

## REQUEST OF EXPRESSION OF INTEREST

1-17018/NDRR/1203/HQ NDRF/2017

Ministry of Home Affairs

Directorate General

National Disaster Response Force

Email: [dg.ndrf@nic.in](mailto:dg.ndrf@nic.in)

2<sup>nd</sup> Floor, Lok Nayak Bhawan  
'A' Wing Provisioning Directorate,  
Khan Market, New Delhi – 66

Dated, the 16 June, 2017

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No. I-17018/1203/NDRR/HQ NDRF/2017/675

Dated, the 15 June-2017

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It is to inform that National Disaster Response Force (NDRF) intends to procure various equipment/items on specification prepared a detailed BOOs which is attached as appendix-A to I.

2. All the interested vendors/manufacturers are hereby invited to submit their comments/ suggestion on the technical specifications of equipment/items mentioned in appendix-A to I to this HQ within 15 days from the date of issue of this expression of interest for further course of action

Encl: as above.

*Ritesh Dwivedi*  
15/6/17  
(Ritesh Dwivedi)  
Dy. Comdt. (R&D.)  
*Dy. Commandant*  
(Procurement)  
HQ NDRF  
Directorate General (NDRF)  
Ministry of Home Affairs  
New Delhi

Copy to:  
IT Cell, HQ NDRF for needful action please



Tent Arctic medium with accessories

Arctic Tents should be able to withstand extreme cold, and set up quickly and easily.

**FEATURES:**

- Tent arctic medium should be available in 10-Man and 14-Man Models.
- It should be easy to set up in minutes with minimal personnel.
- Should easily be packed on to an Ahkio Sled for transport during arctic weather conditions.
- The fabric of tent arctic medium should be fire retardant, mildew resistant, water repellent, abrasion and UV resistant. The exterior fabric includes blackout in the visual and near infrared spectrum. The liner should be made from 5.2 ounces of permeable cotton sheeting that helps to insulate the tent.
- Removable floor should be made from a heavy duty polyester material to provide a barrier against insects and vermin, abrasion and ground moisture.
- There should be two doors on opposite sides and four built-in ventilators to provide air flow. The ventilators should have inside ducts and fixed hoods that extend out from the ventilator openings. The inside ducts on the ventilators may be closed by tie cords.
- Supports the Army's Family of Space Heaters (FOSH), specifically, the Space Heater Arctic (NSN: 452001478927), and Space Heater Small (NSN: 452001478927). May also be heated by a Yukon Stove.

Snow cloths (flaps) should be sewn to the bottom of each side of the tent. When the tent is erected, the snow cloths sit flat on the ground outside of the tent. Snow or weight can then be placed on top of the snow cloths to assist in the insulation and staking of the tent.

1. Stovepipe opening	6. Tent line, corner	11. Zipper
2. Telescopic tent pole	7. Tent line, corner eave	12. Tie tape
3. Ventilator	8. Footstep	13. Tent line, door eave
4. Tent line, eave	9. Velcro	14. Snow cloth
5. Tent stake	10. Clips	15. Tent slip

*AKW/ewb*  
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		Medium 10-Man	Large 14-Mane
Height (peak)	Ft..	8.5	9.6
	m.	2.6	2.9
Height (Eave)	Ft..	03	03
	M	0.9	0.9
Length (on each side)	Ft.	8.75	10.2
	m.	2.7	3.1
Weight (hexagonal floor diameter)	Ft..	17.5	20.2
	m.	5.3	6.2
Weight (Tent and Liner)	Lbs.	68	122
	Kg.	30.1	55.3
Weight (Pins and Pole)	Lbs.	08	08
	Kg.	3.6	3.6
Packed Volume	Cu. ft.	7.1	7.1
	Cu. m.	0.2	0.2
Usable Area	Sq. ft.	198.9	260
	Sq. m	18.5	24.0

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Tarpaulin (HDPE) with eyelets (4 x 4 Mtrs)

1) Tarpaulins should be made from HDPE Woven Fabric-

Following requirements should be applicable for this item.

