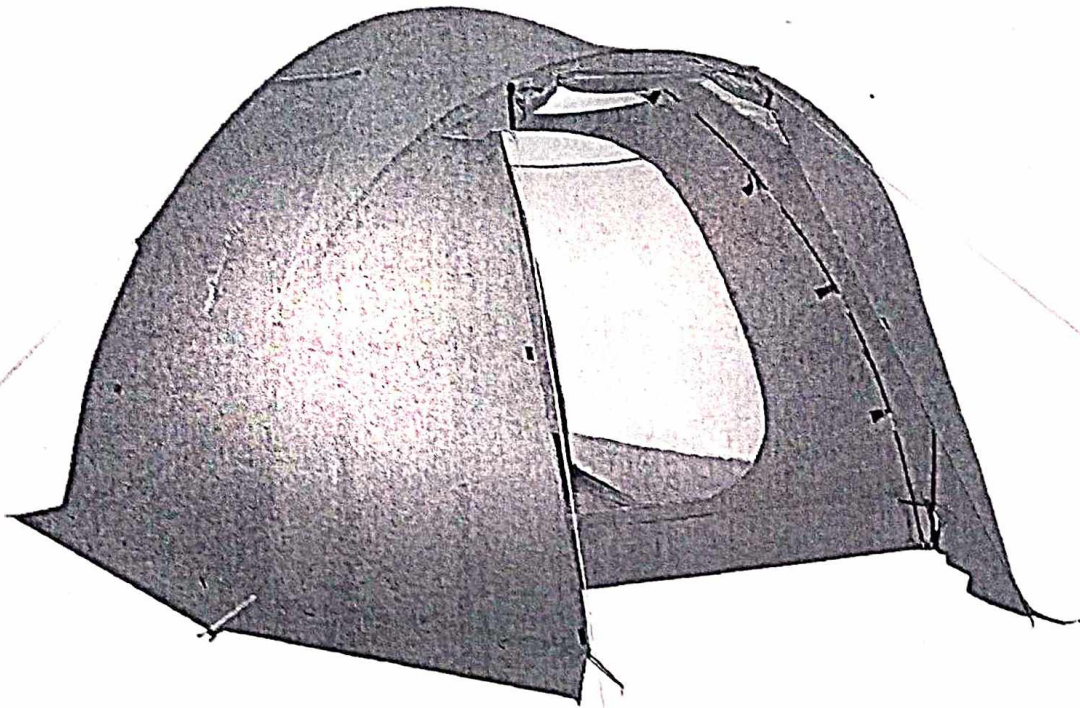


## Test report and suggested QR/Specification of Alpine Tent



**Introduction:** The alpine tent is constructed with an inner tent and the fly sheet (Outer cover) which stands on two vertical and one horizontal aluminium folding pole. The fly sheet is extended on the back side in 3 to 4 men capacity tents and touches the ground giving extra space to store ration, equipment, or backpacks. The tough, coated waterproof ground sheet is provided and stitched with the inner tent. The main gate is provided with a see-through (mosquito) net and half opening zipped gate at the back to utilize the back gate for storage under fly extension. Tents are provided with sufficient pockets and loops to hang anything inside the tent. The complete tent is having stuff sacks, pegs, poles, cords, and stoppers.

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S. N.	Characteristics	Requirements	Test Method
1.	<b>Total Weight of Tent, Kg</b> <ul style="list-style-type: none"> <li>- Weight of Tent</li> <li>- Weight of Tent covers</li> <li>- Weight of poles (14 poles set)</li> <li>- Weight of poles (13 poles set)</li> <li>- Weight of ground hook (21 in 1 set)</li> </ul>	7.0 kg (Maximum)	Electronic Balance
2.	<b>Outer Height of Tent, Ft, Maximum</b>	6.0	Measuring tape
3.	<b>Floor Area of the tent, sq ft</b>	60 (Minimum)	Measuring tape
4.	<b>Fibre identification</b> <ul style="list-style-type: none"> <li>- Outer Cover</li> <li>- Groundsheet</li> <li>- Internal side walls</li> <li>- Internal Front and back walls</li> </ul>	Polyester/ Nylon Polyester Polyester Polyester	IS 667
5.	<b>Colour</b> <ul style="list-style-type: none"> <li>- Outer Cover</li> <li>- Groundsheet</li> <li>- Internal side walls</li> <li>- Internal Front and back walls</li> </ul>	Sky Blue Dark grey Sky blue White	Visual
6.	<b>Weave</b> <ul style="list-style-type: none"> <li>- Outer Cover</li> <li>- Groundsheet</li> <li>- Internal side walls</li> <li>- Internal Front and back walls</li> </ul>	Rip-Stop Plain 1/1 Plain 1/1 Plain 1/1 Plain	Visual
7.	<b>Breaking Strength, N, Minimum</b> <ul style="list-style-type: none"> <li>- Outer Cover <ul style="list-style-type: none"> <li>o Warp wise</li> <li>o Weft wise</li> </ul> </li> </ul>	500 350	IS 7016 Part 2
	<ul style="list-style-type: none"> <li>- Groundsheet <ul style="list-style-type: none"> <li>o Warp wise</li> <li>o Weft wise</li> </ul> </li> </ul>	750 700	
	<ul style="list-style-type: none"> <li>- Internal side walls <ul style="list-style-type: none"> <li>o Warp wise</li> <li>o Weft wise</li> </ul> </li> </ul>	500 350	
	<ul style="list-style-type: none"> <li>- Internal Front and back walls <ul style="list-style-type: none"> <li>o Warp wise</li> <li>o Weft wise</li> </ul> </li> </ul>	500 350	
8.	<b>Tear Strength, N, Minimum</b> <ul style="list-style-type: none"> <li>- Outer Cover <ul style="list-style-type: none"> <li>o Warp wise</li> <li>o Weft wise</li> </ul> </li> </ul>	50 35	IS 7016 Part 3 (Method A1)
	<ul style="list-style-type: none"> <li>- Groundsheet <ul style="list-style-type: none"> <li>o Warp wise</li> <li>o Weft wise</li> </ul> </li> </ul>	55 50	

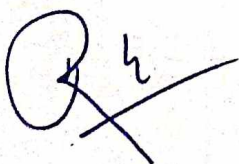
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9.	- Internal side walls o Warp wise o Weft wise	50 35	
	- Internal Front and back walls o Warp wise o Weft wise	50 35	
10.	<b>Mass, g/m<sup>2</sup>, Maximum</b> - Outer Cover with coating - Groundsheet with coating - Internal side walls - Internal Front and back walls	75 120 55 65	IS 7016 part 1
11.	<b>Blocking</b> - Outer Cover - Groundsheet	No blocking, No Tackiness	ISO 5978
12.	<b>Water repellency (face side)</b> - Outer Cover - Groundsheet	90 90	IS 390
13.	<b>Water resistance, hydrostatic head test on all fabrics and seams</b>  <b>As received basis</b> - Outer Cover - Groundsheet  - On the seams of the outer cover	280 mbar 280 mbar  250 mbar	EN ISO 20811, Dynamic method (Rate of rise of water 60 cm H <sub>2</sub> O/min)
	<b>After leaching (Annexure-1)</b> - Outer Cover - Groundsheet - On the seams of the outer cover	280 mbar 280 mbar 250 mbar	
	<b>After weathering as per IS 14887 for 54 hours</b> - Outer Cover - Groundsheet - On the seams of the outer cover	280 mbar 280 mbar 40 mbar	
14.	<b>Colour fastness to washing</b> Outer Cover, Groundsheet and Internal side walls (except white fabric) - Change in colour - Staining on adjacent fabric	4 or better 4 or better	IS/ISO105-C10C(3)

