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# KANANASKIS EMERGENCY SERVICES



## Candidate Physical Assessment Guide

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The purpose of this physical assessment is to ensure that candidates are capable of performing the strenuous activities associated with firefighting, without causing harm to themselves. The activities performed in this assessment are simulated events based on job related tasks required. It should be understood that the conditions and strains might be different when participating in emergency activities. This assessment does not negate the need for all candidates to visit their physician to discuss any medical concerns regarding previous medical conditions or injuries.

This assessment has been adapted from the Candidate Physical Ability Test (CPAT) and based on current NFPA Standards (1500- Standard on Fire Department Occupational Safety and Health Program, 1582- Standard on Comprehensive Occupational Medical Program for Fire Departments, 1583- Standard on Health-Related Fitness Programs for Fire Department Members)

Prior to attending the physical assessment, candidates will be required to complete a medical self-assessment and are required to inform the recruitment team if they have any medical conditions which prevent them from being able to complete the tasks outlined in a safe manner.

Candidates will be responsible to ensure they are appropriately dressed, hydrated and prepared for their physical assessment. If the evaluators feel the candidate is not sufficiently prepared to complete the assessment in a safe manner they may disallow them to complete the assessment on that date and a new assessment date will need to be scheduled.

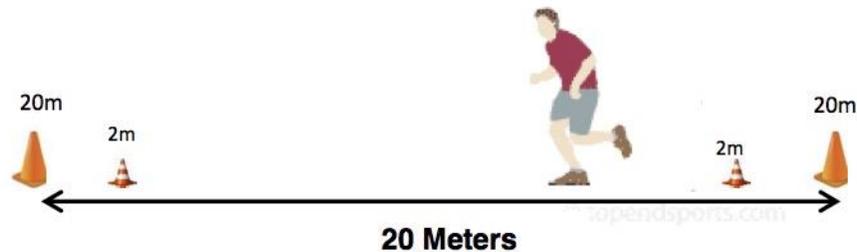
Candidates should come dressed in appropriate exercise attire. Additional personal protective equipment required for the Job Specific Task Assessment will be provided by Kananaskis Emergency Services (KES).

The assessment is broken into 2 stages: Aerobic Capacity Assessment & Job Specific Task Assessment. Both components will be evaluated together to determine a candidates suitability.

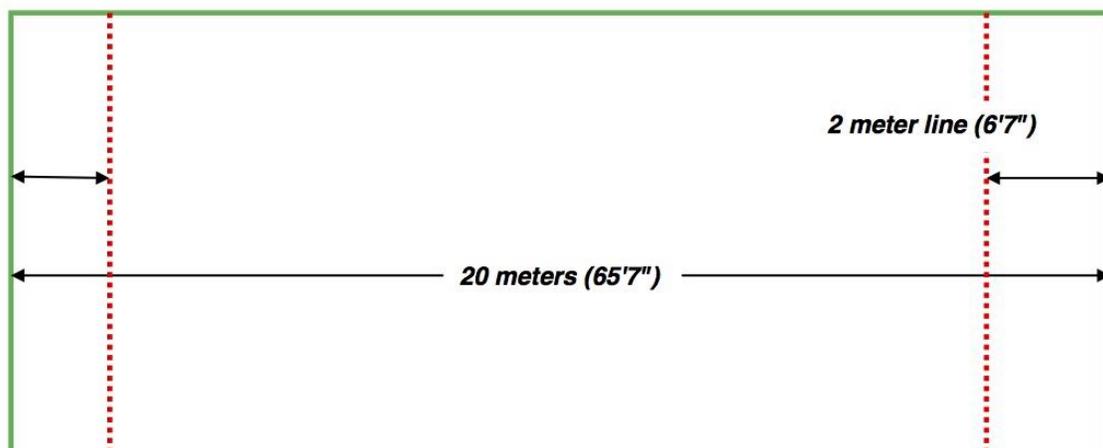
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## Aerobic Capacity Assessment

The 20 meter multistage fitness test (beep test) is used to assess maximal aerobic/anaerobic capacity. The test is conducted on a flat surface where candidates will run between 2 lines spaced 20m apart to a series of beeps. Candidates will wear exercise attire and suitable footwear.



The Candidate stands behind one of the lines facing the second line, and begins running when instructed by the recording. The speed at the start is quite slow. The Candidate continues running between the two 20 meter lines, turning at the 20-meter lines when signaled by the recorded beeps. After about one minute, a sound indicates an increase in speed, and the beeps will be closer together. This continues each minute (level). If the 2-meter line is reached before the beep sounds, the Candidate must wait at the 20-meter line until the beep sounds before continuing. If the 2-meter line is not reached before the beep sounds, the Candidate is given a warning and must continue to run to the 20-meter line, then turn and try to catch up. The Candidate is pulled from the test if they fail to reach the 2-meter line for two consecutive lengths.



