Light Weight Emergency Tent (LWET)

Specification and requirements

1. General Condition

1.1 The maximum weight of the tent is 42 kg (± 5%) included inner and outer shells, 6 rods, 18 pegs (12 larges and 6 mediums), 1 hammer (0.8 kg) and packaging.

1.2 The outer shell, the inner tent and all the accessories bags shall be packed in one single bag made out of the outer shell material with two carrying handles (the bag of rods must be packed in the centre of the bundle). The bag will be in a strong transparent polyethylene and covered with Polyethylene bag. It will have two plastic straps to hold it together.

1.3 Assembling instructions of the tent made with laminated A4 paper must be included on top of each packaging.

1.4 Marking of NDRF INDIA logo (50 cm x 15 cm) to be printedin blue indelible ink on one side of the single bag

1.5 Marking of NDRF INDIA logo to be printed in blue indelible in, colour Pantone N°PMS 300C included Purchase Number, Project symbol, Consignee and Content (60 cm x 40 cm) on one side of the polyethylene bag

1.6 The craftsmanship on this product needs to be of highest quality.

2. Outer Shell

2.1 Woven polyester of rip stop weaves of single piece i.e. with no cut pieces being joined.

2.2 Basic weight 170 -190 grams / m^2.

2.3 The outer shell is of white colour (Pantone N° 11-0602 TPX) from out sides.

2.4 Free of weaving defects that would have a negative effect on strength, waterproof quality and durability.

2.5 Able to withstand a minimum of 3000 mm of static water column.

2.6 Outer shell must have a UV resistance of a minimum of 2000 hours of exposures.

2.7 Outer shell must have fire resistance according to CPAI-84 1955 standards / section 6.

2.8 5 sleeves continuous and integrated of 4 cm width with no breaks (for the ease of rod insertion) to house the tension rods for holding the outer shell and from which the inner tent would be suspended.

2.9 All seams to be double-locked stitched, and supported with anti-leak/anti-seepage water taping. The supplier will ensure that the stitch count and thread used for all parts of the tent are appropriate for the material and will produce strong, long lasting (both on the shelf and in use) and that these of highest degree of craftsmanship. Low quality workmanship on any point is categorically unacceptable.

2.10 Strong and rot-proof ground of 10 reinforcement patches located at the ends of sleeves around the perimeter of the tent (5 on each side) with a metallic triangle. End of rods will be inserted in the hole and fixed to the ground.

2.11 The outer shell should have 10 triangular reinforcements at each pegging point to avoid tearing of the material. The reinforcement triangle must be made of the same material as the outer shell.

(NDRF) (NDRF)

19/4 19/4 DIG (Prov.) 18.4

CO 1st BN Nominee of FA Rep. of DDMA

CO 3rd BN CO- 7th Bn CO 6th BN

2.12 A polyester strap with an average width of between 35 to 40 mm and strength to carrying 100 Kg loading, rot-proof equipped with a metallic triangle and a metallic buckle at one side of the tension rod to hold both ends of tension rod at a distance of 3.00 meters from one another.

2.13 The outer shell at each end of the tension rods should be connected with the strap in order to avoid twisting.

2.14 Four windows (two on each long side) with a size of 40 cm x 30 cm each, located at 1m from the ground, covered with mosquito (ASTM Mesh 18) which is used for strength and ventilation. The covered flap must be equipped with Velcro all around the perimeter. The windows should be able to be rolled up and fixed up with toggles. Windows must be located on alternate panels on the two sides and not directly facing each other.

2.15 Four integrated ventilation flap openings with mosquito net (ASTM Mesh 18) of minimum aperture covered with a triangle ring hood (base 30cm, height 40 cm). The size of each ventilation opening shall be 20 cm x 15 cm. A Velcro strip must be sewed on the edge of the flap and on the outer shell to be able to keep it closed. In addition for the ventilation mechanism, one reinforced opening strip with outer shell material and PVC strip (width of 2 to 3 cm, length 12 cm) must be sewed in the centre of the edge on the outer shell. The other edge will have a Velcro strip that will allow the hood to stay open .

2.16 A total of 14 mechanisms of guy ropes are well stitched to the outer shell. Three are placed on each side and four at either end of the outer shell. Each guy ropes to the outer shell should be quadruple fold in triangular shape with the same material as outer shell, with a base of 23 cm and sides of 21 and 11 cm connected to both sides of the sleeve holding the tension rods reinforced in the end with a 4 cm polyester webbing with the strength to carry 100 kg equipped with anti-rust metallic triangle and knot the side rope . In addition each mechanism will have one reinforced eyelet with an internal diameter of minimum 10 millimetres. The location of the connecting mechanism is at 110 cm from the ground level for 10 side ropes (6 time on side + 4 time on edge) and 170 cm from the ground level for 4 side ropes in the end of the tents . Ventilation is placed at 140 cm from the ground level. Windows is placed at 100 cm from the ground level to the lintel position of the window .

