

# Physical Ability Testing

## **Purpose:**

To evaluate job-specific readiness in all incoming fire personnel. Applicants must possess the physical ability necessary to perform necessary job functions which include rigorous physical tasks. These assignments can be taxing to the cardiovascular and respiratory systems as well as requiring muscular strength, endurance, and flexibility. Applicants must be able to demonstrate the ability to perform basic tasks without undue risk of injury or fatigue

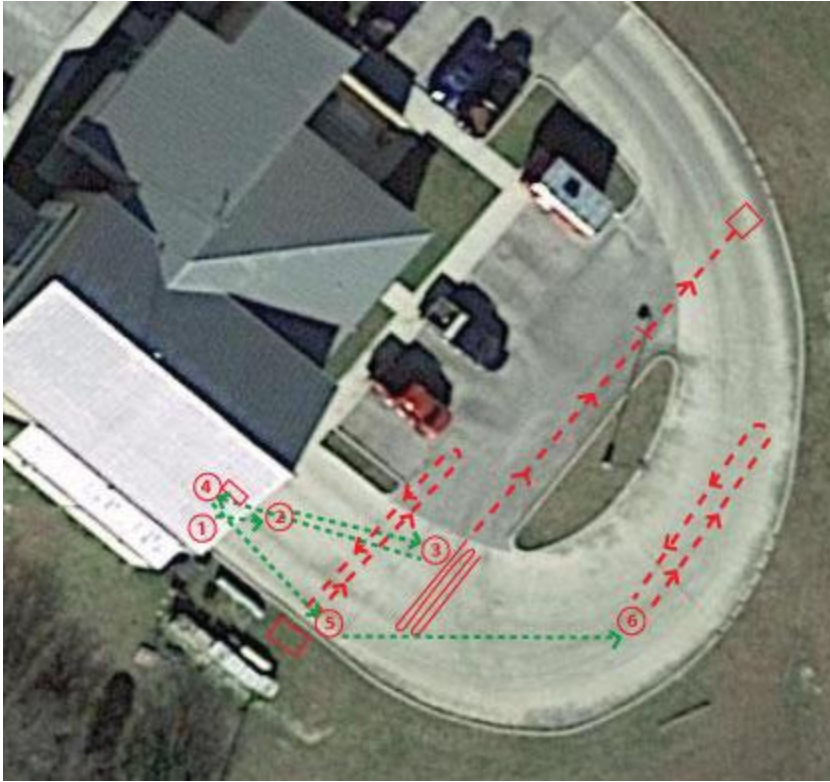
## **Method:**

All potential new hire candidates will be tested on a prescribed Physical Ability Course that measures certain aspects of job-related fitness as well as the ability to perform specific job functions. By ensuring that these individuals possess a minimum fitness standard, this will ensure that these personnel will be able to keep our citizens safe and perform their jobs effectively.

All candidates will perform the entire test in a weighted (35lb) vest, bump cap helmet, and work gloves (provided by Seguin Fire Department). Participants are required to wear a T-shirt, athletic shorts or pants, and closed toe athletic shoes. No jewelry is allowed to be worn during testing.

The new hire candidate will complete the Physical Agility Course as outlined below, adhering to the listed safety practices. The course (after the stair climb) must be completed in 5 minutes and 30 seconds or less. If a candidate performs an action that constitutes a critical failure, they will receive two warnings to correct the behavior. If the candidate is unwilling or unable to correct the behavior or action, he/she will be removed from the course and will receive a failing score. Any candidate who does not complete the course in the allotted time will also receive a failing score.

## Course Map



### Order of Events:

1. Stair Climb
2. Ceiling Breach and Pull
3. Hose Drag
4. Vertical Ventilation
5. Equipment Carry
6. Victim Rescue

## **EVENT #1 : Stair Climb**

### **EQUIPMENT**

StairMaster StepMill, 50 feet of 2 ½" hose (bundle)

### **PURPOSE OF EVALUATION**

This event is designed to simulate the critical tasks of climbing stairs in full protective clothing while carrying a high-rise pack (hose bundle) and climbing stairs in full protective clothing carrying firefighter equipment. This event challenges the candidate's aerobic capacity, lower body muscular endurance and ability to balance. This event affects the aerobic energy system as well as the following muscle groups: quadriceps, hamstrings, glutes, calves, and lower back stabilizers.

### **EVENT**

The timing of the test begins when the proctor calls out "START." The proctor will also press the appropriate buttons on the stepmill, setting the rate at level 7 (60 steps per minute).