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15.	<b>Colour fastness to Rubbing</b> Outer Cover, Groundsheet, and Internal side walls (except the white fabric) - Dry - Wet	4 or better 4 or better	IS/ISO 105 X12
16.	<b>Colour fastness to Light</b> Outer Cover, Groundsheet, and Internal side walls (except the white fabric)	5 or better	IS/ISO105 B02
17.	<b>Dimensional Change due to relaxation, %, Maximum</b> (after 72 hours dipping in water for all types of fabric used in Tent)	0.5	IS 2977
18.	<b>Resistance to low temperature</b> {(-)30±2°C} for 6 hours (For all types of fabrics used in the Tent)	No crack	IS 7016 Part 10
19.	<b>Resistance to damage by flexing</b> (De-mattia method after 100000 cycles) (For all types of fabrics used in the Tent)	No crack	IS 7016 Pt 4
20.	<b>Thread Density, Per Inch,</b>	(Maximum)	IS 1963
	- Outer Cover		
	o Ends	120	
	o Picks	90	
	- Groundsheet		
21.	o Ends	70	IS 11871 Method A
	o Picks	60	
	- Internal side walls		
	o Ends	110	
	o Picks	80	
21.	- Internal Front and back walls		IS 12722
	o Ends	110	
	o Picks	80	
21.	<b>Flammability test (before and after leaching as per Annexure-1)</b>	Avg. damaged length (Char length): ≤85 mm	IS 11871 Method A
	<b>Vertical flammability:</b> Outer Cover, Internal side walls, and Internal Front and back walls	Avg. after flame: ≤2 seconds	
	<b>Methenamine tablet test:</b> on Groundsheet	The damaged distance between the centre of the specimen and edge of the damaged zone shall not more than 10 mm	IS 12722



## 22. Slide fastener

	-Designation	Medium Special	IS 14181
	-Lateral Load or Crosswise strength, N, Minimum	750 N (Minimum)	
	-Security of attachment Puller to slider, N, Minimum	300 (Minimum)	
	-Type (For Tent)	Type F closed end (Double puller for mesh door and single puller for fabric door)	
	- Type (For Tent Cover)	Type E closed end (Double puller)	
23.	<b>Cord</b> - Fibre identification - Colour - Linear weight, g/mtr - Strength - Length, cm	Polypropylene Black	
24.	<b>Hook &amp; Loop fastener</b> - Material o Hook o Loop - Color - Strength of Tape o Sheer strength o Peel Strength After endurance sheer strength	Nylon 66 Nylon 6/Nylon 66 Black 900g/cm <sup>2</sup> (min.) 200g/cm (min.) Shall not be less than 675g/cm <sup>2</sup>	IS 8156: 2014 Reaffirmed 2019
25.	<b>Webbing</b> (at all corners at bottom of the tent) - Colour - Width, mm - Identification of the material - Colourfastness to washing o Change in colour o Staining on adjacent fabric - Colourfastness to light - Breaking strength, N, Minimum (Lengthwise)	Red 19 to 20 Polypropylene 4 or better 4 or better 5 or better 1000	Visual Measuring scale As per melting point using appropriate apparatus. Polypropylene: approx. 170° IS/ISO105-C10C(3) IS/ISO 105 B02 IS 1954

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25	<b>D-ring</b> - Identification of material	Polypropylene or Nylon	As per melting point using appropriate apparatus. Polypropylene: approx. 170oC Nylon: 220 to 260°C
26	<b>Door holder</b> - Shape  - Flap (for holding tent door to the wall of the tent)  - Flap material - Flap Length, mm - Flap width, mm - Identification of the material	Cylindrical  for holding tent door to the wall of the tent  Elastic  28 to 30 mm  10  HDPE	Visual  Visual  Visual  Vernier Caliper  Vernier Caliper  As per melting point using appropriate apparatus. HDPE : approx. 135°C
27	<b>Toggle</b> - Length, mm - Diameter, - No of holes - Width of the attachment hole, mm  - Identification of the material	28-30 6-7 01 11  HDPE	Vernier Caliper Vernier Caliper Visual Vernier Caliper  As per melting point using appropriate apparatus. HDPE : approx. 135°C
<b>28. Pole</b>			
	Material	Aluminium	ASTM E 1251
	Elastic cord diameter, mm	2 to 3 mm	Vernier Caliper
	Length of pole with adjuster ,cm	44 to 45	Measuring Scale
	Length of adjuster ,cm	6 to 7	Measuring Scale
	Diameter of pole , mm - Outer - Inner	9.4 to 9.6 mm 3 to 3.2	Vernier Caliper
	Diameter of adjuster, mm - Outer - Inner	11.5 to 12.0 9.5 to 10.0	Vernier Caliper
	Tip on first and last pole (For insert in eyelet) Tip length, mm Tip outer diameter, mm	26.5 to 27.5 7.5 to 8.0	Vernier Caliper
	Thin Elastic for pole bonding	Presence	Visual

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<b>29. Pole Holder</b>			
	Attached to Tent with webbing	Presence	Visual
	Length, mm	21.5 to 22	Vernier Caliper
	Inner diameter, mm	9.5 to 10	Vernier Caliper
	Identification of material	Polypropylene	As per melting point using appropriate apparatus. PP: approx. 170°C
<b>30. EYELET</b>			
	Eyelet attached on tape (webbing) at each corner for pole holding	Presence	Visual
	Diameter, mm		Vernier Caliper
	- Inner	8 to 8.5	
	- Outer	16 to 17	
	Eyelet made of metal	Metallic Presence	Visual
<b>31. Mesh (Knitted) for pocket and front &amp; back door and roof</b>			
	Mass, g/m <sup>2</sup>	40 to 43	IS 1963
	Material	Polyester	IS 667
	Course per Inch	26 to 30	IS 1963
	Wales per Inch	20 to 26	
<b>32. Aluminum Hook</b>			
	Length, cm	21.5 to 22.5 with bend	Measuring tape
	Diameter, mm	4 to 5	Vernier Caliper

### Method of Leaching

The specimen shall be immersed in water at a temperature of 15 to 20°C and a pH of between 6 and 8 for 72 hours. The specimen shall then be removed, air-dried, and brought to standard atmospheric conditions prior to further testing.