2.17 The outer shell should have a connecting toggle under each tension rod at 26.36 cm (axis to axis) so that the inner shell can be hung from it. The 21 connecting toggles on the outer shell are made of quadruple straps made from outer tent material and equipped with an anti-rust metallic ring in the end. The inner shell connection is made with double polyester webbing (minimum width of 2 cm) with a toggle in the end. One single connection should be strong enough to carry or withstand a loading of 10kg. Webbing and tent material, as shown in the pictures should be the only connector fabrics used. Care should be exercised that the stitches are strong enough to withstand the required loading at a regular distance of 15 cm.

DG (NDRF)

2.18 One chimney outlet of 12 cm in diameter made out of fire resistant Fibre Glass fabric to with stand heat up to 500 degree centigrade (BS 476/7:1971 Class1). The hole should be able to be closed tightly to avoid rain and moisture infiltration when heating of the tent is not required.

IG (NDRF)

CO-3rd Bn

CO-4th Bn

CO-6th Bn

CO-5th Bn

DIG (Prov.)

Nominee of FA

Rep. of DDMA

The outlet should be wider towards the bottom to reach a diameter of 30 cm where it will be stitched to the tent. It would be located in theend section 60 cm from the end of tent and located on the side of the tent. The bottom of the hole would be about 140 cm from the ground covered with the same material as the outer shell and covered (60cm X 60cm) with Velcro, similar to the way the windows are covered. This is to prevent any water infiltration when stove is not used. The seam on the upper part should be treated with water sealant, as all other seams being. The outlet will also have a removable cover from the inner tent.

2.19 Markings to be printed in blue indelible ink (Pantone N° PMS 300C) on both sides of the tent and on top of the tent (to be positioned horizontally) for maximum visibility. The width of marking must be 120 cm and the height proportionate to the width without any distortion of the logo and letterings (approximately 35 cm).

3. Inner shell

3.1 The inner tent is the same shape as the outer shell but 30 cm narrower leaving a minimum of 15 cm gap (all around) between the outer shell and inner tent. The useable floor area of maximum 14.85 m^2[5.50m x (3.00 - (0.15 + 0.15) m]. The height would be of maximum 1.95m (2.10m - 0.15 m).

3.2 Made of breathable (Less material from a blend of polyester and cotton 65/35 or 55/45.

3.3 Basic weight of 140 – 160 gram/m2, Rip stops weave and fire retardant.

3.4 The inner tent shall be blue in colour with Pantone reference N° 17-4023 TPX

3.5 All seams shall be double stitched.

3.6 Two strips made of double polyester webbing (width of 4 cm) with eyelet in the end must be well stitched with reinforcement in order to properly tighten the ground floor sheet with two pegs in front of each door.

3.7 One integrated door on either end of the inner shell (total two doors) with mosquito net type ASTM Mesh 7 and zipper of No. 10 (9mm) moulded plastic with double pull slider opening upwards with a back up of button . The doors shall have a height of 165 cm and a width of 100 cm having a 20 cm threshold to prevent insects and water to enter the tent made of same material as the ground sheet. The mosquito net should be of with fine mesh type (ASTM Mesh 7) and equipped with zippers No. 10 moulded plastic with double pull slider on both sides and Velcro on the bottom to prevent mosquitoes to enter the tent. A dart or fold (i.e. a piece of excess material) must be included in both the door and mosquito net to reduce the stress on the zippers. The closing system to roll up the doors and the mosquito net should be fixed on top and made with 4 toggles and 4 straps and rings on each opening side.

3.8 Outer and inner tent mosquito net (doors, windows and ventilations openings) must be long lasting insecticide treated in accordance withthe WHO standards.

WHO recommended insecticides for treatment of mosquito nets for malaria vector control.