For the test, the candidate is required to walk on the StepMill at a set stepping rate of 60 steps per minute [Level 7] for 3 minutes. The proctor then presses the appropriate buttons to stop the StepMill and the candidate steps down from the machine. The hose bundle is then removed from the candidates shoulders. This concludes the event.

The stopwatch for the rest of the agility course begins when the hose bundle is removed from the candidate's shoulders. The candidate is then allowed to rest for 1 minute before beginning the remainder of the course, although this is not a requirement (stopwatch time will continue during the rest period).

After the voluntary rest period (maximum 1 minute, no minimum), the candidate walks 15 feet to the next event.

### **ALLOWED PRACTICES**

The candidate is allowed to hold the handrails for balance. The candidate is given up to two warnings for bearing their body weight on the handrails / wall.

### **REASONS FOR FAILURE**

The candidate falls or voluntarily dismounts the Step Mill after the start of the test.

The candidate bears weight on the handrails / wall after the start of the test despite two previous warnings.

Falling demonstrates poor balance or muscular endurance and could cause injury to the candidate. Using the handrails or wall for weight bearing gives the candidate a mechanical advantage that may not be available to them on the fire ground or demonstrates poor balance, conditioning or muscular endurance.

### **EXERCISES TO PREPARE FOR THIS PHASE OF TESTING**

Light weight or body weight squats to failure, running hill repeats, stair climbing.

## **EVENT #2: Ceiling Breach and Pull**

### **EQUIPMENT**

6 ft pike pole, ceiling breach prop with 45lb weighted plate

### **PURPOSE OF EVALUATION**

This event is designed to simulate the critical task of breaching and pulling down a ceiling to check for fire extension. This event challenges the candidate's aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, deltoids, trapezius, triceps, biceps, and muscles of the forearm and hand (grip).

### **EVENT**

During this event, the candidate takes a 6 ft pike pole and places the pike end within the designated cradle of the ceiling breach prop. The candidate fully extends the pike pole overhead, with full extension of the upper arm. The candidate then removes the pike pole from the cradle, and uses the hook end to pull down on the pull ring of the prop. The pike pole is then used to pull the prop downward. These two actions are repeated in this order a total of 10 times.

The candidate is permitted to stop and, if needed, adjust the grip. If the candidate does not successfully complete a repetition (i.e. complete the up and down motion), the proctor calls out "MISS" and the candidate must perform the correct phase of the exercise again to complete the repetition. The event ends when the applicant completes the final repetition as indicated by the proctor who calls out "DONE".

After this event, the candidate walks 50 feet to the next course event.

### **ALLOWED PRACTICES**

The candidate receives one warning for dropping the pike pole on the ground. The candidate is permitted to stop and to re-establish grip.

### **REASONS FOR FAILURE**

Failure to maintain control and/or dropping of the pike pole indicates poor grip strength and muscular endurance.

### **EXERCISES TO PREPARE FOR THIS PHASE OF TESTING**

Dumbbell shoulder press, shrugs, lat pull down

## **EVENT #3: Hose Drag**

### **EQUIPMENT**

100 feet (60 m) of double jacketed 1 3/4-inch (44-mm), marked at 6 feet from the nozzle. 50 feet (30 m) of double jacketed 2 ½" hose (roll), secured to the end of the 1 ¾" hose for added weight.

Automatic Nozzle - 6 lbs (± 1lb), 3 kg (± .5 kg)

### **PURPOSE OF EVALUATION**

This event is designed to simulate the critical tasks of dragging an uncharged hoseline from the fire apparatus to the fire occupancy. This event challenges the candidate's aerobic capacity, lower body muscular strength and endurance, upper back muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, calves, lower back stabilizers, biceps, deltoids, upper back, and muscles of the forearm and hand (grip).

### **EVENT**

During this event, the candidate grasps an automatic nozzle attached to 100 feet(60 m) of 1 3/4-inch (44-mm) hose with a pony section of 2 ½" hose attached to the end for weight.

The candidate places the hoseline over the shoulder or across the chest, not exceeding the 6-foot (2.44-m) mark.

The candidate is permitted to run during the hose drag.

The candidate drags the hose 90 feet (22.86 m) past a predetermined point at 75 ft (cone) to a marked box. The candidate then stops within the marked 5 foot x 7 foot (1.52 m x 2.13m) box, drops to at least one knee and pulls the hoseline until the 2 ½" pony section is completely across the finish line. During the hose pull, the candidate must keep at least one knee in contact with the ground and knee(s) must remain within the marked boundary lines. This concludes the event.

The candidate walks 130 feet to the next event.