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Director, NITRA,  
Ghaziabad (UP)  
Co-Opted Member

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Dy. Comdt., CISF  
Member-IV

Sh. Nimit Ahlawat, Dy. Comdt., SSB  
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Sh. Kamlesh Kestwal,  
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(Prov.), N. Ftr, ITBPF  
Member-I

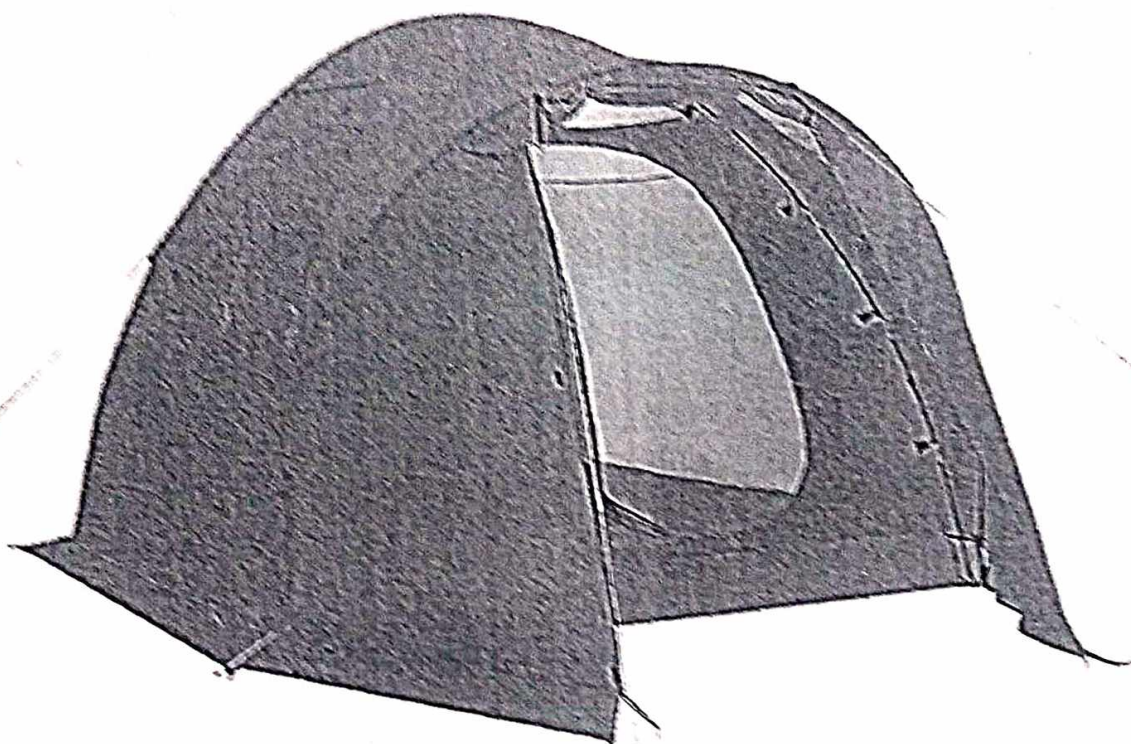


Figure -1 Alpine Tent

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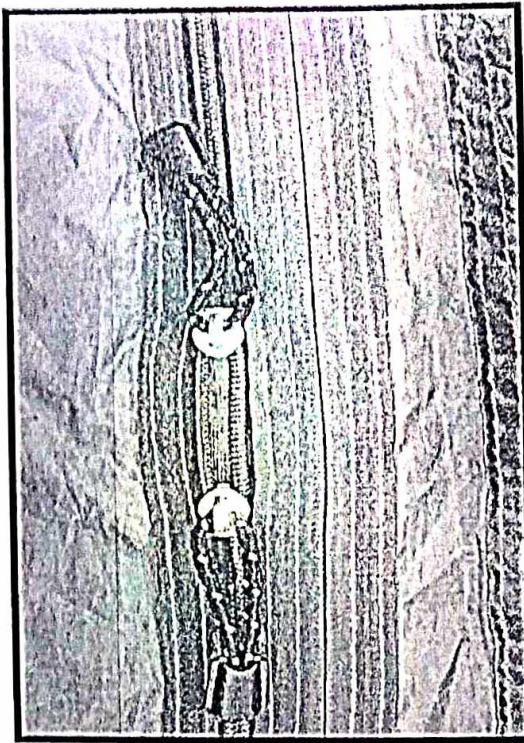
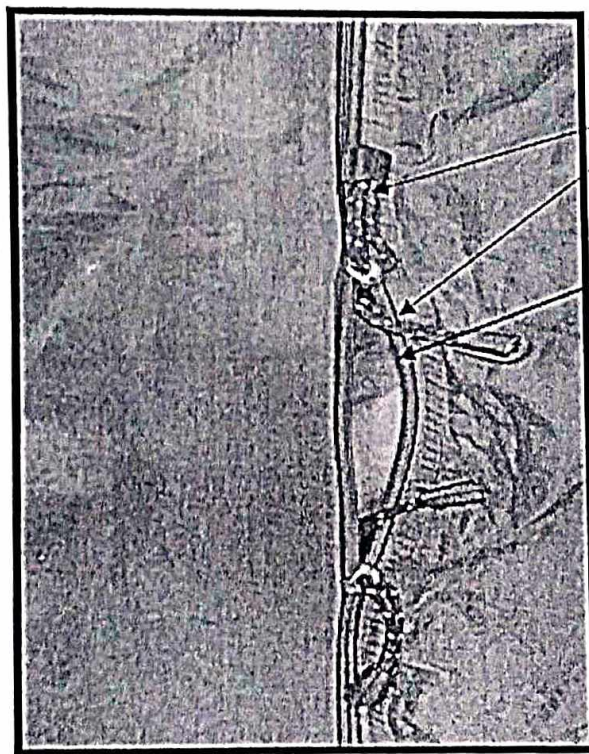


Figure-2 Tent Opening



Double slider

Slide fastener, Type 'F' and  
Double Puller for mesh (net) gate

Figure -3 Tent opening with slider fastener

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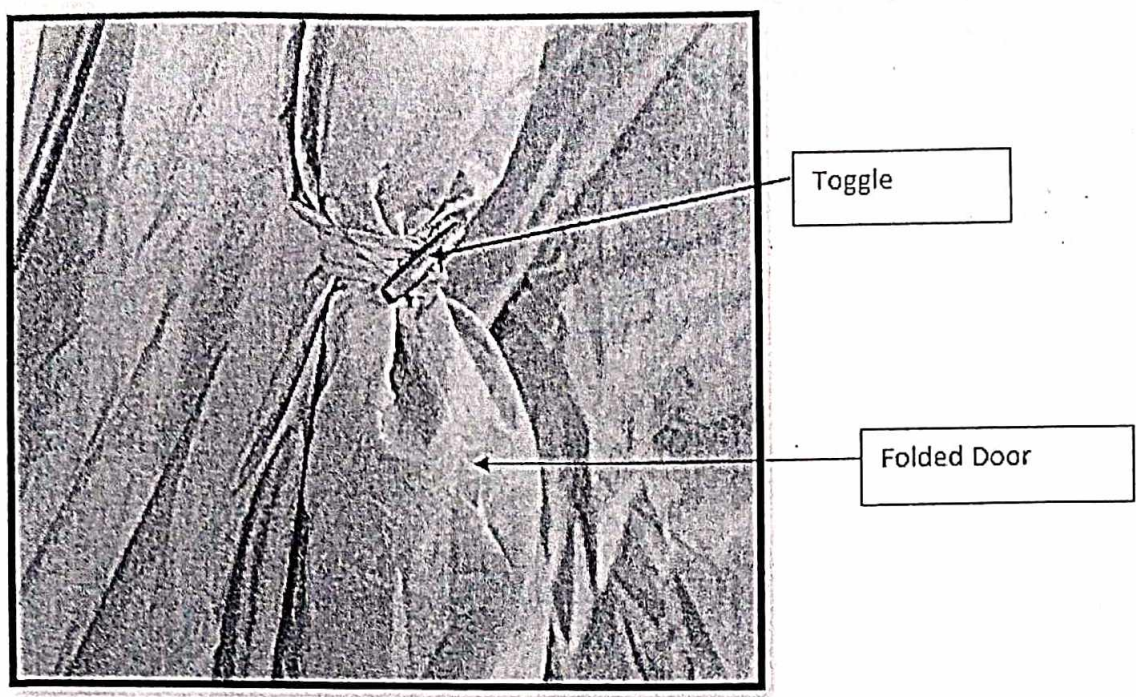


