

**QRs/SPECIFICATION OF HIGH ALTITUDE SHELTER**

**1.**

S/N	Feature	Requirement
1.	ENVIRONMENTAL CONDITION	Shelter should be deployable at an altitude of above 15000 Ft (4600 Mtr)
2.	WIND LOAD	Shelter should be able to withstand a wind load of $\geq 150$ km/h
3.	TEMPERATURE	Shelter should be able to operate in temperatures ranging from $-50^{\circ}\text{C}$ to $+40^{\circ}\text{C}$
4.	RAIN	<b>Equal to or More than 1 CM P/Hour.</b>
5.	SNOW LOAD	Equal to or more than 100 kg/sq. mtr. Load

**2. CONSTRUCTION**

S/N	Feature	Requirement
1.	DIMENSIONS	Dimensions of the shelter should be 6 m width 9m length and 3m height. (10% tolerance may be considered.) Shelter should also extendable.
2.	BASIC STRUCTURE	Shelter should have a corrosion resistant metal frame free-span type tent with no poles in the centre of the tent.
		Each piece of metal frame should be less than 5kg weight for easy transport and installation.
		The wall and roof structure of the high altitude shelter should be multilayered net insulating material.
		Shelter anchorage mechanism should be sturdy enough to withstand high velocity winds.
		Color of the shelter should match the surroundings to provide adequate camouflage.
3.	FOUNDATION	Shelter should have a stable anchorage system, sturdy enough to withstand high velocities.
		Anchorage system should be sufficient to be deployed in loose sandy base as well as rocky bases
4.	Wall structure	Shelter must include two zipper entrances, 1 per each end of the shelter of appropriate size. Minimum 1x2m.
		Shelter walls must include 10 window, Eight (8) on the main cover and two (2) on the end panel. Size of the windows to be minimum 70cm to 100cm.
		Walls must have a triple layer construction. Outer vinyl material, insulation panel and inner liner material, with a minimum thickness of 12mm.
		Material used in high altitude shelter should be fireproof.
5	Roof design	Shelter must include one piece cover design system.
		Roof should be arched and able to withstand snow load, wind load and rain load as mentioned in the specific requirement of the ITBP.
6	Floor Structure	Shelter should have a light weight, non-ship floor system, which should also be fire retardant.

### 3. HEATING

S/N	Feature	Requirement
1	Space heating	An ambient temperature of around 25° C should be maintained within the shelter.
		CO <sup>2</sup> build should be maintained at a safe limit.
		Adequate ECU/ HVAC/Heater ports and ducts should be include.
		Heater will be provided to maintain ambient temperature of 25°
		Adequate insulation should be provide.

### 4. ELECTRICAL SYSTEM

S/N	Feature	Requirement
1	ELECTRICAL CIRCUITING	All electrical circuiting and wiring should be made of material that should not crack when exposed to extreme cold conditions.
		Adequate circuit breakers should be provided to avoid failure of the electrical system.
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		Adequate lighting should be provided through shatter proof lamps or LED lights.
		Adequate plugs should be provided for using various electric gadgets like laptops. Chargers, etc.
		Certified power distribution box should be provided.
		Alternative power source may be considered.
		Additionally adequate power cables should be provided to connect to external power system.
		All electrical systems should be energy efficient.

### 5. OTHER FEATURES

S/N	Feature	Requirement
1	Additional features	Shelter should include proper ventilation and exhaust for fumes, Whenever cooking is done using kerosene.
		Adequate fire extinguishers should be provided.

### 6. PRODUCT AVAILABILITY AND SUPPORT

S/N	Feature	Requirement
1	Product support	Firm must provide after sales services, warrant availability of spars and parts.
2	Training	The manufacturer must provide onsite installation training to the designated personnel. The training should include complete knowledge of all operation. Detailed instruction booklet must also be provided in Hindi & English.
		All tools for the installation of the shelter should be provided to the end user.
3	Warranty	Shelter should have a 5 year warranty.

## 7. DOCUMENTATION & STANDARDIZATION

S/N	Feature	Requirement
1	General	The Product With all Its fitments and accessories should conform to various industry, certification and regulatory norm for a product meant of operation in high altitude >450m and temperatures form - 50° C to 40° C.

## 8. PACKAGING & MARKING

S/N	Feature	Requirement
1	General	Of high altitude center must be done in such a way that is its easy to carry men pack, mules & vehicles.
		Packaging material must be ruggedizing.
		Marking of each and every material should be done in such a way so that erecting and dismantling should be hassle-free.