### **ALLOWED PRACTICES**

The candidate is given two warnings to keep one knee down. The candidate is given two warnings to keep the knees in bounds. The candidate is given two warnings for taking one step out of the box. The candidate is permitted to run during the hose drag.

### **REASONS FOR FAILURE**

The candidate fails to go past the initial predetermined point.

The candidate takes three separate steps out of the back of the box.

The candidate does not keep one knee in contact with the ground.

The candidate places any part of his/her body outside of the marked boundary once the pull phase has begun.

Running beyond the marked path gives the candidate a mechanical advantage by decreasing the distance required to pull the hose by hand. This advantage may not be available on the fire ground. This demonstrates a lack of upper body strength by using lower body strength to compensate. By not keeping their knee on the floor a candidate could compensate for a deficiency in grip and upper body strength by standing up.

### **EXERCISES TO PREPARE FOR THIS PHASE OF TESTING**

Running hill intervals, over the shoulder tire drags, back squat, rowing, bicep curls

## **EVENT #4: Vertical Ventilation**

### **EQUIPMENT**

Keiser Force Machine, 10-pound (4.54-kg) Sledgehammer

### **PURPOSE OF EVALUATION**

This event is designed to simulate the critical task breaching a roof with an axe. This event challenges the candidate's aerobic capacity, upper body muscular strength and endurance, lower body muscular strength and endurance, balance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: triceps, upper back, trapezius, and muscles of the forearm and hand (grip).

### **EVENT**

During this event, the candidate will use a rubber-coated sledgehammer and strike the sled of the Keiser Force Machine prop. The candidate will drive the sled with the sledgehammer until the sled reaches the opposite end of the prop. Once the event is complete as indicated by the testing proctor, the candidate will set down the sledgehammer and that will conclude this event.

The candidate then walks 55 feet to the next event.

### **ALLOWED PRACTICES**

The candidate may stop to adjust their grip on the hammer, or set the hammer down to adjust grip.

### **REASONS FOR FAILURE**

If the candidate does not maintain control of the sledgehammer and releases it from both hands while swinging, it constitutes a failure, the test time is concluded and the candidate fails the test. The second infraction will constitute a failure which will conclude the test.

### **EXERCISES TO PREPARE FOR THIS PHASE OF TESTING**

Bicep curls, Tricep extensions, Push-ups, Sledge hammer swings

## **EVENT #5: Equipment Carry**

### **EQUIPMENT**

Two 45lb sandbags with handles, elevated platform ft in height

### **PURPOSE OF EVALUATION**

This event tests the participant's ability to take power tools from a firetruck, carry them to an emergency scene, and return them to the truck. Firefighting requires various equipment that will need to be carried to different locations depending on the location and type of emergency. This phase of the test is designed to test the participant's aerobic capacity, upper body muscular strength and endurance, lower body muscular endurance, grip endurance, and balance.

### **EVENT**

The candidate picks up the two sandbags, which have been set on the elevated and places them on the ground in the marked area. The candidate is allowed to take the bags off the prop individually or together, so long as the bags are not dropped from the standing position. If either of the bags are dropped during this first phase, the candidate will be allowed one opportunity to place the bags back on the prop and begin again (stopwatch time will continue). The candidate then picks up the two sandbags from the ground at the same time and walks with the sandbags 50 feet to a cone, walks around the cone, and then returns the bags to the marked area on the ground.

The candidate walks 60 feet to the next event.

### **ALLOWED PRACTICES**

The candidate is allowed to remove the sandbags from the Forcible Entry Prop either individually or separately so long as they are not dropped from the standing position. The candidate is allowed to set the tools on the ground to adjust and re-establish the grip.

### **REASONS FOR FAILURE**

The candidate is not allowed to run at any point during this event.

The candidate is not allowed to drop or lose control of the sandbags during the walking portion of the test.

Dropping the equipment could injure the candidate and demonstrates poor grip strength or muscular endurance. Running with equipment could cause injury if the candidate trips.

### **EXERCISES TO PREPARE FOR THIS PHASE OF TESTING**

Farmer's carry, deadlifts, pull-ups, pulling and lifting exercises that tax the grip

## **EVENT #6: Victim Rescue**

### **EQUIPMENT**

160-pound Mannequin

### **PURPOSE OF EVALUATION**

This event is designed to simulate the critical task of removing a victim from a fire scene. This event challenges the candidate's aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, trapezius, deltoids, latissimus dorsi, and biceps.

