

Technical specification of Mine protected Ambulance BLS/ALS

The Mine protected Ambulance, designed & manufacture by Vehicle factory, Jabalpur is a Mine Protected, 4x4 armored vehicle which is designed to provide emergency medical support to injured /traumatize personnel during operations. The vehicle is designed to accommodate injured /traumatize personnel in addition to driver, co- driver & paramedical staff (05 no's). Details technical features and specification of the vehicle is mentioned subsequently.

1. Design:

Mine protected Ambulance is based on Mine Protected Vehicle platform. Overall structure of ambulance version is same as Mine Protected Vehicle except crew cabin which is modified for fitment of medical equipment, stretcher and related accessories. Interior furnishing of Mine Protected Ambulance is of fire retardant type, heat insulated type. Detailed specification of Medical equipment and Interior furnishing is mentioned below-

1.1. **Technical specification of Medical Equipment-** Medical equipments are of two category Basic life support & Advance life support (BLS & ALS). Details of the equipment for both are mentioned below: -

Sr. no	Name of equipment(Basic life support)	QTY /veh	Make	Certification.
1.	Stretcher - with customized folding mechanism. Length: 6.2 ft(minimum) Width: 1.8 ft(minimum) Loading capacity: 150 kg(minimum). Material: M.S.	02	-	ARAI Type D Certification
2.	B type oxygen cylinder with regulator with 10 ltr. water capacity	02	-	IS:7285 and certified by Chief Controller of Explosives, Nagpur
3.	Oxygen delivery system (manual).	02	-	EU CE Certified
4.	Inverter- 1650VA 24 V pure sinewave	01	Luminous, Microtek, Voltas, V Guard	-
5.	04 no's of 230 V power sockets with RCCB of 30 mA.	01	-	-
6.	Automated external Defibrillator, battery operated, 200 joules capacity, min. 03 yrs. Warranty.	01	Philips, Zoll, Nihone Kodhen	ISO 60601-2-4
7.	Multipara monitor: indicating ECG, NIBP, SPO ₂ , Heart rate.	01	Philips, GE, BPL	ISO 60601-2-4
8.	Transfer sheet: Min. 06 handles for transportation , washable	02	-	EN 1865

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9.	Instrument tray, with all types of forceps, scissors, suture kit. Material-stainless steel.	01	-	-
10.	Scoop stretcher: Dimension(min)-165x40x5mm, weight(max)-10kg, material: Aluminum for light weight.	01	-	EN 1865
11.	Patients examination light: Min 1100 lux illumination.	02	-	-
12.	Manual suction machine: Handheld, weight(including all components)-400gms(max), polycarbonate or ABS material canister of min 300 ml capacity, Suction pressure- 400mm Hg (min), Flow rate-20 Ltr/Min (minimum),	01	-	FDA/EU CE Certified
13.	Ambu bag 02 nos (01 adult & 01 pediatric) with pocket mask, laryngoscope (adult & pediatric), cervical collar adjustable to all sizes, sterile glove-05 pairs, Digital thermometer, Emergency bag.	01	-	ISO 15001-2010/ EU CE Certified
14.	Pulse oximeter (fingertip type), battery operated, rotatable OLED screen. Indicating SPO ₂ , Heart rate,	02	-	ISO 9919
15.	Digital BP apparatus: Portable, Battery operated.	02	-	EU CE Certified
16.	Handheld glucometer with 50 strip & 100 lancets	01	-	EU CE Certified
17.	Installation & necessary brackets provision for hanging of intravenous fluid, curtains, fire extinguisher (02 nos) document folder, waste bin.	01	-	-
Additional items for ALS category				
1.	Defibrillator with AED, ECG.SPO ₂ ,NIBP,HR recorder.	01	Philips, Nihone Kodhen, Comen	ISO 60601-2-4
2.	Transport ventilator: Portable, weight(max)- 4kgs, compact design with pneumatic/turbine/piston technology.	01	Smiths, Dreager, Hersill	ISO 10651-3
3.	Electronic suction machine: Weight(max)-3 kgs, portable with battery backup, polycarbonate or ABS material canister of min 1000ml capacity, vacuum range- 50mm Hg(min) to 600mm Hg, Flow rate- 25-30 Ltr/Min.	01	Devil bliss, Spencer, Hersill	ISO 10079-1-1999

1.2. **Technical specification of Interior furnishing-** Mine Protected Ambulance is required to be fitted with Heat insulating, fire retardant interior upholstery. Firm will design, supply & do fitment of modular type interior furnishing panels for whole interiors of the vehicle including roof panels, AC ducting, Gear box cover along with engine cover within the cabin, fire wall. Total interior furnishing area approx. 25 sqm. Firm will also ensure the furnishing panels are designed and

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installed in such way that they provide Noise insulation in the cabin generated from power pack.