- The size of ground sheet should be 4X4 Mtrs.
- Sheet should be fully waterproof.
- Sheet should be extra strong and robust.
- It should be Ideal for camping, caravanning or use as a tarpaulin.
- Lashing ropes should be of 12 mm Dia. & 1.5 m. length as per IS:4572:1992, Amdts-1 (Third Rev.)
- Metallic eyelets should be as per specification no. IS: 4084-1978, Amdt-1 to 3. Eyelets should be fixed at an interval of about 150 cms on all sides. Only one eyelet should be used at corners and should be fitted in a row with the other eyelets. For tarpaulins of above 15.0 sqmtrs in size reinforcement triangular pieces should be provided for the eyelets. The triangular piece should be made of 20x20 cms piece folded along one diagonal. Each of these triangular pieces should be inserted under each eyelet under the double turning, the folded edge of the strengthening piece being in line with the outer edge of the hem when finished. The centre of the eyelet should be at a distance of 3 cms from outer edge of the hem.
- The panels should be flat (lap) Joint. The ends & sides of the tarpaulin should be hammed by lock type double stitch.
- Sewing thread should be HDPE tape/yarn similar material of linear density 66.6 tex to specification no. IS: 6192:1994.
- Tarpaulin, having mass per square mtr of 343 gms, should be manufactured from two layers of HDPE woven fabric. Basic HDPE woven fabric used for lamination should conform to V. No.-5 of IS 6899/1997, (i.e having mass of 130gms per sqrmtr.) Tarpaulin, having mass per square mtr of 250 gms and 500 gms, should be manufactured from two layers of HDPE woven fabric. Tarpaulin, having mass per square mtr of 200 gms should be manufactured from one layer of HDPE woven fabric.
- Packing: should be available with free carry bag. Each tarpaulin should be suitably folded and packed with layer of hessian 229 gsm to IS 2818-1971 Part 2, amds-4, followed by an intermediate layer of polyethylene film of 0.038 mm thickness followed by an outer layer of hessian 305 gsm confirming to IS:2818 – 1971 Part 2, amds-4. The four corners of the packing should be tied to keep at least 15 cm ears for easy handling.
- Tarpaulin (HDPE) should be Rot proof.

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*Received  
15/8/17*  
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## **SPECIFICATIONS FOR SHEETING WORK IN ROOF AND SIDE CLADDING**

### **MATERIAL**

The pre coated Galvanized sheets/profiles should be as per the specifications given below:

- 1) Steel specification : Cold rolled as per IS: 513 or BS 1449.
- 2) Galavanisation : As per IS: 277 or BS: 2989 with minimum zinc deposition 120 gms/Sq. M.
- 3) Pre – treatment : Rinsing, brushing, degreasing, Phosphating, grain refining, Bond rising, rinsing, followed by drying.
- 4) Epoxy Primer : Minimum 7 microns DFT.
- 5) Alkyd backer : Minimum 7 Microns DFT.
- 6) Polyester top coat : Minimum 16 microns.
- 7) Total coating thickness : 30 microns.
- 8) Scratch resistance : 1500 gm as per IS: 101.
- 9) Bend Test : 2T
- 10) Corrugation : Type N-38-190 of polysteel Nippon Denro or equivalent.

11) All corner flashing, ridge, trim etc., should be made of 0.6 mm thick pre-coated sheets.

### **WORKMANSHIP**

Should be according to best construction practice to give a watertight finish to the satisfaction. Fixing of gutters and down pipes should be according to IS: 2527.

#### **a. C.G.I. SHEETING**

Side laps should be 2 corrugations for roof and one corrugation for side sheeting. End laps should be minimum 150mm for roof and 100mm for side sheeting. In ridges and hips where plain sheets are used, the end laps should be minimum 100 mm. Holes in C.G.I. sheets should preferably be made on the ground, the sheets should be placed on trestles and holes punched in the ridge of the corrugation from the outside inward for obtaining proper seating of limpet washers. Sheets should be secured to sheet framing by 8mm dia. Galvanized iron hooks or J-bolts should be provided to hold it maximum 305 mm apart. The length of the hook or J-bolts should be to suit the sections of the bearers. Sheets should also be bolted at the ends at ever third corrugation with 6mm dia. Galvanized iron seam bolts and G.I. flat washers and bituminous washers.