Figure -4 Door holder

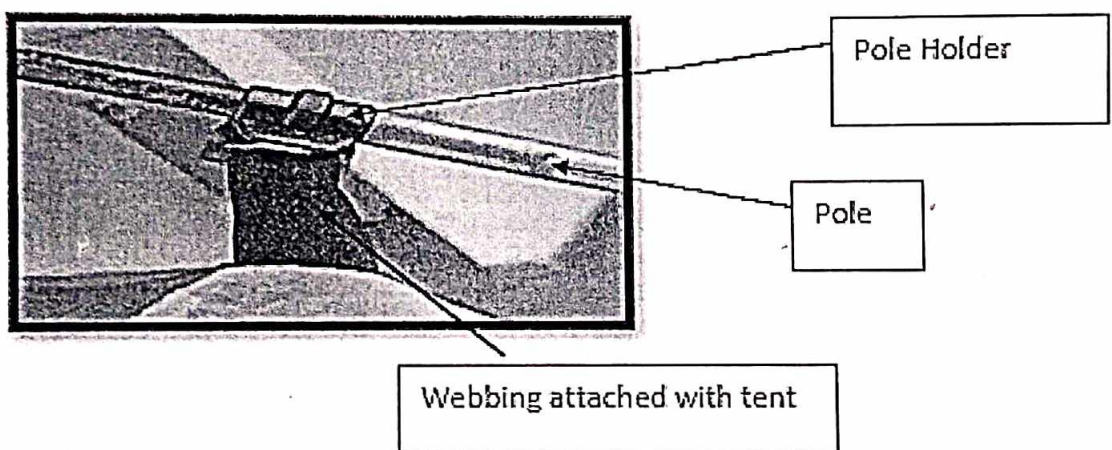


Figure -5 Tent attachments

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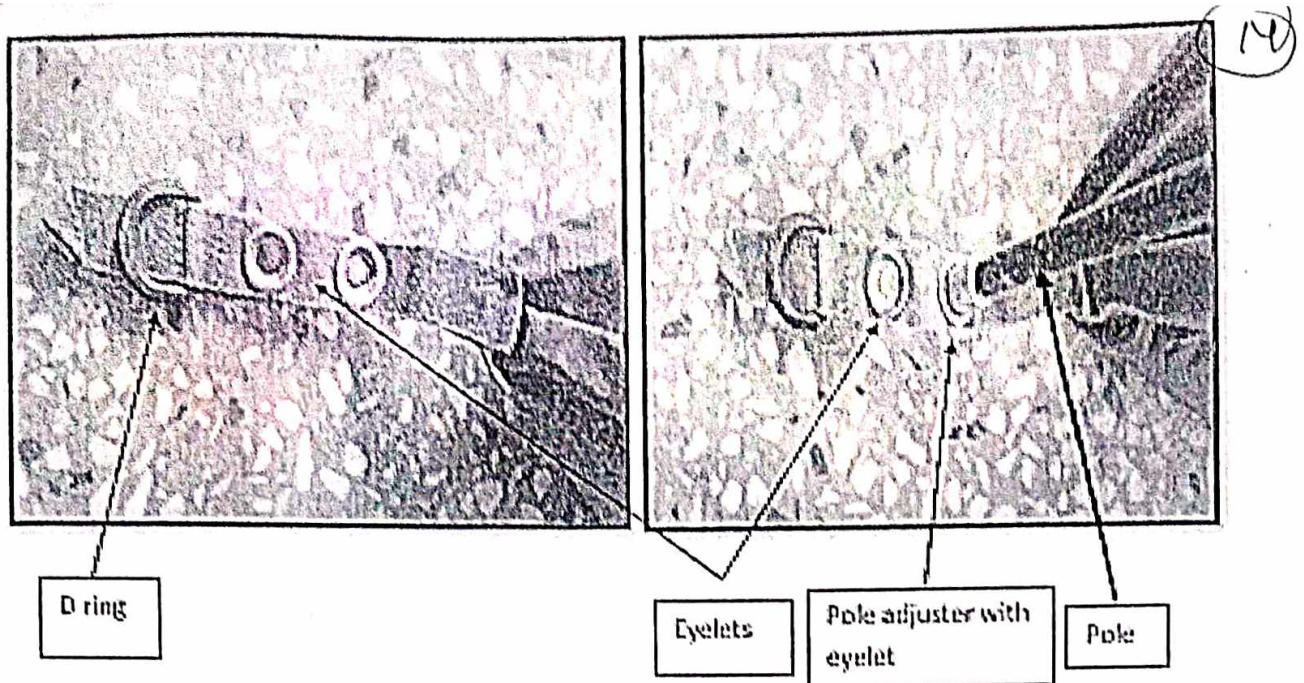