The scoring is based on the level and number of shuttles the Candidate successfully completes before they are unable to keep up with the recording, not the level and shuttle they stop at.

The Candidates score is then equated via Table 1 below into a V02Max. The accepted minimum industry standard for Firefighting is 42 mL/kg/min, achieved in Level 8 Shuttle 6. KES has set this threshold as a 100% score.

Table 1	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
L1	16.1	16.6	17.1	17.5	18.0	18.5	18.9	-	-	-
L2	19.1	20.0	20.4	20.9	21.3	21.8	22.2	22.6	-	-
L3	23.0	23.4	23.8	24.2	24.7	25.1	25.5	25.9	-	-
L4	26.4	26.8	27.2	27.6	28.0	28.4	28.8	29.2	29.6	-
L5	29.9	30.3	30.6	31.0	31.4	31.8	32.1	32.5	32.9	33.3
L6	33.3	33.7	34.0	34.4	34.8	35.1	35.5	35.8	36.2	36.6
L7	36.8	37.1	37.5	37.8	38.1	38.5	38.8	39.2	39.5	39.9
L8	40.2	40.5	40.9	41.2	41.5	41.9	42.2	42.5	42.9	43.2
POOR				FAIR			GOOD			

Table 2 converts the Candidates V02Max into a percentage that will be used during the overall evaluation of the Candidate's physical assessment. Level 8 Shuttle 6 represents 100%.

Table 2	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
L1	38%	40%	41%	42%	43%	44%	45%	-	-	-
L2	46%	48%	49%	50%	51%	52%	53%	54%	-	-
L3	55%	56%	57%	58%	59%	60%	61%	62%	-	-
L4	63%	64%	65%	66%	67%	68%	69%	70%	71%	-
L5	71%	72%	73%	74%	75%	76%	77%	78%	79%	79%
L6	79%	80%	81%	82%	83%	84%	85%	85%	86%	87%
L7	88%	89%	89%	90%	91%	92%	93%	94%	94%	95%
L8	96%	97%	98%	98%	99%	100%	101%	101%	102%	103%
POOR				FAIR			GOOD			

The entrance requirement is completion of Level 6 Shuttle 2 (80%). Candidates are encouraged to push themselves to achieve the highest level they can safely achieve. The Candidates results will be considered along side the Job Specific Task Assessments to determine if they are capable of safely performing the required duties of a Firefighter. These results will also serve as a self-assessment tool for the Candidate on their aerobic capacity and highlight any room for further conditioning. If a Candidate is unable to successfully complete L6 S2 they will not continue in the application process, however may reapply during the next recruitment intake.

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## Job Specific Task Assessment

The second component of the physical assessment will test the Candidates strength, agility, flexibility and coordination. The circuit is comprised of 10 events that all must be successfully completed to achieve a pass. Scoring for each event will be Pass/Fail. The events chosen do not require any previous firefighting knowledge or skill to complete but do replicate basic job specific tasks, movements and strength required in various firefighting activities.

Candidates will complete the circuit following a short break after the Aerobic Capacity Assessment. During the break Candidates should ensure they remain hydrated and allow recovery time before beginning the circuit.

For the circuit, Candidates will be provided with turnout coat, turnout pants, helmet, firefighting gloves and a self-contained breathing apparatus backpack (no mask). This component helps to replicate the conditions that will be encountered during normal operations in the role of a Firefighter. Candidates will wear their exercise footwear while completing the circuit.

The circuit is not timed, however, Candidates are expected to move through each event without stopping, using the walk between events as a rest/recovery period. Should a Candidate stop while in the circuit they will be provided with a warning from the evaluator and must continue within 10 seconds. Should the Candidate not be able to continue or stop again throughout the duration of the circuit they will be disqualified.

The circuit events are laid out in the following order:

1. Equipment Carry
2. Tool targets
3. Ladder Climb
4. Crawling Search
5. Coupling/Uncoupling
6. Rescue Dummy Drag
7. Forcible Entry
8. Stair Climb
9. Hose Hoist/Lower
10. Advance Charged Hoseline

The following will outline the details for each event, the physical literacy and critical failures.

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## **1. Equipment Carry**

The Candidate will pick up 2 pieces of equipment, weighing approximately 30 lbs. each, off of the ground and carry them a distance of 15m through a serpentine of cones. The equipment will then be placed on a table to simulate the shelf of a vehicle compartment.

