

- 13.16 Crab-reels and non slip steps shall be provided wherever required to assist the crew to mount and dismount and to give access to the roof of the appliance.
- 13.17 No part of the body work shall reduce the road clearance to less than 230mm or increase the width of the vehicle to more than 2.5 m. there shall be sufficient clearance in wheel arches and wings to permit the skid change when necessary. The highest part of the appliance with the extension ladder mounted on the appliance shall not exceed 3.35 mtr. from the ground.
- 13.18 Ladder gallows shall be provided to carry a 10.5mtr. Extension ladder. The designs shall be such that the ladder can be released without difficulty from a reasonable accessible position and shall embody rollers to permit easy withdrawal by one man. Means shall be provided for locking the ladder, when stowed.
- 13.19 Provision shall be made at the roof of the appliance for fixing stand for portable search/flood light having 60 mtr coil.
- 13.20 A specially fitted recessed tray container for normal fit of tools carried on the appliance shall be provided.

14. ACCESSORIES

- 14.2 The following accessories shall be provided in addition to those normally fitted on modern commercial vehicle.
 - a) FIRE BELL: A 250mm diameter fire bell shall be mounted externally and shall be capable of being operated from with the driving compartment. The bell shall be of the hand-operated type.
 - b) HAND LAMPS: Two
 - c) FOG LAMPS: Two
 - d) Reversing light: Lamp suitably situated to assist reversing.
 - e) GRAND HEAD LIGHT.: Situated on the head of the driving compartment.
 - f) TRAFFICATORS: Illuminated with indicating lights on instrument panel or in any other prominent position in driving compartment.
 - g) WIND SCREEN WIPERS:
 - h) TOOLS: All tools required for normal routine maintenance of the appliance, which are not included in the kit for the chassis.
 - i) SIREN: Battery operated.
 - j) SEARCH LIGHT: Adjustable to give flood or beam light, mounted in a convenient position but, capable of being really disconnected and mounted on a tripped way from the appliance complete with tripped and with not less than 60mtr of TRS on reel mounted on the appliance.
 - k) SPOT LIGHT: Adjustable mounted in a convenient position on the rear side of the driving compartment.
 - l) INSPECTION LAMP: Protection type on wander lead with plug. A socket shall be provided in the control panel in the driver's cab for plugging in the lamps.
 - m) TAIL LAMPS: Two combined stop and till.

- m) REAR REFLECTOR:
- n) WIND SCREEN WASHER: Fitted in suitable location with controls in driving compartments.
- o) CASE INSTRUMENT PANEL AND LOCKER LIGHT:
- p) Public Address System if required.

15. ACCEPTANCE TESTS:

15.1 The appliance shall be subjected to the following tests. This tests may be made at the manufacturer's works, the fire brigade or else where, as may be agreed to between the purchaser and the manufacturer.

a) ROAD TEST:

- i) Acceleration and performance tests shall be made to check fulfillment of the requirements laid in 1.2 (c).
- ii) Braking tests shall be made to check fulfillment of the requirements laid in 1.2(c)
- iii) Turning circle test shall be made to check fulfillment of the requirement laid down in 1.2(f)/-b.

b) STABILITY TEST:

The stability of the appliance shall be such that when under fully equipped and loaded conditions, excluding the crew, If the surface on which the appliance stands is tilted to either , the point at which overturning occurs is not passed at angle of 30 degree from the horizontal.

16. MANUFACTURE'S CERTIFICATE AND GURANTEE:

16.1 The manufacture shall provide a certificate to the effect that appliance conforms to the requirements of this Indian standard in every respect.

16.2 The manufacture's shall guarantee the material, workmanship and operation of the unit. The period of guarantee shall be as agreed to between the purchaser and manufacturer but not less than 18 months from Acceptance of Fire tender at BHEL Haridwar.