Figure :6 Eyelets

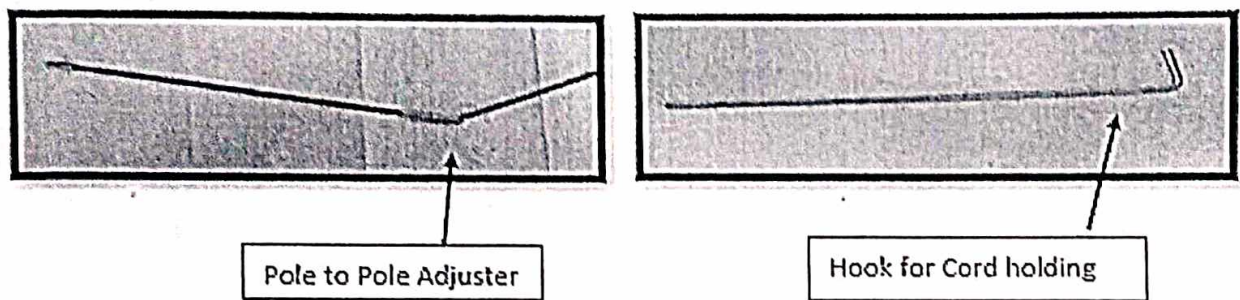


Figure : 7 Poles

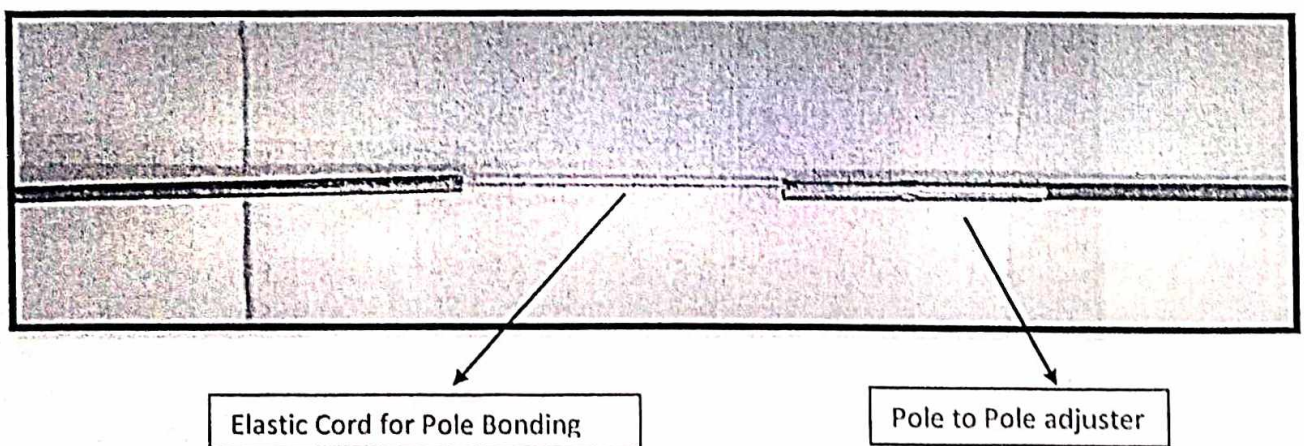
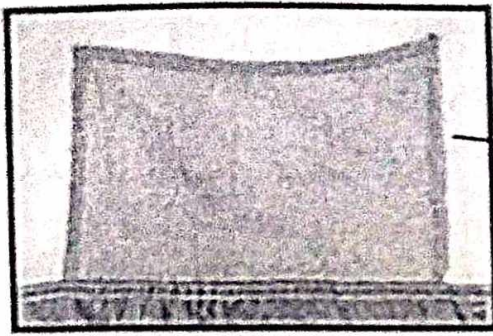


Figure 8 : Pole adjusters

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Pocket at base on side wall (Both side)

Figure 9 : Net Pocket at Tent

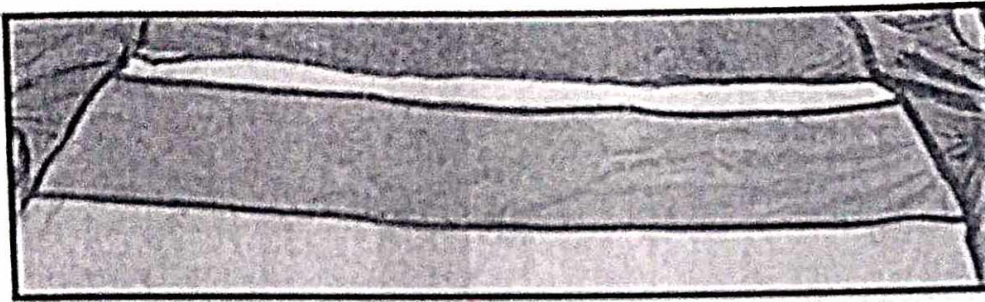
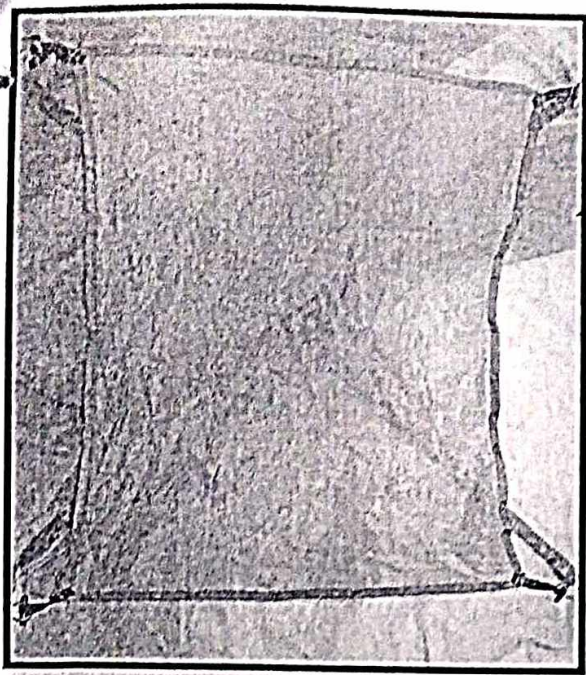


Figure -10 Pocket at Top (where mesh join) on side wall (Both side)

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Detachable mesh  
attached on top of tent  
(Inner Side)

Mesh holder (male)

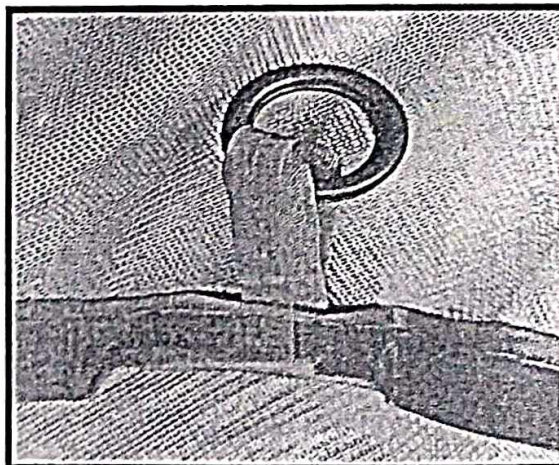
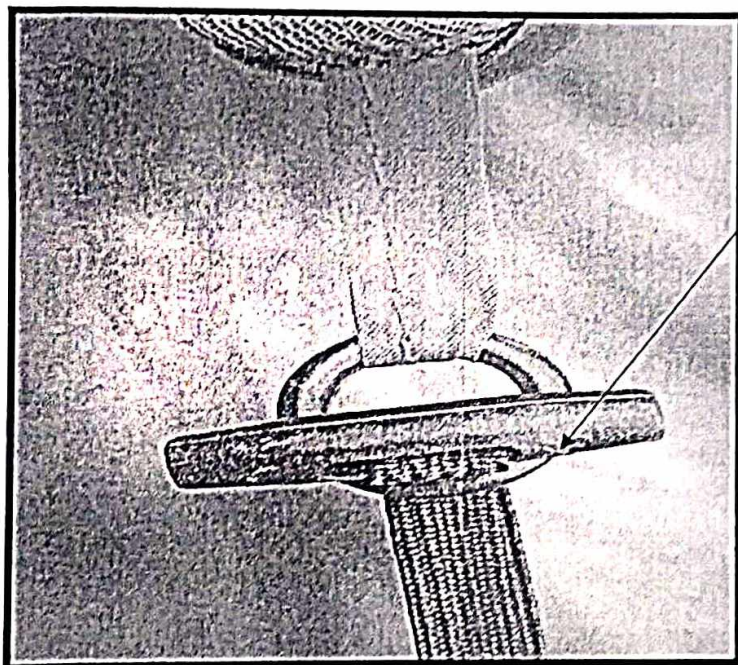
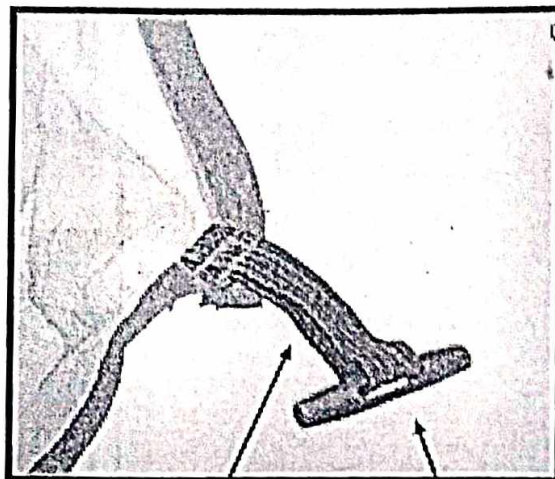
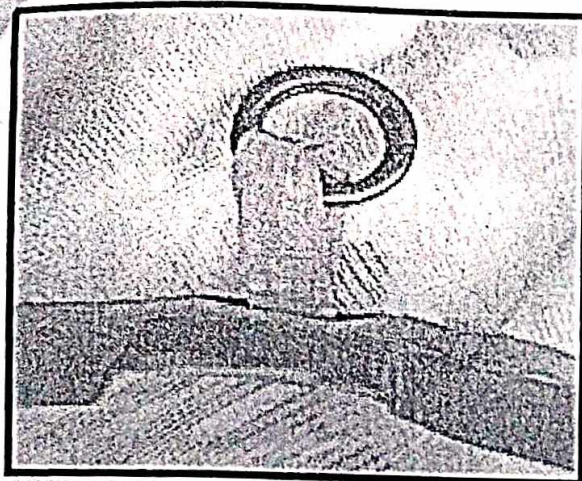