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**b. ASBESTOS SHEETING**

Asbestos sheets of profiles as stated in the drawing, should be fixed with minimum 150mm end lap and side laps as per manufacturer's specification. Hook bolts or J-bolts should be 8mm dia. At 305 center. 6mm dia. Galvanized iron seam bolt and nut with G.I. flat washers and bitumen washers should be used for stitching ridge capping, corner pieces, ventilators, north light curves, etc.

**c. PRECOATED GALVANIZED STEEL SHEETS/PROFILE**

Side laps should be 2 corrugations for roof and one corrugation for side sheeting. End laps should be minimum 150mm for roof and 100mm for side sheeting. In ridges and hips where plain sheets are used, the end laps should be minimum 100mm. Sheets should be secured to sheet framing by 8mm dia. Galvanized polymer coated hooks or J-bolts with polymer washer with protruded seat, galvanized nut and polymer cap for nut. The length of the hook or J-bolts should be to suit the sections of the bearers. Searn bolts at side laps should be used for effective prevention of leakage of rain water. Manufacturer's recommendation should be followed for proper laying and fixing to ensure elimination of leakage.

**d. FIBRE GLASS REINFORCED PLASTIC SHEETING**

These should be thickness and profile as mentioned in the drawing. Colour and light transmittance should be as mentioned on drawings and or schedules. Where used in conjunction with C.G.I. or asbestos sheeting, the end and side laps and fixing device should be same as used for general sheeting. Where used in lieu of glass the fixing should be by means of timer or metal glazing beads as mentioned in drawing. In all cases, the installation should be completely watertight and able to withstand the designed wind-pressure.

**3. ACCEPTANC CRITERIA**

The installation should present a neat appearance and should be checked for water tightness. The following should be checked:

- a. Side and end laps.
- b. Absence of cracks, holes or damages in sheet.
- c. Spacing of bolts.
- d. Provision of double washers (G.I. Asbestos, Polymer or bituminous washers.)
- e. Proper installation of flashing, trims etc.

**4. STORAGE OF MATERIALS**

All materials should be stored by the Contractor in proper way to prevent any damage. If issued at site by the Employer, the Contractor should at the time of issue, satisfy himself about the condition of issued sheets, gutters, etc., and no complaints should be entertained later.

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Specification of Poles/Ballies, Nails, RopeSpecification of Poles/Ballies

## REQUIREMENTS

- BALLIES should be air-dried to a moisture content not exceeding 20 percent within a depth of 12 mm from the surface when measured at one third length of the BALLIES from its butt end.
- BALLIES should be reasonably straight, and should be free from cuts across the grain, live insect attack, any kind of decay (rot), pronounced spiral or twisted grain, hollow heart and dead knots exceeding 5 cm in diameter.

## PERMISSIBLE DEFECTS

- Surface Cracks – These should not exceed 20 mm in depth and 3 mm in width for Class 1 BALLIES, and not exceed 12 mm in depth and 3 mm in width for Classes 2 and 3 BALLIES provided they are not so numerous or so located as to impair the usefulness of the BALLIES.
- End Cracks – The longest end crack at each end should be measured and the lengths added together. The total length of the longest cracks should not exceed 30 cm irrespective of the length of the BALLIE.
- Spiral or Twisted Grain – There should not be more than one complete twist of grain or spiral in any 6 In of length.
- Curvature – BALLIES should be so straight that when laid horizontally in any position, the centerline joining the apex and base should not deviate from the actual axis of the BALLIES by more than 7.5 cm.
- Short Crooks – These should not exceed two in number per BALLIE.
- Pin Hole (Dead Infestation) – These should be scattered and not concentrated, provided they are not due to powder post beetles.

## MEASUREMENTS

- Length – The length should be measured between the extreme ends of BALLIES. BALLIES should not be more than 7.5 cm shorter or more than 15 cm longer than the 'ordered' length.
- Diameter – The top and butt end diameters should be measured at the extreme ends of the BALLIES.

