Purchaser shall have the power to reject any work or materials which, in his judgment, is not in full accordance therewith.

iv)Soft copies (Auto CAD & PDF Versions) of all the drawings shall be submitted by the successful bidder.

8. SCHEDULES

The Bidder shall fill in the following schedules

1. Guaranteed technical particulars of the Extendable type Aluminium Ladders 2 X20 FEET/12 mtr long with rope and pulley arrangement

GUARANTEED TECHNICAL PARTICULARS
FOR ALUMINIUM LADDER 2 X20 FEET/12 mtr LONG EXTENDABLE TYPE WITH ROPE AND PULLEY ARRANGEMENT

(To be filled by the bidder)

SECTION :B

(ANNEXURE –"A")

S.NO	PARTICULARS	DESCRIPTION/SPECIFICATION	SPECIFICATIONS TO BE CONFIRMED
1	Name of Manufacturer's & Address	To be Quoted	
2	Material used	To be quoted as per IS	
3	Length of Ladder (m)	Aluminum Ladder 2x 20 feet (Extendable Type with Rope and Pulley Arrangement (12 mtr long.)	
4	Rung Spacing (mm)	300mm Maximum	
5	Cross section of Side Rails (mm)	To be quoted	
6	Maximum Bearable Load	a load test of 1.5 times mass of worker plus 16 bricks should be hung for each rung and checked for any bend or distress. The lower rungs may be tested by reversing the ladder	
7	Weight of Ladder	To be quoted	
8	Marked	i) Name of the manufacturer ii) Year of manufacture iii) ISI Certification mark iv) "CE P&P Wing,KPDCL	
9	Whether the Ladder is having rope and pulley arrangement (yes/no)	To be quoted	
10	Standard specification to which this material shall conform	To be Quoted	
11	Dimensional drawings	To be submitted in the office of purchase as mentioned in SBD	
12	Any other relevant details		

Name of bidder/tenderer_____

Signature_____

Designation_____