INSECTICIDE	FORMULATION[1]	DOSAGE[2]
Alpha-cypermethrin	SC 10%	20-40
Cyfluthrin	EW 5%	50
Deltamethrin	SC 1% and WT 25%[3]	15-25
Etofenprox	EW 10%[3]	200
Permethrin	EC 10%	200-500

1. SC= suspension concentrate; EW=emulsion, oil in water; WT=water dispersible tablet; EC: emulsifiable concentrate.
2. Milligrams of active ingredient per square meterof netting

3.9 The front and back of the inner tent (including the doors) should be double folded; outer fold is made from the same material of outer shell and inner fold is made from same material of inner tent. This double fold shall continue to cover the both ends of inner tent towards the middle for 80 cm deep as well. These provisions increase the durability of the tent, provide cooler temperature and increased resistance to rain accepting the slight increase in the weight.

3.10 The ground sheeting shall be of dark blue in colour Pantone reference N° 17-4023 TPX. It is made of woven high density polyethylene fibbers; warp x weft: 12/14 x 12/14 per square inch, laminated on both sides with low density polyethylene; Material weight: minimum 200 gr/m2 +/- 5%; Tensile strength: minimum 600 N both directions. Tear resistance: minimum 100 N both directions. Water proof: to withstand 2000 mm water column. Stitching: All seams should be treated with anti-leak/anti-seepage water sealant/tape. The stitching of the ground sheet to the inner tentshould be about 20cm above the ground level to ensure better resistance to water infiltration. 14 polyester webbing must be well stitched with reinforcement (1 in each corner, 3 on each side and 2 on each edge) in the line with the tension rods and pegs.

3.11 Inner shell shall be supported by the outer shell (hung from the outer shell). All rings shall be of rust resistant material. The inner shell shall have a connecting mechanism under each tension rod 23 cm apart from each other. (Total of 21 mechanism for each rod). Care should be exercised that the stitches are strong enough to withstand the loading. Distance between the outer shell and the inner tentmust be 15 cm minimum.

3.12 The connection at each ends of the tension rods must have an adjustable buckle as shown in the.

3.13 Four integrated windows for ventilation (in line with the outer shell window) with mosquito net type ASTM Mesh 7 and fully covered with the same material equipped with Velcro, to be rolled up (hold-up with toggle and strap with ring). The windows shall have a height of 30 cm and a width of 40 cm.

3.14 Four integrated ventilation openings at the top (two on each side) to be aligned to the ventilation opening hood of the outer shell (with no cover).

3.15 The inner shell should be partitioned in the middle dividing the tent into two twin sections of 2.75m X 2.76m = 7.59 m^2.

3.16 The partitioning consists of two sections, which will be stitched to the inner tent with 40 cm overlapping in the middle equipped with 4 tie straps and toggles on both side. The partition can be rolled back to the sides with tie strap and toggle to hold it on both sides of the tent. The material is the same as inner tent, and must not be of transparent material.

3.17 The inner tent will have a canopy of 150 cm stitched across the top and coming out from the tent a distance of 100 cm on the both ends of the inner tent. The canopy, which is of the same material as the outer tent, is stitched to the upper ends of the inner tent and equipped with two eyelets (1 in each corner) to be able to tie it with a guy rope to the existing pegs. The tightening system with toggle and tie strap must also be fixed on top of the canopy to be able to be rolled up when not in use.

DG (NDRF)

IG (NDRF)

Rep. of DDMA

Nominee of FA

DIG (Prov.)

3.18 A pocket of transparent plastic for inserting an A4 paper in landscape to be fixed to both ends of the inner tent on the left side of the door. This should be close to the edge of the tent and 1.00 m from the ground taped with water sealing tape.

4. Support system

4.1 6 tension rods should be of solid fibre glass reinforced with black PVC wrapper, with odd number of tubular sleeves or internal rod connector pins. The diameter of the rod must be at minimum of 20 mm (17mm of fibre glass and 2 x 1.5mm of PVC wrapper). The rods should be "shock-corded" (having a cord inside the rod). The joints shall be easy to assemble and should be sufficiently reinforced to avoid any possible breakage. One rod is composed of 9 sections of 68 cm (Total length 580 cm). Each section fit together at a minimum of 4 cm in the connector pins.

4.2 The ends of the tension rods are anchored to the ground with aluminium or brass eyelet in the strap connecting the both sides of tension rod in place, the metallic ends of the tension rods must be at minimum 5.0 cm long at each end to ensure better fixation of the frame to the strap and to the ground.

5. Side and Guy Ropes

5.1 Guy ropes should be made of polyester fibre (multi-braided type), having a diameter of 6 mm and length of 3.00 meters for the side ropes and the canopy and a length of 3.50 meters for the other guy ropes that are attached to the upper part of either end of the tent. The strength of the guy ropes should not be less than 250 Kg. **Guy ropes should have a UV resistance of a minimum of 2000 hours of exposure**s.

