



# Kwa-Zulu Natal

## Fire Protection Association



### INTEGRATED FIRE MANAGEMENT

#### GUIDELINE FOR STANDARDIZATION OF FIRE EQUIPMENT

#### LIGHT FIRE TENDER

##### TANK:

- The tank to be manufactured from UV stabilized LMDPE with a nominal wall thickness of  $\geq$  10mm.
- Tank capacity: 1 x 1 000lt - 1500lt.
- 450mm diameter vented manhole.
- The tank design to ensure maximum drainage.

##### PUMPS:

- 1x Wuli 120 piston pump ( $\pm$  120lt/minute @ 50 Bar) (*or similar*) coupled to a *Direct Drive* PTO
- 1 x Davey twin stage twin wide impeller, close coupled to a Honda GX160, rope/electric start petrol engine

##### REELS:

- **High Pressure Delivery Side:-**

- 2 x Heavy duty spoke type; manual rewind hose reels, each fitted with 100m x 13mm inner diameter single braided hydraulic hose with instantaneous hydraulic couplings.

- Hose reels designed in such a way as to prevent kinking of the hose. The hose reel to be mounted by means of heavy duty bearings and seals/pillar boxes.

- **Low Pressure Delivery Side:**

- 1 x 25mm instantaneous gega coupling outlet at each rearcorner of vehicle, facing 450 downwards.

- 6 x 30m x 25mm canvas layflat hose with instantaneous gega couplings to be supplied

**PLUMBING:**

The piston pump plumbed so as to allow for the operation of the 2 high pressure reels as a

- unit and / or the vehicle protection nozzles – *the vehicle protection nozzles to be activated from within the vehicle crew cab .*

- The high volume pump plumbed to allow for the suction from open source for tank refill, as well as firefighting with the 2 x 25mm instantaneous lay-flat hose couplings.

Individual ball valves (Netco or Bossini) for each hose reel as close to the apparatus as possible. (Optional on request - A small hole, 2-3mm should be drilled on the right hand

- outlet side of the ball valves to drain water from the ball valves to prevent damage-due to freezing – optional, confirm with specific client).

2 x 3m x 50mm suction hoses with 1 x 50mm mega-flow aluminum foot valve supplied

- for tank refill from open source. To be supplied with 63mm Camlock couplings. *The foot valve to be equipped with a float to prevent it from lying on the bottom.*

- A pressure relieve valve to be incorporated in the wet-end – to be set at maximum of 12 Bar

- A 75mm diameter hand-held primer to be supplied to speed up priming when required, or electric self-primer.

- Red PVC covers to be provided for all the pumps and hose reels.

- Pumps to be mounted in such a way that It ensures easy and ergonomically friendly starting – starting rope should not “bend”.

- Plumbing on pumps with flanges for easy removal.

- All ball valves should be mounted in such a way that it is ergonomically friendly and will prevent someone from injuring his hand.

The pumps to be mounted in such a way that it is possible to replace the starter rope

- without moving the pumps or any other component, except for the starter cover, easy access required.

- No valves or pipes shall protrude at the rear or on the sides of the unit to prevent damage.

- Pipes passing through the vehicle body should be minimized as far as possible – if unavoidable, the pipes must be protected by means of rubber seals.

- A pressure gauge to be mounted on the discharge side of the high pressure pump.

20mm flood jet 180° brass nozzle to be mounted on the bull bar and the rear bumper and

- /2 nozzles (mounted back-to-back) on top of the crew cab for vehicle and crew protection, linked to the piston pump.

A pre-delivery test to be conducted to ensure that the tanks are free of any foreign

- objects, grit, etc., that the unit is functioning properly and that there are no water leaks – ensure tanks are clean of any debris.

- 1 x 38mm filling points for knapsack pumps on each side

- Stainless steel strainer (> 0.02m<sup>3</sup>) to be fitted on pump suction inlet on inside of tank.

**UNIT DESIGN:**

- The unit to be designed in such a way that it can easily be loaded and secured safely the vehicle, mounted strictly per specific truck model specifications.