17. MARKING :

17.1 Each appliance shall be clearly and permanently marked with the following information.

- a) Manufactures name and trade mark, if any
- b) Capacity of the pump in litres/minutes, capacity of the water tank and foam tank in litres, foam discharge rate.
- c) Year of manufacturer

[Handwritten Signature]
22/01/15
सहायक कमाण्डेंट / अग्नि
Assistant Commandant/Fire
के औसतव ईकाई वी एच ई एल हरिद्वार
CISF Unit BHEL

18. TERMS AND CONDITIONS

- 18.1 The new chassis shall be purchased by vendor/supplier's shall fabricate the combined foam tender body as per scope of work and technical specification. No deviations shall be accepted.
- 18.2 The transportation of the new chassis to vendor/supplier works shall be in vendor/supplier's scope. The newly fabricated combined foam tender will be transported by vendor/supplier's from vendor/suppliers works to BHEL Haridwar.
- 18.3 The cost of diesel etc. during transport shall be borne by vendor/supplier's.
- 18.4 Time period for the completion of work should be with in 06 months from the date of procurement of chasis.
- 18.5 Supplier shall furnish the drawing/design and quality plan for stage inspection of the vehicle. Supplier shall get the drawing /design and quality plan appoved from the CISF/BHEL management before the start of the work.
- 18.6 Joined pre dispatch inspection should be carried out by the representative of CISF Fire wing & BHEL Management officials. Payment will be made after final inspection/Acceptance of the vehicle at Fire Station BHEL Haridwar.

19. INSPECTION & TESTING

The inspection and testing facilities will be provided by the firm .Combined foam tender will be inspected at the following stages.

19.1 FIRST STAGE

Inspection of structure before paneling.

- a) Inspection of chassis as per technical specification
- b) **Water Tank**
 - i) Cap-4500ltrs. MOC Tank shell 5mm thick, MS Plate and Baffles of 3mm MS Sheet
 - ii) selection of materials used in structure, length height width and other dimension as per drawing, anti corrosive treatment and primer painting of understructure, sizes for manhole, cleaning hole in water tank
- c) **Power Take off**
 - i) Reputed make, heavy duty type of suitable ratio capable of transmitting the full torque of engine in the first gear.
 - ii) Visual inspection of make, model and gear ratio, documentary evidence of procurement/import to be checked.
- d) **Cooling system**
 - i) Indirect cooing system
- e) **Foam Tank**
 - i) Cap-800ltrs, MOC SS-304 3mm Thick sheet
 - ii) materials used in structure. length height width and other dimension as per drawing, anti corrosive treatment and primer painting
- f) **Body work & stowage**

- i) Super structure 32x32x2 mm MS Square pipe, cross member MS Channel 75x40 mm and flooring of lockers MS angle 37x37x3m, outer paneling 16 G Aluminium plane sheet & inner paneling 18 G Aluminium chequered plate and flooring of lockers and foot step-16 G Aluminium chequered plate, Dimensional check of under structure

19.2 SECOND STAGE

a) Inspection after paneling

- i) Outer paneling for material and gauge.
- ii) Inner paneling for material and gauge.
- iii) Sound deadners between structure and paneling.
- iv) Proper joints in paneling and waviness.
- v) Lockers flooring.
- vi) Aluminium chequered plate on rear foot board and place above the tank.

b) Water Tank

- i) MOC Tank shell 5mm thick, MS Plate and Baffles of 3mm MS Sheet
- ii) Hydraulic Test at 0.3 Bar to check the leakage.

c) Fire Pump

- i) Centrifugal type, Rear mounted, capable of delivering not less than 2250 lpm of water at a pressure of not less 7 kg/cm²
- ii) Review of MTC of GM & SS, All pipe connection, plumbing and valves to be checked.
- iii) Hydraulic test of pump at 21kg/cm², pump is subjected to 4 hrs continuous running test for confirming discharge cap at specified pressure engine parameter and cooling line temp to be recorded after every half hour along with pump parameter reading.

d) Foam Tank

- i) Cap-800ltrs, MOC SS-304 3mm Thick sheet.
- ii) Hydraulic test at 0.3 Bar the check the leakage.

e) Body work & stowage

- i) Super structure 32x32x2 mm MS Square pipe, cross member MS Channel 75x40 mm and flooring of lockers MS angle 37x37x3m, outer paneling 16 G Aluminium plane sheet & inner paneling 18 G Aluminium chequered plate and flooring of lockers and foot step-16 G Aluminium chequered plate.
- ii) Check outer & inner paneling.