5.2 Six guy ropes on each end of the tent and three on each long side of the outer shell hence gives a total of 18 guy ropes to be able to erect the tent. In addition 1 spare of 3.00 meters and one spare of 3.50 meters must also be provided that will raise a total number of 20 guy ropes. All ropes are equipped witha simple and light tightening mechanism. This mechanism must be made with a varnished hard wood (e.g. oak) with two holes as describe on the.

6. Pegs and Hammer

6.1 Pegs for the outer shell must be of corrugated (deformed) steel having a length 30 cm and diameter 12 mm, with provision of a smooth "U" shaped bend to hook and tie up the guy ropes and tapered in the other end. A total of 10 corrugated steel pegs for outer shell are required with 2 spares (total of 12 pegs). The pegs are tapered at one end to ensure easy anchoring into the ground and covered with simple coating of non rust paint.

DG (NDRF) 6.2 Pegs for tightening the ground sheet at the two entry door must be of corrugated (deformed) steel having a length 20 cm and diameter 8 mm, with provision of a smooth "U" shaped bend to hook and tie up the guy ropes and tapered in the other end. A total of 4 pegs are required with bin addition one spare (Total of 5 pegs). The pegs are tapered at one end to ensure easy anchoring into the ground and covered with simple coating of paint.

IG (NDRF) 6.3 A claw hammer with a minimum weight of 0.8 kg for hammering the pegs with a sufficient strong head to handle connection for pegs insertion must also be provided.

7. Shape Size and Construction

7.1 The tent is semi-circular or tunnel shaped with centre height of 210 cm, width of 300 cm and length of 550 cm.

CO-3rd Bn

CO-7th Bn

CO 1st BN

Nominee of FA

DIG (Prov.)

Rep. of DDMA

CO 6th BN

7.2 It consists of two full layers or double flies i.e.a water proof outer shell and an inner tent with 15 cm continuous distance between them.

7.3 The inner tent, which is with integrated flooring ("bathtub" ground sheeting), is hung from the outer shell and tight with 10 webbing in each end of rods. 4 additional pegs in front each doors will reinforced the stability of the ground sheet.

7.4 The outer shell acts as a pure "shell" and not as a"tent"

8. Table of Requirement

Ref	Item description	Test Method	Requirements	Tolerances
2. Outer Shell				
2.1	Woven polyester Rip Stop	EN 1049	Pass	Nil
2.2	Fabric weight	ISO 3801	170-190 g/m^2	Nil
2.3	Colour shade	ISO 105 J03	<ΔE 1,0	0,2
2.5	Waterproof (Hidrostatichead)	ISO 811	3000 mm	Nil
2.6	Tensile Strength after UV exposure (ISO 4892-3 Method 2)	ISO 12934	<50%	Nil
2.7	Fire Resistance	CPAI-84 / 6	Pass	Nil
2.12	Polyester strap Tensile Strength	ISO 13934	10,0Kg	±5%
2.16	Ropes Tensile Strength	IHTM	100,0 Kg	±5%
2.17	Connecting mechanism tensile strength	IHTM	10,0 Kg	±5%
3. Inner Shell (Upper)				
3.2	Fibre content	ISO 1833	PL 55 / CO 45	±3%
3.3	Fabric Weight	ISO 3801	140-160 g/m^2	±5%
	Fire Resistance	CPAI-84 / 6	Pass	Nil
3.4	Colour shade	ISO 105 J03	<ΔE 1,0	0,2
3. Inner Shell (Ground Sheet)				
3.10	Fibre content	GS-MS / FTIR	Polyethylen	Nil
	Waterproof (Hidrostatic head)	ISO 811	2000 m	Nil
3.11	Colour Shade	ISO 105 J03	<ΔE 1,0	±0,2
	Number of threads per Unit Length	ISO 7211/2-C	12÷14 / inch.	Nil
	Fire Resistant	CPAI-84 / 5	Pass	Nil
	Fabric weigth	ISO 3801	200 g/m^2	±5%
	Tensile strength	ISO 5081	600 N	±5%
	Tear strength	ISO 4674-A2	100 N	±5%
5. Side and Guy Ropes				
5.1	Ropes Tensile Strength	ISO 13934	250,00 Kg	±5%

****

19/5
DG (NDRF)

IG (NDRF)

CO 3rd Bn

CO-6th Bn

CO/4th Bn

19/4
Nominee of FA

CO-1st Bn

19/4
DIG (Prov.)

Rep. of DDMA