SERVICE TESTS FOR USED OR MODIFIED FIRE APPARATUS

The intent of this document is to ensure that all used or modified fire apparatus, equipped with a pump or used for tanker service, essentially meet the requirements of Underwriters' Laboratories of Canada (ULC) "Standard for Automobile Fire Fighting Apparatus" S515-04 or subsequent (current) editions of the Standard. Full adherence with the following specified tests is recommended when purchasing used apparatus.

1) Weight Tests

1.1) Load Balance Test: When fully laden (including a 460kg (1000 lbs) personnel weight, full fuel and water tanks, specified load of hose and miscellaneous equipment), the vehicle shall have a load balance of 22% to 50% of total vehicle mass on the front axle and 50% to 78% of this mass on the rear axle.

Distribution of mass of 33% and 67% respectively on the front and rear axles is preferable for a vehicle having dual rear tires or tandem rear axels.

For a vehicle having tandem rear axels and dual tires on each axle, a loading of between 18% and 25% on the front axle with the balance of mass on the rear axles is permissible.

2) Road Tests

2.1) Acceleration Tests:

2.1.1) From a standing start, the apparatus shall attain a true speed of 55 km/h (35 mph) within 25 seconds for Pumpers carrying up to 3,150 litres (700 gallons) of water.

For apparatus carrying in excess of 3,150 litres (700 gallons) or apparatus equipped with aerial ladders or elevating platforms, a true speed of 55 km/h (35 mph) in 30 seconds should be attained.

2.1.2) The vehicle should attain a top speed of at least 80 km/h (50mph).

2.2) Braking Test: The service brakes shall be capable of bringing the fully laden apparatus to a complete stop from an initial speed of 30 km/h (20 mph) in a distance not exceeding 9 metres (30 feet) by actual measurement. The test should be conducted on a dry, hard surfaced road that is free of loose material, oil and grease.

3) **Pump Performance Tests**

3.1) Hydrostatic Test – Recent evidence of hydrostatic testing of the pump for 10 minutes at a minimum pressure of 3,400 kPa (500 psi).

Hydrostatic Test requirements:

(APPLICABLE TO NEW OR REBUILT PUMPS ONLY)

3.1.1) The pump body shall be subjected to a hydrostatic test to a gauge pressure of 500 psi (3400 kPa) minimum for 10 minutes.

3.1.2) The pump manufacturer shall provide a certificate of completion for the hydrostatic test.

3.1.3) Where an auxiliary pump is provided in combination with a fire pump and where the pumps are interconnected so that pressure from one pump can be transmitted to the other pump, check valves, intake or discharge relief valves, pump drive gear ratios, or other automatic means shall be provided to avoid pressurizing either pump beyond its maximum rated hydrostatic pressure.

3.1.4) The entire discharge and intake piping system, valves, drain cocks and lines, and intake and outlet closures, excluding the tank fill and tank-to-pump lines on the tank side of the valves in those lines, shall be capable of withstanding a minimum hydrostatic burst gauge pressure of 500 psi (3400 kPa).

3.2) Priming and Suction Capability Tests

3.2.1) Vacuum Test: The pump priming device, with a capped suction at least 6 metres (20 feet) long, shall develop –75 kPa (22 inches of mercury) at altitudes up to 300 metres (1000 feet) and hold the vacuum with a drop of not in excess of 34 kPa (10 inches of mercury) in 10 minutes.

For every 300 metres (1000 feet) of elevation, the required vacuum shall be reduced 3.4 kPa (1 inch mercury).

The primer shall not be used after the 10-minute test period has been started. The test shall be made with discharge outlets uncapped.

3.2.2) Suction Capability Test: The pump (in parallel or series) when dry, shall be capable of taking suction and discharging water with a lift of not more than 3 metres (10 feet) through 6 metres (20 feet) of suction hose of appropriate size, in not more than 30 seconds and not over 45 seconds for 6000 L/min (1320 Igpm) or larger capacity pumps. Where front or rear suction is provided on midship pumps, an additional 10 seconds priming time will be allowed. The test shall be conducted with all discharge caps removed.

3.3) Pump Performance

3.3.1) Capacity Test: Consists of drafting water (preferably with a 10 feet lift) and pumping the rated capacity at 1000 kPa (150 psi) net pump pressure for a continuous period of at least 1 hour.

3.3.2) Pressure Test: Under the same conditions as in 3.3.1 above pumping 50% of the rated capacity at 1700 kPa (250 psi) net pump pressure for at least ½ hour.

FIRE UNDERWRITERS SURVEY

FIRE APPARATUS SERVICE TEST RESULTS SHEET

Municipality:_____ Date of Test: _____

Apparatus Manufacturer: _____Label Number (ULC): _____

Chasis Manufacturer:_____Model Number: _____

Date of Manufacturer: _____ULC Test Date: _____

Rated Capacity of Pumper: _____ L/min (_____ lgpm)

Water Tank Capacity: _____ Litres (_____ lgallons)

1) Weight Tests

1.1) Load Balance

a) Total Vehicle Weight: _____ kg (_____ lbs)

b) Weight displacement – Front Axle: _____ kg (_____ lbs)

- Rear Axle: _____ kg (_____ lbs)

2) Road Tests

2.1) Acceleration Tests

2.1.1) From a standing start, the apparatus attained a true speed of:

(i) _____ km/h (_____ mph) in 25 seconds. Applicable to apparatus carrying up to 3150 litres (700 gallons) of water.

or

(ii) _____ km/h (_____ mph) in 30 seconds. Applicable to apparatus carrying more than 3150 litres (700 gallons) of water or apparatus equipped with aerial ladders or elevating platforms.

2.1.2) The vehicle attained a top speed of 80 km/h (50 mph)

Yes _____ No _____

If "No" indicate speed attained: _____ km/h (_____ mph)

2.2) Braking Test

Full-laden apparatus was brought to a complete stop from an initial speed of 30 km/h (20 mph) in a distance of _____ metres (_____ feet) on a dry, hard surfaced road.

3) Pump Performance Tests

3.1) Hydrostatic Test (APPLICABLE TO NEW OR REBUILT PUMPS ONLY – see page 2)

Recent evidence of hydrostatic test to 3400 kPa (500 psi) is enclosed.

Yes _____ No _____ Not Applicable _____

3.2) Priming and Suction Capability Tests

3.2.1) Vacuum Test

The pump priming device developed 75 kPa (22 inches of mercury) of vacuum and held the vacuum with a drop of _____ kPa (_____ inches of mercury) in 10 minutes.

3.2.2) Suction Capability Test

Suction Lift: _____ metres (_____ feet)

Priming Time: _____ seconds

Suction Hose: Diameter _____millimetres (_____ inches)

Length _____ metres (_____ feet)

3.3) Performance Tests

TEST	DURATION (MINUTES)	AVERAGE DISCHARGE (L/MIN)	(LGPM)	AVERAGE NET PUMP PRESSURE (kPa)	(psi)	AVG.ENGINE SPEED (RPM)
CAPACITY						
PRESSURE						

Hose and Nozzle Layout

Capacity Test: _____

Pressure Test: _____

Remarks _____

_____

_____

_____

_____

_____

To the best of my knowledge the foregoing test results are true and accurate.

Signature of responsible official _____

Name _____ Telephone No. _____

Title _____

Representing _____