Figure 11: Tent assemblies

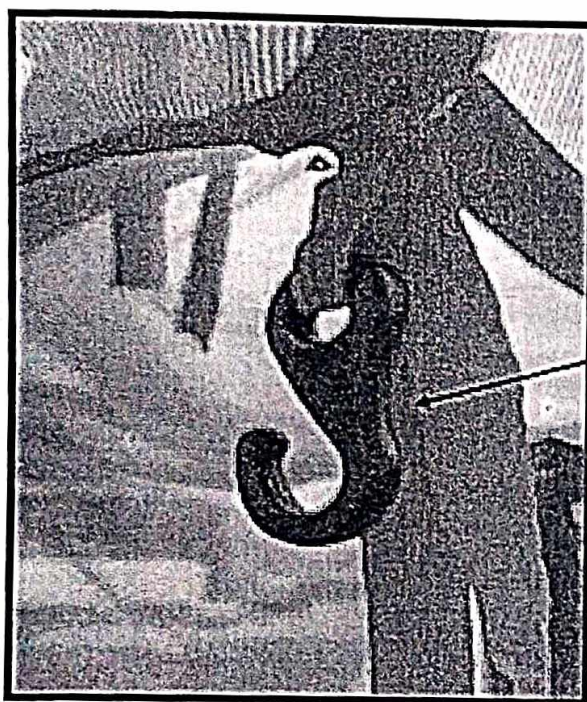
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Flap (Elastic)

Toggle

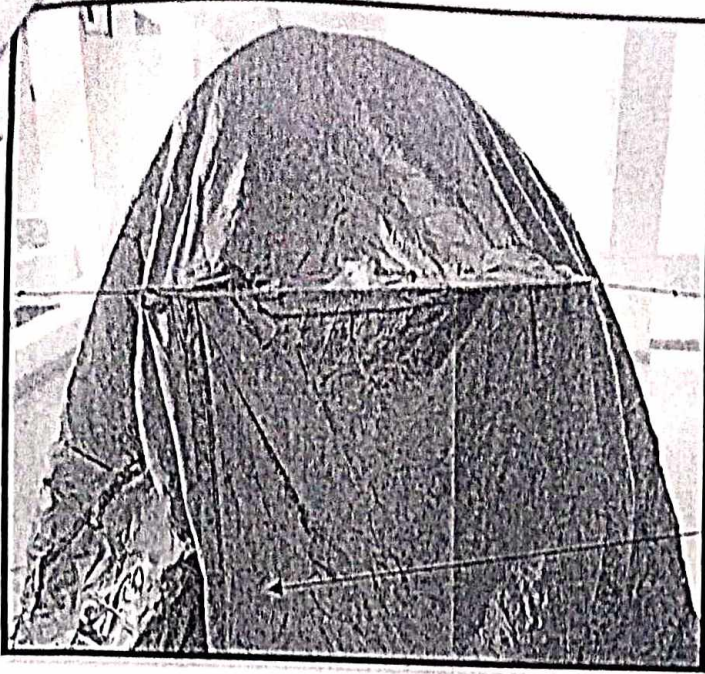


Hook at Top (Inner Side)

Figure 12: Tent garniture items

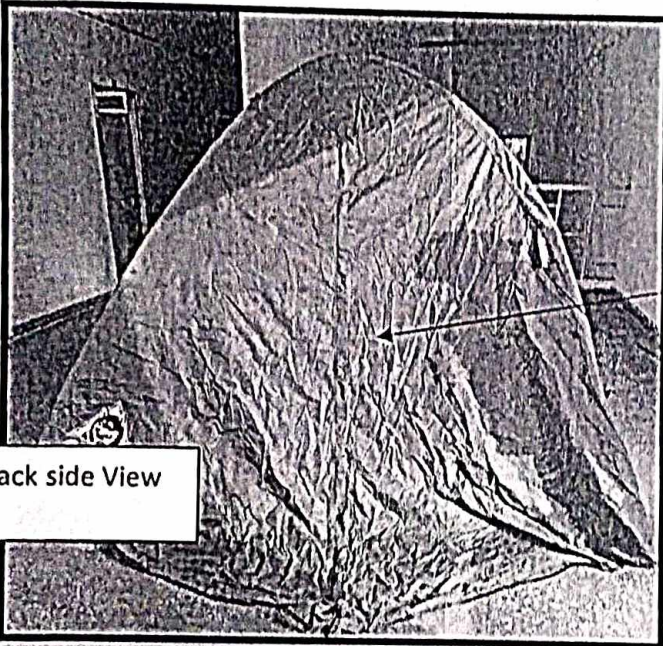
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Slide fastener with flap

Figure 13: Tent cover (Front View)



Slide fastener with flap

Back side View

Figure 14: Tent cover (Back View)

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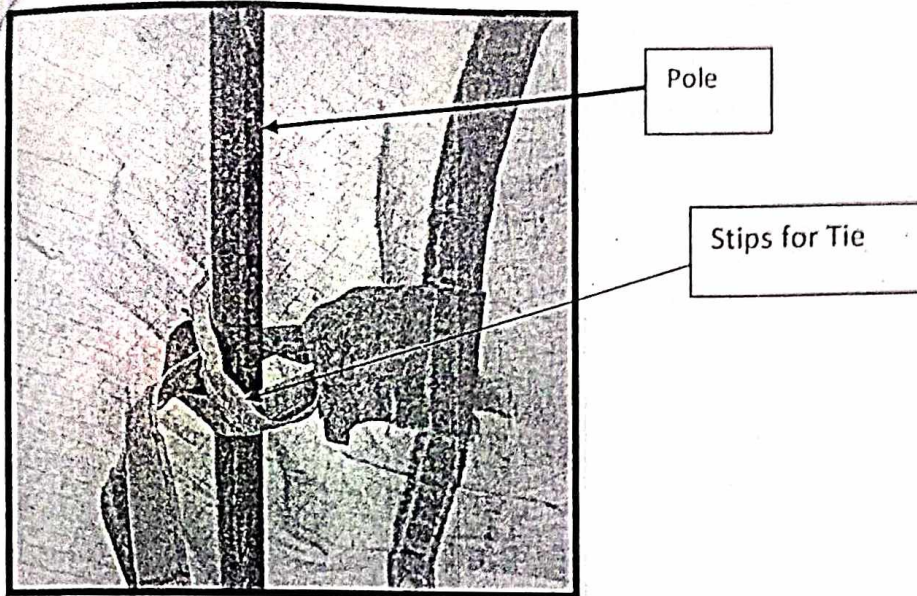