19.3 THIRD & FINAL STAGE

Inspection after painting by performance test & visual inspection.

a) Fire Pump

- i) Centrifugal type, Rear mounted, capable of delivering not less than 2250 lpm of water at a pressure of not less 7 kg/cm².

b) Priming system

- i) Exhaust ejector/water seal
- ii) Primer timing in lifting water from 7 m depth to be seen. It should lift @ 30 cm/sec or early.

c) Power Take off

- i) Reputed make, heavy duty type of suitable ratio capable of transmitting the full torque of engine in the first gear to check the performance test.

d) Hose reel

- i) One hose reel with 60m length of 20mm bore with control branch of 5mm nozzle.

e) Cooling system

- i) Indirect cooling system

f) Foam compound proportionator

- i) Round the pump proportioner
- ii) Function of pick tube and inductor for foam generation if provided.

g) Foam cum water monitor

- i) Self aspirating type, 1400 lpm @ 7kg/cm².
- ii) Check location & movement in horizontal and vertical planes, Discharge in lpm, max throw observed.

h) Supplementary extinguishing agent

- i) DCP 50Kg x 02 Nos expellant N₂ cylinders with 22.5 mtrs, Discharge rate not less than 2.25kg/s.
- ii) Hydraulic test at 21 kg/cm² of DCP Vessel.

i) CO₂ cylinders

- i) Cap 22.5 kg x 02 nos

j) Instruments & controls

- i) Various gauges and controls at control panel.

k) Piping fitting & valves

- i) Complete piping/fitting valves for water tank GI Pipes.

l) Accessories(fitted)

- i) Check for materials and operation of equipment and accessories accompanying the combined foam tender as per relevant ISI standards.

m) Complete vehicle

- i) Combined foam tender of gross wt not less than 8.5 ton having 4500 ltrs water cap, 800 ltrs foam cap, centrifugal fire pump, exhaust ejector/water seal primer, PTO of reputed make heavy duty type suitable ratio capable of transmitting the full torque of engine in the first gear, Round the pump proportioner inductor, normal Pressure hose reel, water cum foam mointer, 50kg x 02 nos DCP vessels, N₂ cylinders, CO₂ cylinders 22.5 kg x 02 nos, Body work, workmanship & finish, Accessories and tools & equipments as per APPENDIX 'B'
- ii) Check proper functioning of all types of signal lights, alarm bell etc.
- iii) Check permanent and clear markings, painting and O/A finish, shadow board painting, monogram.
- iv) Check workmanship quality.
- v) Check painting work

- vi) Check completeness of equipments in quantity as per appendix B.
- vii) Check operation of levers, caps, fitment of tanks, linkages, markings etc.
- viii) Determination of actual pay load.
- ix) Road test, opening km and closing km reading, max speed attended.
- x) Check rattling of abnormal sound.
- xi) Test of foot brake, behavior on instant braking.
- xii) Check stability test.
- xiii) Check hand brake at fully ladder in 1 in 4 gradient in neutral gear.
- xiv) Check of 02 years maintenance spares as per part Nos. for quality.
- xv) Check of documentation of of manufacture's test certificate, material certificate, and Import papers for P.T.O, CCE Certificate for gas cylinders, Guarantee card for bought out equipment & accessories, Warranty certificate, Manuals.

20. QUALIFYING CONDITIONS

20.1 Only those vendors will be qualified who have commissioned at least one Combined foam tender as per BIS-10460-1983 in the past five years (on the date of opening of tender) and the referred combined foam tender is presently working satisfactorily for more than one year after commissioning (on the date of opening of tender).

The following information should be submitted by the vendor about the companies where similar combined foam tender have been supplied. This is required from all the vendors for qualification of their offer.

- 20.1 Name of customer/ company where referred combined foam tender is supplied.
- 20.2 Complete postal address of customer.
- 20.3 Month and year of commissioning.
- 20.4 Combined foam tender as per BIS-10460-1983 or similar capacity or more.
- 20.5 Name and designation of the contact person of the customer.
- 20.6 Phone, FAX no. and email address of the contact person of the customer.
- 20.7 Performance certificate from the customer regarding satisfactory performance of combined foam tender.
- 20.8 BHEL reserves the right to verify the information provided by vendor. In case of information provided by vendor is found to be false/incorrect, the offer shall be rejected.

29/11/14

सहायक कमाण्डेंट/अग्नि
Assistant Commandant/Fire
के. गुरुप्रसाद चौकई वी एच ई एन हरिद्वार
CISF Unit BHEL Hardwar