## MARKING

Each BALLIE should be legibly and indelibly marked with the following information at a distance of 2 m from the butt end of the BALLIE:

- species of timber by symbol (BOTANICAL NAME),
- Class of BALLIE,
- Supplier's name or initials or registered trade-mark, if any.

Specification of NailsNails Flat headed Assorted (kgs) 1"x2"

(a) Size & Material : 10 no nails of size 3" (mixed), made of iron  
 (b) Application : To join wooden members

Nails Flat headed Assorted (kgs) 3"x4"

(c) Size & Material : 14 no nails of size 1", 2" (mixed), made of iron  
 (d) Application : To join wooden members



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 Date: 01/01/2023

Specification for Water Purification System

1. **General:** Compact, Wall mountable, sleek water purification system for Ultra – Pure Type-I water for molecular biology application.
2. **Quality of water:** Should deliver Type I/Ultra –pure as per International specifications as follows: Resistively: 18.2 MΩcm; TOC (typical):<5ppb; Bacteria:< 1CFU/10 ml ; Endotoxin:<0.001 Eu/MI. RNase: 20pg/ml.  
Important : Should have an ability to deliver Type III water also
3. Volume: 10-12 litre/day.
4. Feed –water: Potable tap water
5. General Essential Features:
  - (i) Preferably should start giving pure water immediately after start.
  - (ii) Should have built in RO, Dual Wavelength UV lamp, Purification pack or DI cartridge.
  - (iii) Should have built-in integral tank with minimum 5-7 liter capacity.
  - (iv) Facility to attach external point of use bio filter or any such filter to control endotoxin. Dispenser: Should have a flexible handle dispenser, preferably, with a facility of :-
    - a. Variable flow drop by drop up to 2 litre per minute.
    - b. Locked dispense for glassware filling.
    - c. Auto volume dispense from 50ml to 60 litres.
- Display: TOC TEMPERATURE, conductivity, volume dispensing, alarm and tank water level indicator.
6. Other important features:- Sanitization facility to avoid contamination:-
  - (i) Facility of intermittent water recirculation to avoid contamination build – up.
  - (ii) USB Port to capture data.
7. Accessories:-
  - (i) UPS/Stabilizer/CVT as required for functioning of the equipment
  - (ii) All cartridges, filters, pump or any such item which is/ are essential for Installation and functioning/operating the equipment.
8. Consumable: Must Quote separately for consumables (cartridges, filters etc.) for ONE YEAR for trouble free working.
9. Warranty: For TWO years guarantee plus warranty for at least three years.
10. List of User: Must include a list of user of the same model of the equipment along with valid email ID and phone no and other contact details. In case the list is NOT provided or incomplete, the quotation will NOT be considered for technical/price comparison.

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**TECHNICAL SPECIFICATION: FOGGING MACHINE**

The fogging machine should have the following features:—

- 1) Light weight, portable & extremely user friendly.
- 2) It should be equipped with superior quality VAC motors, non-rotating vortex design nozzle assembly & precision flow metering valves.
- 3) Machine should be highly versatile & ideal equipment to dispense wide range of chemical solutions like disinfectants, fungicides, germicides etc.
- 4) Power supply 220V AC, 50 or 60 HZ 5- It should have rugged design power head housing & 5 litre chemical solution tank from corrosion resistant HDPE plastic.
- 5) Size of aerosol should be submicron.
- 6) Nozzle assembly should be Non-clogging design-Stainless Steel needle non reactive Eng. Plastic.
- 7) Can treat 15000 cuft or larger space within few minutes.
- 8) It should spread to 50 ft. distance and reach to 25 ft. height.
- 9) Auto switch off timer in separate box 0 to 60 minutes.
- 10) Silicon tubing complies to FDA and USP class VI.
- 11) Machine should be CE certified and SSI registered
- 12) It should have rugged design power head housing & litre chemical solution tank from corrosion resistant HDPE plastic.