Figure 15: Tent (Inner View)

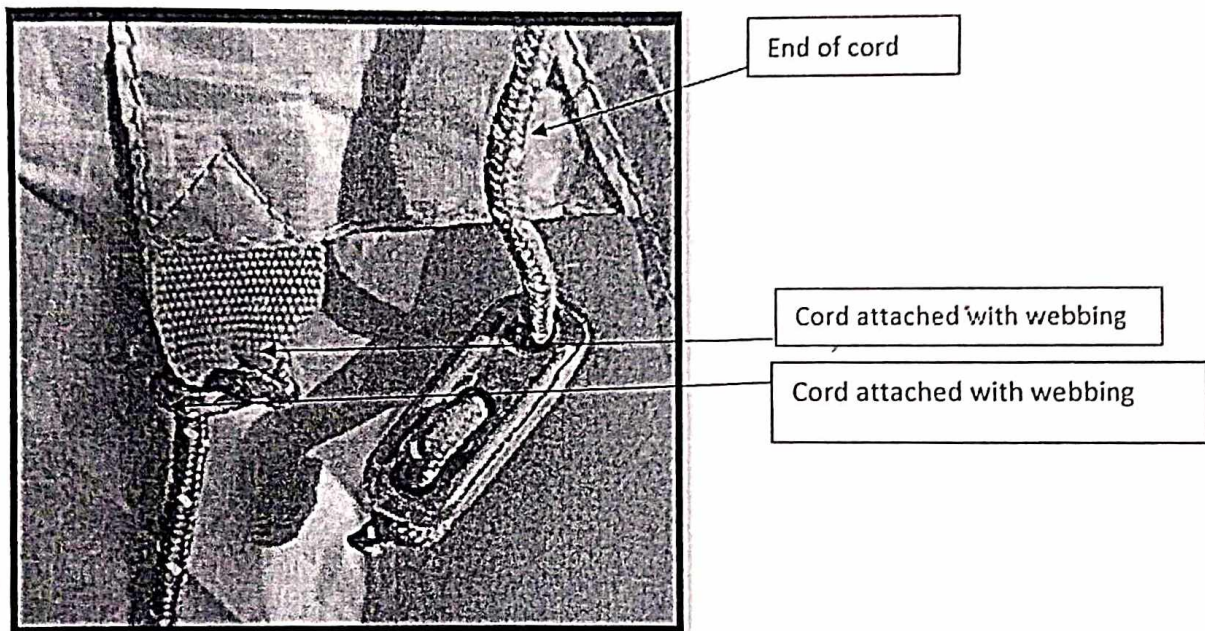
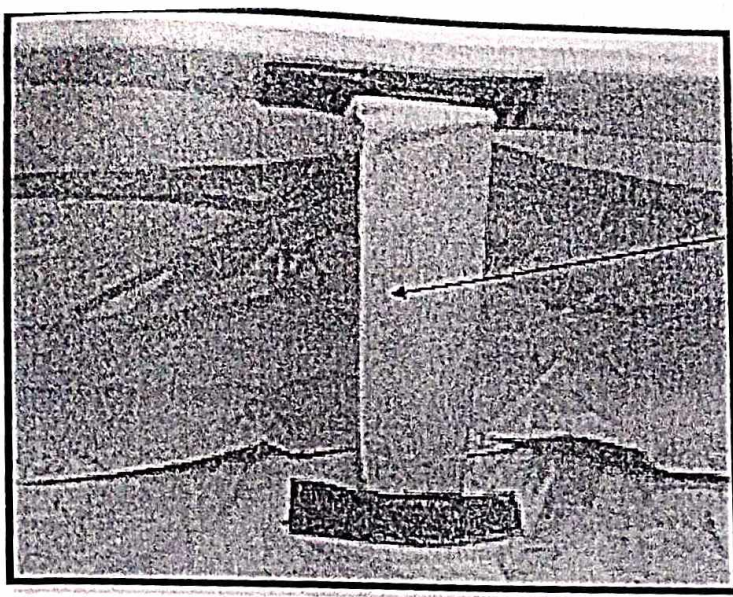


Figure 16 Tent garniture items

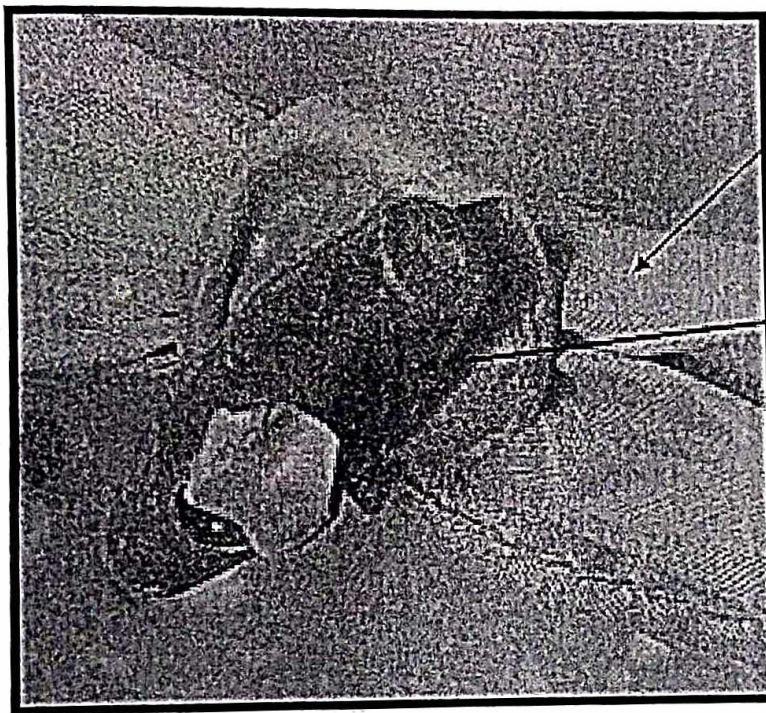
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Window Opener Stand