### **EVENT**

During this event, the candidate grasps a mannequin, drags it 35 feet to a pre-positioned cone, makes a 180° turn around the cone without knocking it over, and continues an additional 35 feet to the finish line. The candidate is permitted to drag the mannequin in a backwards manner of preference so long as the task does not risk health/safety. The candidate is permitted to lower the mannequin to the ground to adjust their grip. The entire mannequin must be dragged past the marked finish line. This concludes the event.

### **ALLOWED PRACTICES**

The candidate is permitted to lower the mannequin to the ground to adjust their grip as long as the task is completed within the established time limit. The candidate is allowed to alter their gripping/lifting/dragging technique during the exercise so long as the task is completed within the established time limit.

### **REASONS FOR FAILURE**

Failure to complete within allotted time limit.

Knocking over the halfway point cone.

Not dragging or moving the mannequin in a backwards fashion.

Continuing the exercise in a manner that is at risk of health/safety after a verbal warning.

### **EXERCISES TO PREPARE FOR THIS PHASE OF TESTING**

Deadlift, upright row, sled drags, wall sits



## Testing Standards and Safety Practices

### Equipment List:

- 4 - 35lb weighted plate vests
- 4 - black bump cap style helmets
- 4 - stopwatches
- 1 - 2 ½" hose bundle, folded to length and secured with duct tape
- Stairmaster StepMill
- Ceiling breach and pull prop with 45lb weighted plate
- 1 - 6 ft pike pole
- 2 - 50 ft sections of 1 ¾" double jacketed hose
- 1 - 25 ft section of 2 ½" double jacketed hose
- 1 - automatic fog nozzle
- Keiser Force Machine
- 2 - rubber coated red sledge hammers
- 2 - 45 lb kettlebell sandbags
- Elevated surface measuring ft in height
- 160 lb red mannequin
- 5 - traffic cones
- Clipboard with testing log sheet (includes candidates names and recorded times)
- Clipboard with Physical Ability Testing Waiver forms

### Safety Practices

- All candidates are required to perform a walk-through of the course prior to starting their physical ability test.
- Vital signs including heart rate, blood pressure, and SpO2 will be collected on every candidate prior to and after testing.
  - Acceptable guidelines:
    - blood pressure less than 160 and greater than 90 systolic
    - heart rate less than 120 and greater than 50 beats per minute
    - SpO2 greater than 94%
  - If candidate's vital signs are outside the acceptable guidelines, the candidate will be evaluated by medics on staff who will determine candidate's ability to continue with testing
- All candidates must sign a Physical Ability Testing Waiver prior to participating in any physical ability tests.
- All candidates will have two testing proctors with two separate stop watches.
  - One proctor will be responsible for calling out failures and completion of events/exercises.
  - Both times recorded by the stopwatches will be recorded on the testing log sheet
- Any candidate showing signs of extreme dehydration, heat sickness, or other medical emergency will be immediately removed from the course at the testing proctor's discretion.

## Testing Standards

- Testing proctors will not be allowed to encourage, discourage, or otherwise influence any candidate performing their testing. The only verbal remarks that can be made must pertain to critical failures, directions to the next station, directions for how to complete the exercises, or the conclusion of an event/exercise.
- Testing proctors will ensure that all stations and events have their equipment returned to the designated start positions prior to each candidate beginning their test.
  - Stair Climb: One testing proctor will remove the hose bundle from the candidate's shoulder after the event is concluded.
  - Ceiling Breach and Pull: One testing proctor will ensure that the pike pole returns to its designated resting position after the candidate has completed this event (marked on the prop).
  - Hose Drag: The 2 ½" bundle shall be placed in its designated area (marked on the pavement), and the 1 ¾" hose will be laid out on the pavement (marked with tape) in the same fashion after every candidate completes this event.
  - Keiser Sled: The sled shall be returned to the front of the prop with the edge white plastic base meeting with the edge of the metal platform. The sledgehammer shall be returned to the front of the prop, leaning against the sled, after every candidate completes the event. The metal base that holds the sled shall be wiped down with a clean cloth at the beginning of testing and after every 5th candidate.
  - Equipment Carry: The sandbags shall be returned to the raised platform after every candidate completes the event.
  - Victim Rescue: The mannequin shall be returned to the starting cone in a supine position with the head facing the direction of travel after every candidate completes the event.
- An optional practice session will be held before the testing date.
  - Candidates will be allowed to practice any of the stations in part, or the course in full, but will not be timed.
  - Candidates must still return on testing day regardless of their performance on the practice date.
- All other candidates present on testing day will wait at a designated location away from the testing area to ensure each candidate can test privately
  - Each candidate's score shall not be shared with anyone except the candidate and the testing monitors.
- Any candidate who does not pass the test will be allowed to come back to test during the next application/testing cycle.