Physical Literacy: Strength, Balance, and Ergonomics

Critical Failures: Unable to lift equipment, drops equipment, lifts/moves in a manner which could cause injury, falls while carrying equipment

## **2. Tool Targets**

The Candidate will pick up a tool from the ground and stand on a fixed-point located 2ft. from the target wall. With the combination tool (30 lbs.), the Candidate must then place the tip of the tool on each target for 5 seconds. Target 1 is located in line with the Candidate's body, 2ft. off of the ground. Target 2 is located in line with the Candidates' body, 3ft. off the ground. Target 3 is 2ft. to the (left or right) of the Candidates body, 3ft. off the ground. Target 4 is in line with the Candidates' body 4ft. off the ground.

Physical Literacy: Strength, Balance, Control, Muscle Endurance and Ergonomics

Critical Failures: Unable to lift tool, drops tool, unable to hold position for 5 seconds after second attempt, lifts/moves in a manner which could cause injury, falls while lifting tool

## **3. Ladder Climb**

The candidate will ascend a fixed ladder placed at a 70° angle up to the marked rung and descend until both feet are on the ground. This shall be repeated 5 times.

Physical Literacy: Coordination, Flexibility, Balance, Control

Critical Failures: Unable/Unwilling to climb to height, ascends or descends in an uncontrolled manner

## **4. Crawling Search**

The Candidate will lower to their hands and knees and crawl along a designated path to a pylon, turn around and follow back on the same path. The candidate shall move at a steady pace and remain in contact with the vertical surface simulating a wall. Once at the designated finish, the candidate will be instructed that they can stand.

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Physical Literacy: Flexibility, Range of Motion, Coordination

Critical Failures: Unable to complete task, doesn't remain on hands and knees, moves more than 6" away from the vertical surface

### **5. Coupling/Uncoupling**

The Candidate will approach the fire hydrant, uncouple the 65mm side cap then couple on a 65mm adapter. The Candidate will then uncouple the 125mm front cap and couple on the 125mm adapter. The Candidate will then uncouple the second 65mm side cap, and couple on a 65mm hose. The Candidate will then reverse the process for all 3 ports, removing the adapters and replacing the caps.

Physical Literacy: Coordination and Fine Motor Skill

Critical Failures: Unable to remove caps or attach adapters

### **6. Rescue Dummy Drag**

The Candidate will grab the rescue webbing harness in both hands and walk backwards, dragging the rescue dummy, weighing 165lbs, a distance of 15m to simulate the rescue of a victim.

Physical Literacy: Strength, Balance and Muscle Endurance

Critical Failures: Unable to move rescue dummy, unable to reach required distance, falls during drag

### **7. Forcible Entry**

The Candidate will stand on the foot pads of the force machine, straddling the ram. The candidate shall use a 10lb dead-blow sledge hammer to strike the ram striker plate using an overhand swing, until the ram reaches the green indicator on the scale. The candidate will step off of the force machine and place the sledge hammer head down within the designated box beside the machine.

Physical Literacy: Strength, Balance, Range Of Motion and Coordination, Muscle Endurance

Critical Failures: Unable to complete task, drops sledgehammer, swings sledgehammer in an uncontrolled manner, falls while completing

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## **8. Stair Climb**

The Candidate will pick up the hose pack, comprised of 30m of 44mm fire hose strapped in a high-rise style pack, and place it over their shoulder. The candidate shall then ascend 5 floors to the top of the hose tower. Once at the top, the candidate shall place the hose pack on the platform.

Physical Literacy: Coordination, Flexibility, Balance, Control, Endurance

Critical Failures: Uses hand rail to pull themselves up, moves up/down stairs at an uncontrolled speed, drops hose pack, does not make it to the top, falls while completing task.

## **9. Hose Hoist**

The Candidate, once on the platform, will use a pre-tied rope to hoist 1 77mm hose (20lb) to the top of the tower in a hand over hand manner, without touching the railing. Once at the top the candidate will lift the hose over the railing and place it onto the platform. The Candidate will then lift the hose over the railing again and lower the hose slowly to the ground in a hand over hand manner. The candidate will then pick up the hose pack on the platform and descend down the stairs.

Physical Literacy: Strength, Coordination, Muscle Endurance, Control and Range of Motion

Critical Failures: Drops hose during raising or lowering, fails to raise/lower using hand over hand method after first warning

## **10. Advance Charged Hoseline**

The Candidate must drag 100ft. of a 44mm, charged hose line. From the start point, candidates will place an amount of hose, not to exceed 4ft. over their shoulder. The candidate will then walk towards the finish point until the hose is fully deployed.

Physical Literacy: Strength, Balance and Muscle Endurance

Critical Failures: Unable to fully deploy the hoseline, falls during deployment, places more than 4ft. of hose over shoulder after warning.

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Candidates who fail no more than two tasks will be given the opportunity to re-test them once each at the end of their circuit. Upon completion of the assessment, candidates will remove SCBA and turnout gear and will rest and hydrate while being monitored for a minimum of 15 minutes.