Figure 17: Tent Cover Window



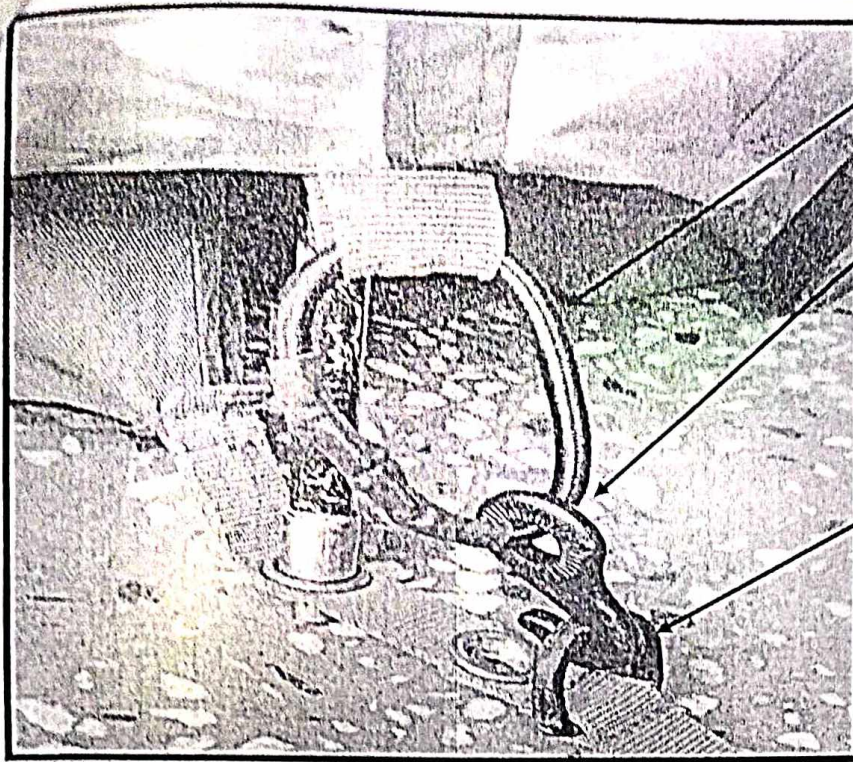
Tent cover Flap at bottom

Toggle

Figure 18 Flap

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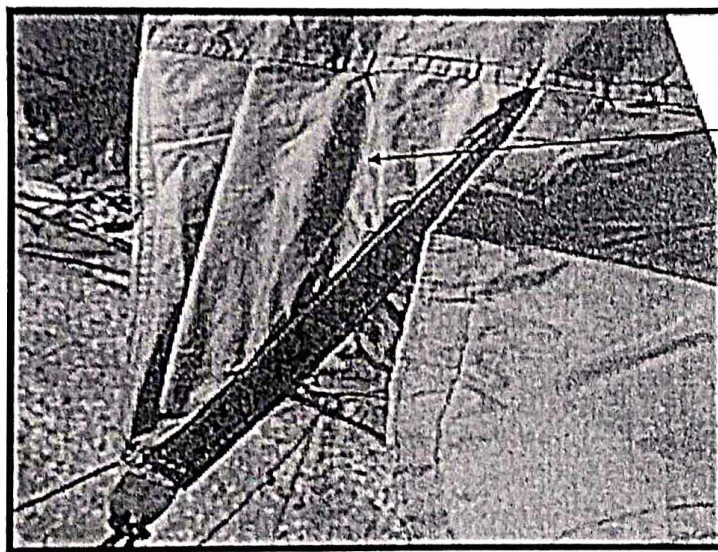
Elastic Cord

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Tent Cover Holder

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Figure 19: Tent assessrics



Front Door Flap

Figure 20 Front door flap

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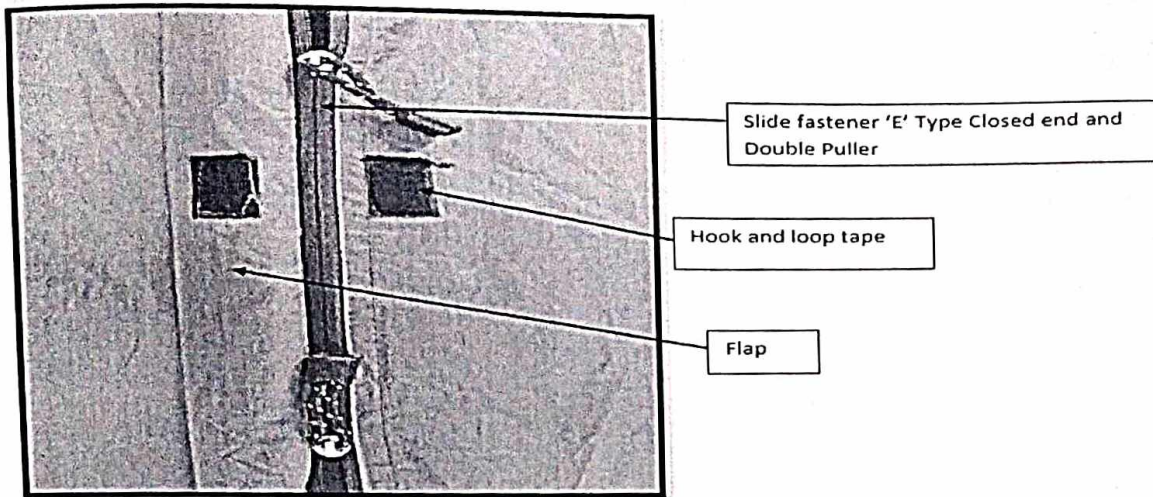


Figure 21: At bottom of Tent Cover (End of Slidefastener )

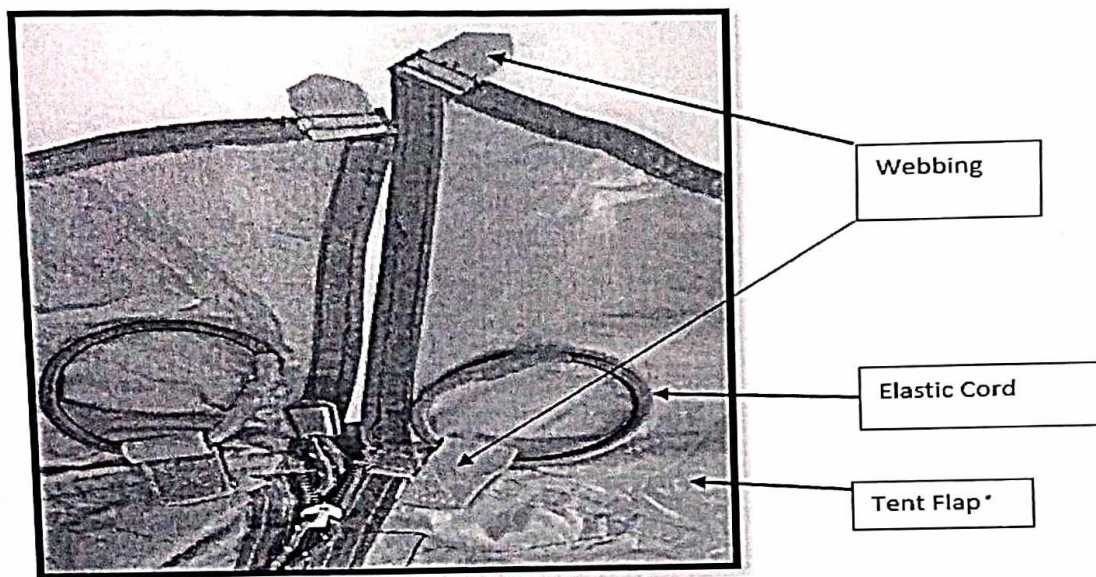


Fig 22: Slide fastener (Front Gate)



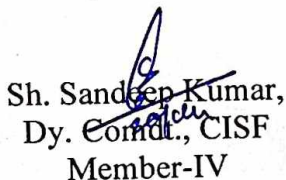
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Member-I





Sh. Manoj Singh Rawat,  
ADG, HQ Western  
Command, ITBPF,  
Chairman


## Trial directive of Alpine Tent:-

1. Pitching trial should be conducted.
2. Colour test .
3. Water proof test.
4. No manufacturing error..
5. Metallic part intact.
6. The vendor shall provide test report along with Alpine Tent as per the buyer requirement. The test report shall be from Govt. approved laboratories like NITRA and others.
7. Undertaking by the Suppliers that it fulfils all the QR requirements .

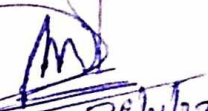
  
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