

Medical Clearance Form
for
Physical Aptitude Test for Structural Firefighting Applicants

Candidate's Full Name

Date of Birth (YYYY-MM-DD)

Email Address

Phone Number

Street Address

City

Province

Postal Code

This form, when completed by the candidate's physician, will indicate that it is safe for the candidate to undertake the Physical Aptitude Test for Structural Firefighting Applicants, developed by the Work Physiology Laboratory at the University of Alberta and administered by the Department of Kinesiology at Langara College. The test protocol is described next.

This testing protocol is designed to evaluate the physical work capacities of healthy, physically active individuals. Each test requires a maximal effort. All of the tests are completed while wearing firefighting personal protective equipment (PPE) that weighs approximately 22 kg (appx 48 lb) depending on size. This ensemble includes helmet, flash-hood, gloves, coveralls, pants, boots, jacket, and self-contained breathing apparatus (SCBA). The applicant is not required to breathe from the SCBA but must carry it. For safety during the treadmill test, running shoes are substituted for firefighting boots. The tests are administered by the Department of Kinesiology at Langara College and are not medically supervised. The test procedures are described briefly below.

PART 1 – AEROBIC FITNESS

Peak oxygen uptake ($\dot{V}O_{2peak}$) will be measured during a progressive, incremental exercise test to exhaustion on a treadmill. During the test, expired gases are monitored with an automated metabolic measurement system to calculate the rate of oxygen consumption. Heart rate is monitored continuously with a telemetry system. Depending on fitness level and motivation, this test normally requires the individual to walk on the treadmill at a brisk pace for between 10 - 20 minutes. Regardless of the fitness level of the individual, the test involves a maximal effort and is terminated when the test subject is too fatigued to continue exercise. Combined with the maximal exercise stress, the weight and heat retention properties of the PPE result in a significant level of fatigue.

After completing the treadmill test, the applicant will recover for 60 minutes before beginning the job-related tests.

PART 2 – JOB-RELATED PERFORMANCE TESTS

Prior to completing the job-related tests, the applicant will complete a comprehensive "walk-through" session with an opportunity to practice each of the six tests. This takes approximately 30 minutes and serves two purposes. First, the applicant will be familiarized with all testing procedures and second, the practice provides a suitable warm-up for the demanding tests that follow. Each test is followed by a recovery period of exactly 3 minutes. Applicants may not leave the testing area or remove the protective clothing during the recovery periods.

EQUIPMENT CARRY/VEHICLE EXTRICATION TEST (FOLLOWED BY 3-MIN OF RECOVERY)

The applicant carries small (20 kg or 44 lb) and large (36 kg or 80 lb) vehicle extrication tools (the "Jaws of Life") a total distance of 105 m (345'). In addition, the applicant will lift and hold the 20 kg (44 lb) tool in specific positions that simulate the work required to remove a vehicle door. The tools will then be returned to the starting point. The test involves continuous heavy work for approximately 3.5 minutes. This test is designed to evaluate the strength required to lift, carry and use heavy tools in rescue situations.

CHARGED HOSE ADVANCE TEST (FOLLOWED BY 3-MIN OF RECOVERY)

The applicant will drag a charged (full of water) 44 mm (1.75") hose a distance of 30 m (100'). The nozzle must be held securely over the shoulder with two hands at all times as the applicant advances to the finish line. This test assesses lower body strength and power for pulling and dragging.

WEIGHTED SLED PULL TEST (FOLLOWED BY 3-MIN OF RECOVERY)

The applicant will pull a weighted sled a distance of 15 m (50 feet) over a smooth concrete floor using a rope. This task is repeated 3 times. During this test, the applicant must stand still and pull the sled towards them using 16 mm (5/8") rope. This test assesses upper body strength, power, and endurance for pulling.

FORCIBLE ENTRY TEST (FOLLOWED BY 3-MIN OF RECOVERY)

Using a 4.5 kg (10 lb) sledgehammer, the applicant will strike a target on a mechanically-braked forcible entry apparatus until it has moved the required distance. This test assesses muscle strength, power and endurance necessary for breaking through reinforced structures.

VICTIM RESCUE TEST (FOLLOWED BY 3-MIN OF RECOVERY)

The applicant will drag a mannequin weighing approximately 83.0 kg (183 lb) a distance of 30 m (100') through a simple obstacle course. The applicant will walk backwards for 15 m (50') and return to the start line as quickly as possible while navigating around a series of traffic cones. This test assesses muscular strength and endurance for dragging.

LADDER CLIMB TEST (FOLLOWED BY 3-MIN OF RECOVERY)

The applicant will climb a 7.3 m (24') ladder to the 10th rung and return to the floor as quickly as possible. This task will be repeated five times. The applicant must step on every rung on the way up and down the ladder and always maintain three points of contact with the ladder. You will wear a safety harness, clipped to a fall-restraint lanyard. This test assesses muscle strength, endurance, and anaerobic capacity for climbing.

The Department of Kinesiology at Langara College collects the personal information on this form in compliance with the *Freedom of Information and Protection of Privacy Act*, s. 26(c) and uses it solely for the purpose of confirming your medical clearance for physical aptitude evaluation. For questions about the collection and use of your personal information, contact the Program Coordinator at kinesiology@langara.ca.

Is this individual taking any medication that could affect normal physiological responses to exercise?

No _____ Yes _____

If yes, please explain.

Resting heart rate: _____ bpm Resting blood pressure: _____ mmHg

If heart rate is greater than 100 bpm and/or blood pressure is greater than 144/94 mmHg, is this individual in sufficient health to undertake maximal exercise?

No _____ Yes _____ N/A _____

If yes, please explain.

Is there any medical reason that this individual should not undertake very strenuous exercise?

No _____ Yes _____

If yes, please explain.

My signature below confirms that this applicant has been given a medical examination and that it is safe for them to undertake the Firefighter Physical Aptitude Evaluation described above.

Physician's Name

Date (YYYY-MM-DD)

Office or Clinic Address

City

Province

Postal Code

Telephone

Signature

Office or Clinic Stamp