

York University Firefighter Fitness Assessment

Aerobic fitness

Aerobic fitness is measured directly using expired air analysis while running on a treadmill. The speed and incline are gradually increased until the candidate reaches his/her maximum intensity. This test is designed to measure endurance or "work capacity".

Participation in moderate to high intensity aerobic workouts (30 - 45 minutes per workout, 4 - 5 times per week) including such activities as jogging, cycling, swimming and rowing, can help you prepare for the aerobic fitness assessment. Consult your physician and/or a qualified fitness instructor before starting any exercise program.



Job-related performance evaluation

There are eight job-related performance tests. The tests are designed to simulate the physical demands of a firefighter's job which requires both muscular strength and endurance.

To prepare for these tests, you may wish to participate in a supervised weight training, stretching and an aerobic exercise program to increase strength, improve flexibility and enhance aerobic fitness. Consult your physician and/or a qualified fitness instructor before starting any exercise program.

1. Ladder climb

Wearing a 9.1 kilogram cylinder from an S.C.B.A. (self-contained breathing apparatus), you will climb a 12.2 metre extension ladder, uncouple and re-couple a wall-mounted hose connection, then climb down the ladder. This test assesses fear of heights (acrophobia) and manual dexterity.



2. Search enclosed area (revised)

Wearing a blacked-out face piece, you will be locked in a confined area for a time to be determined by the tester. While you are confined, you will be instructed by the tester to reach up to the top, left front corner and count the number of washers on a bolt sticking out of the wall. You must then call out the correct number to the tester. This test detects fear of confined areas. It is scored on a pass/fail basis - it is not timed

Note: During the remaining tests you will be wearing a 13.5 kilogram vest plus 2.3 kilogram weights on each ankle. These weights approximate the heaviness of the protective clothing and SCBA worn by firefighters. You will be timed when you perform all tests except the Ladder Lift Test.



3. Hose carry/climb

You will lift and carry over your shoulder a 38.5 kilogram bundle of hose up and down five flights of stairs. This test simulates carrying equipment to the staging areas of a high-rise fire. It assesses dynamic balance, muscular strength of the upper



body and back, plus muscular endurance and power of the legs.

4. Rope pull

Using a rope, you will hoist and lower in a hand-over-hand manner a 22.5 kilogram weight a height of 20 metres. This test simulates hoisting fire fighting equipment to and from windows or roofs. It assesses manual dexterity plus the muscular strength and endurance of the upper body and back.



5. Hose advance/drag

You will pull a 70 kilogram load which simulates a charged hose line (a hose line that is ready to discharge water), a distance of 15 metres. This test assesses leg power and muscular strength of the upper body.



6. Ladder lift

You will remove and replace a 25.5 kilogram ladder from brackets mounted 1.93 metres above the floor. This test simulates the demands involved in numerous fire fighting activities (ie. pike poling, removing ladders from aerial beds, etc.) which require working at or above chest/shoulder height. It assesses muscular strength and endurance of the upper body and back.



7. Victim drag

You will drag a 91 kilogram "victim" a distance of 15 metres while weaving in and out of traffic cones placed every 3 metres. This simulates rescuing a downed firefighter wearing full turn-out gear. It assesses upper body, back, plus lower body muscular strength, agility and dynamic balance.



8. Forced entry (new)

In this test you are required to move a heavily weighted tire a distance of 12 inches (30.5 cm), until the tire contacts the wall, by hitting the tire repeatedly with a 10 lb (4.5 kg) sledge hammer.

This task simulates a forced entry through a door or wall and requires upper body strength, upper body endurance and motor ability. The height of the table is the height of a door handle and also the height at which a sledgehammer or axe is normally swung during a forced entry.

Moving a tire of this weight a distance of 12 inches has been documented to require the same amount of sledge hammer work as breaking through a door or wall.

The tester will record the number of hits and the total time taken to complete the task. Timing begins when you first draw the sledge hammer back from the tire and ends when the tire first contacts the wall.



Please be aware that the hammer will rebound, so hold onto the hammer tightly during both the hit and rebound.