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SPECIFICATIONS OF PONTOON

The Floating Multi- purpose water equipment/ pontoon along with other accessories should have the following features:

1. Size of each module should be 500 mm x 500mm x 400mm (L\*W\*H\*)
2. Weight of each Module should not be more than 8.5 kg
3. Weight carrying capacity should be 350 Kg per Sq. M. $\pm$ 2%
4. Raw material of module should be High density polyethylene (HDPE) 5261Z Grade Raw material or equivalent.
5. The thickness of the material should be 22 mm or better.
6. Lug thickness should be 22 mm to ensure sufficient strength to the structure. The quality of the lug should be of similar material.
7. Barrier railings should be Stainless Steel and the dimension is not less Length: 2 Mtr, Height: 1.1 Mtrs, and the dia of pipe should be 45 Mm
8. **Following Items should be provided along with pontoons.**

Srl No	Name of Items
(a)	Floating jetty with standard accessories like connection pins, side nuts distance discs, boat cleats, fenders etc.
(b)	OBM Bracket.
(c)	HDPE box for anchor holder.
(d)	Tow hooks & eye bolt for lashing.
(e)	Gates for pontoon to be provided.
(f)	Anchoring equipment like ropes, shackles and heavy duty anchors.
(g)	Barrier railing to be provided all around for fall protection. As per the size of the pontoon jetty.

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**Specification of Flexible barrel/bigger Tent 15M X6M**

**General:** Half barrel-shaped metal-framed shelter, Suitable for accommodation, dining, catering, recreation, or office purposes.

1. The materials should be UV –proof, waterproof, rot-proof and fire retardant.
2. Roof/wall cover should be in single piece, fully welded and waterproof.
3. PVC covers should in orange colour or as desired at the time of demand.
4. Base fabric should be 510 gsm, polyester 1000dtex and Threads per cm 7.1 inch x 7.1 inch.
5. Tear resistance should be 300/300 N.
6. Materials should be flame resistant and approved in accordance to B1/M2 Din 4102/NF P 92.503.
7. Materials should be Temperature resistance in the range of -30 to ~+70 °C.
8. The tent should have a tensile strength of 2300 / 2100 N/5cm.
9. Marking and logo customized to as per the requirements.
10. Tent should be Designed to withstand high winds up to 33 m/s (>120 km/h) and snow loads up to 90 kg/m2.
11. End walls should have a central soft door or an optional lockable hard door.
12. Four square windows should have on either side with clear screen covers and PVC storm flaps.

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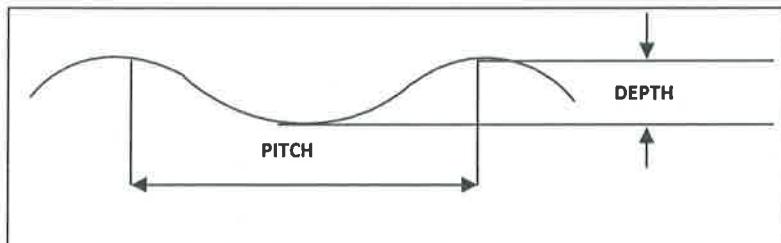
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## SPECIFICATIONS OF CGI SHEET

The pre coated Galvanized sheets should be as per the specifications given below: -

1. Steel specification should be cold rolled as per IS: 513 or BS 1449.
2. Zinc Coating should be Hot dip galvanization with minimum  $120 \text{ g/m}^2$  zinc on each side of sheet or as per IS : 277 or BS : 2989
3. Total coating thickness should be 30 microns.
4. Nominal Depth of Corrugation should be 18 mm (Tolerance  $+\text{-}1.5 \text{ mm}$ )
5. Nominal Pitch of Corrugation Should be 75 mm (Tolerance  $+\text{-}2 \text{ mm}$ )



6. No of corrugation should be 15
7. Minimum Thickness should be 0.60 mm
8. Width of Sheet should be 4 feet (Tolerance  $\pm 10 \text{ mm}$ )
9. Length of sheet should be 12 feet (Tolerance  $\pm 10 \text{ mm}$ )

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*[Signature]*  
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