- SABS certified roll over protection to be provided directly behind the vehicle cab

- The unit will also incorporate lockable watertight and dust proof bins on both sides of the
- tank for the storage of the standard types and numbers of firefighting tools – to open sideways:

- All ball valves should be mounted in such a way that it is ergonomically friendly and will prevent someone from injuring his hand.

- The unit will also incorporate lockable watertight and dust proof bins on both sides of the
- tank for the storage of the standard types and numbers of firefighting tools – to open sideways:

- o 8 x Beaters

- o 8 x Rake-hoes

- o 1 x Axe/hatchet

- o 1 x Bow saw

- o 1 x Spade

- o 2 x Drip torch

- o 1 x Toolbox (750 x 400 x 300mm)

- o 1 X 20L drinking water container

- o 2 x 20L Jerry Cans

- Inside of all bins to be rubberized.

- Specific storage to be provided for small items such as the nozzles.

- Steps (with front enclosed) and “grab handles” to be provided on both sides of the crew cab for access and at the rear.

- Seating provided for 8-10 crew members in the crew cab, facing to front or back, not sideways.

- Reflecting strips and chevron to be fixed onto the unit as required by the law.

- A step to be mounted at the rear of the unit on the bumper for the pump operator required.

- Recovery hooks to be fitted on front and rear (front hook to be fitted on bull bar that will be ordered through the leasing company).

- Standard reverse alarm on truck to be retained or refitted.

**COLOR CODING:**

- **Red:** All valves on the delivery side of the high pressure system used for firefighting, the

- **Blue:** All delivery valves on the high volume system used for fire fighting

- **Green:** All valves on the suction side as well as the valves required for refilling the tank.

**ELECTRICAL EQUIPMENT:**

- 2 x tractor type, rubber mounted swivel lights mounted in such a manner to ensure sufficient light at storage bins and pumps, not protruding above highest point on truck and not facing directly backwards.
- Lights inside crew cab and all bins (24v)
- 2 x 24 volt *high quality* red flashing led lights with the necessary protection against damage, to be mounted in an upright position as follows:
  - à One on the front of the roof of the crew cab
  - à One at the rear of the vehicle
- All wiring to be enclosed by a protective harness – no loose wiring allowed.
- Steps (with front enclosed) and “grab handles” to be provided on both sides of the crew cab for access.

**ADDITIONAL EQUIPMENT:**

The following additional equipment will be supplied:

- A fold-up step to be mounted at the rear of the unit for the pump operator *if required*.
- Rear bumper (rear under run protection) to be in compliance with legal requirements – shall be mounted on a swivel system to prevent it from getting hooked when vehicle is going forward, to comply with SANS 1055:2003. *If required*
- A front Bull-Bar to be manufactured and fitted, allowing for lowering of cab with loosening or removing the bull-bar.
- All high pressure nozzles to be fitted with instantaneous hydraulic couplings (N Series)
- Reel to be mounted for canvas hose.
- 1 x 4,5kg or 2 x 2,5 kg dry powder fire extinguisher mounted in crew cab.

**MANUFACTURING SPECIFICATIONS**

- Cab
  - o All modifications comply with manufacturers specifications.
  - o All new electrical wiring to be neatly collected and secured- all
  - o All door handles and linings, must be correctly replaced if removed
  - o Paint – paint must be in accordance to specifications.
- Mountings
  - o All body mountings must be as per vehicle manufacturer’s
  - o All coil-springs used in mountings to manufacturers specification.
  - o Cleats only to be welded onto sub-frame and bolted onto the frame.
  - o U-bolt mountings (where allowed) – spacers to be inserted in
  - o Grade and thickness of bolts used must conform to vehicle
  - o Spacing between sub-frame and frame must conform to vehicle
  - o Guides must be fitted – welded onto sub-frame.
  - o No welding or drilling on frame.

- Vehicle

- Vehicle mass (when fully loaded, including crew) to comply with manufactures and legal specifications per individual axel and total GVM.

- Dealership must conduct PDI before delivery of vehicle. insist for copy of PDI. (Pre-delivery Inspection).

- Dealership to ensure that vehicle manufacturer's specifications have been complied with before acceptance of delivery.