- a. Interior for Front side, Rear side, Side LH & RH shall be Aesthetic top of 1.2mm thick and lower side 10 mm FR grade foam.
- b. Roof Top interiors shall be aesthetic top of 1.2 mm thick & lower side 50 mm FR grade foam.
- c. Aesthetic top shall be light Ivory/Grey/Sand color meeting vehicle requirement.
- d. Foam shall be Green/Grey color meeting vehicle requirements.
- e. Interiors, Floor mat & insulation shall confirm to drawing provided.
- f. Aesthetic top & foam shall be defence Grade not industrial.
- g. Entire furnishing should be antifungal & washable.
- h. Rubber floor of 8 mm thick with diamond pattern chequered.
- i. Test certificates shall be provided for all material used for development of Mine Protected Ambulance as per technical requirements mentioned in para 1.2.1.
- j. Reports from NABL testing laboratory shall be provided for Aesthetic top & Foam for FR property confirming to IS: 15061-2002.
- k. Foam used shall provide effective noise control and thermal insulation.
- l. Fit & finish shall be of highest quality.
- m. Expert team from firm shall be deputed to VFJ for fitment of interiors.
- n. Tools req. for activity like fitment, trimming will be provided by firm.
- o. Required facility like water, electricity, compressed air etc. to be arranged by VFJ.
- p. During fitment proper care shall be taken to avoid any damages or strain marks on all other fittings.
- q. All safety precaution shall be taken by firm's team during working at VFJ.
- r. All material shall be displayed to VFJ rep, before fitment.

1.2.1. Properties of Aesthetic Top & Foam are as under: -

Sr. No.	Properties	Test Method	Unit	Std. Req.
1	Color	--	--	Sand(RAL 7031)
2	Standard Length (+30,-10)	--	mm	2000
3	Standard Width (+20,-10)	--	mm	1000
4	Standard Finish Thickness (+- 1.0)	--	mm	12
5	Density (+-5)	ASTM D 3575	Kg/m ³	35
6	Hardness (+-3)	ASTM D 2240	Shore "A"	8
7	Compression Strength @25 % deflection	ASTM D 3575	Kg/cm ²	>0.22
8	Compression Set @ 50% deflection	ASTM D 3575	%	<22
9	Elongation@ break	ASTM D 3575	%	>100
10	Tensile strength @ break	ASTM D 3575	Kg/cm ²	>2.5

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Note: Since furnishing panels are cut to size/molded type and entire furnishing work will be done at VFJ premises from the raw panels by the firm reps hence no separate drawing of MPV vehicle will be shared. However firm reps may visit VFJ, for any specific information before submission of bids.

2. Scope of work: -

- 2.1. **VFJ-** Will provide Mine protected Vehicle base platform will all automotive system fitted.
- 2.2. **Technology partner/firm** - Will be responsible for installation of Interior furnishing as per specification mentioned in para 1.2 and installation/commissioning of Medical equipments as per technical specification mentioned in para-1.1. Firm will also give demonstration of all medical equipment's to VFJ reps. Firm will also provide basic training to VFJ reps for operation/functioning of all medical equipment.
If required by VFJ, Firm will also associate with VFJ reps for field demonstration of the vehicle.

3. Acceptance criteria: -

- 3.1. Inspection will be conducted at VFJ by authorized rep of CGM/VFJ.
- 3.2. **Certificates:** -Test certificates for Interior furnishing material as per details mentioned in para 1.2 &for medical equipment as mentioned in para 1.1will be submitted by the firm.
- 3.3. **Warranty:** -For furnishing material, firm will submit warranty certificate that all materials used will retain their properties (fire retardant, noise insulating, etc.) for 03 years. For medical equipments (as mentioned in table at para 1.1), firm will submit warranty certificate for 03 years. Firm will replace, free of cost, the equipment during this period if the equipment's is/are not working without having suffered mechanical damage. For the purpose of warranty, date of acceptance material at VFJ will be considered as reference.
- 3.4. Advance sample (A4 size) will be provided for panels, insulating material along with test certificates, by the firm, before commencement of work.
- 3.5. Firm will mention the MAKE for all medical items supplied against this specification.

4. Terms &condition: -

- 4.1. **Prior experience:** Technology partner should have at least 03-year exp. & should have successfully executed similar work (installation of medical equipment & interior furnishing) on Armored/logistic vehicles similar. Firm will submit relevant certificates (S.O/ Job completion certificates etc.) to this effect along with Technical bid.
- 4.2. **Non-Disclosure Agreement (NDA):** Design of Mine Protected Vehicle and Mine protected Ambulance is proprietary of VFJ. Firm will ensure that no

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design/details/feature of the vehicle, that firm will be privy of, during the course of development of vehicle, will be shared to any outside agency, in any form, at any point of time. Firm will provide a Non-Disclosure Agreement (NDA) to this effect.

- 4.3. **Payment terms:** Payment will be made after issue of Job Completion Certificate(JCC) by the user section of VFJ provided firm has submitted all technical and commercial documents as mentioned in the specification.
- 4.4. Team of the firm shall be deputed at the VFJ for carrying out above work. Tools req. for activity like fitment, trimming will be brought by the firms on returnable basis.
- 4.5. Firm will ensure that no damage to the vehicle is done during the course of work while their reps are working on the vehicle.
- 4.6. Firm will be responsible as per govt. law for safety precaution, labor laws, other applicable laws & will be liable for the safety for its personnel & VFJ property during working at VFJ.
- 4.7. Facility like electricity, water, pneumatic supply will be arranged by VFJ.


DD/RD&BDU


HOS/RD&BDU


JWM/MPV