

# SAN MARCOS

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## Firefighter Entrance

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## Physical Ability Exercise

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This physical ability exercise consists of three separate events. Applicants must successfully complete each event to pass this Physical Ability Exercise (PAE). This exercise was developed to allow the San Marcos Fire Department (SMFD) to establish a list of trainable candidates who are physically able to perform essential job tasks at fire scenes. The tools and equipment were chosen to provide the highest level of consistency, safety, and validity in measuring an applicant's physical abilities.

Applicants should bring a swimsuit and towel for the swim portion of the PAE. Applicants will need to bring footwear with no open heel or toe. With the exception of the swim exercise, applicants must wear long pants, bunker coat, structural helmet with chin strap, bunker gloves, and footwear with no open heel or toe. During the aerial ladder exercise applicants will also wear a self-contained breathing apparatus (SCBA) with the face piece donned. An SCBA without the face piece will be worn during the ability course. All required personal protective equipment for each event must be worn for the entirety of that event. If at any time a piece of equipment separates from the applicant, they are to re-don that equipment immediately before proceeding (applicant's time does not stop). Watches, loose or restrictive jewelry, and outside gear are not permitted. SCBA, bunker coat, helmet, and bunker gloves will be furnished.

### EVENT 1: SWIM EXERCISE

**THIS IS A PASS/FAIL EXERCISE WITH A MAXIMUM ALLOWABLE TIME OF 2 MINUTES AND 50 SECONDS**

#### Equipment

This event will be conducted in a swimming pool and use a 10 pound weight.

#### Purpose of Evaluation

This event is designed to assess the applicant's ability to swim. This event challenges an applicant's aerobic capacity, lower body muscular endurance, and ability to balance. This event affects an applicant's aerobic energy system as well as the following muscle groups: quadriceps, hamstrings, glutes, calves, lower back stabilizers, and shoulders.

#### Description

Each applicant will swim 4 lengths of a 25 yard pool totaling 100 yards using any swim stroke they choose. Applicants are not allowed to touch the bottom or hang on the end of the pool at any time. One warning will be allowed but the second will result in failure of the swim exercise. During the last lap, the applicant will be required to go under water, retrieve a 10 pound weight, and swim with it while staying underwater the remaining 16 feet to the end of the pool.

**The swim exercise is a pass/fail exercise with a maximum allowable time of 2 minutes and 50 seconds.**

#### Failures:

- If the applicant receives 2 warnings for touching the bottom or hanging on the end of the pool.
- If the applicant is unable to stay underwater while carrying the 10 pound weight the final 16 feet to the end of the pool.
- If the applicant fails to successfully complete the swim within the allotted time.

## City of San Marcos Firefighter Applicant Ability Exercise

### EVENT 2: AERIAL LADDER

PASS/FAIL

#### Equipment

100' aerial ladder

#### Purpose of Evaluation

This event simulates the critical fire ground task of ascending and descending an aerial ladder device, while wearing the appropriate Personal Protective Equipment (PPE) including SCBA.

#### Description

Applicant begins by climbing 100 feet up the aerial ladder (70 degree angle). For safety purposes, this is a non-timed event. The applicant must ascend the ladder without stopping. Only one warning will be given for stopping; the second occurrence will result in failure of this event. Upon reaching the top, the applicant will descend at a safe pace.

#### Failures

- If the applicant is unable to reach the top and descend to the starting position.
- If the applicant receives 2 warnings for stopping while ascending.

## City of San Marcos Firefighter Applicant Ability Exercise

### EVENT 3: ABILITY COURSE

**THIS IS A PASS/FAIL EXERCISE WITH A MAXIMUM ALLOWABLE TIME OF 9 CONTINUOUS MINUTES**

Event three of the PAE requires applicants to progress along a predetermined path in a continuous manner. The course is structured in a sequence that simulates fire scene events. Applicants **MUST WALK** between and during all events except during the Hose Drag Obstacle. The walk allows the applicant approximately 20 seconds to recover and regroup between each obstacle. Applicants who receive a second warning for running between or during events (see exception above) will be disqualified. If time elapses prior to the completion of all obstacles or an obstacle is not completed, the event is concluded and the applicant fails.

#### **OBSTACLE 3.1: STAIR CLIMB**

##### **Equipment**

This obstacle uses a step mill set to approximately 60 steps per minute.

##### **Purpose of Evaluation**

This obstacle is designed to simulate the critical tasks of climbing stairs in full protective clothing while wearing an SCBA. This obstacle challenges an applicant's aerobic capacity, lower body muscular endurance, and ability to balance. This obstacle affects an applicant's aerobic energy system as well as the following muscle groups: quadriceps, hamstrings, glutes, calves, and lower back stabilizers.

##### **Description**

The applicant must complete two minutes of uninterrupted stair climbing at the approximate rate of 60 steps per minute. An applicant may use the rails for balance but not for support. Upon conclusion of the stair climb exercise the applicant shall immediately walk 85 feet within the established walkway to the next obstacle.

##### **Failures**

- If the applicant fails to complete the stair climb exercise.
- If the applicant uses the rails to support your weight.

#### **OBSTACLE 3.2: WALL CLIMB**

##### **Equipment**

This obstacle uses a four foot wall.

##### **Purpose of Evaluation**

This obstacle is designed to simulate the critical task of climbing over fences, walls, or debris fields to gain access to the victim or emergency scene. This obstacle challenges an applicant's aerobic capacity, upper and lower body muscular strength and endurance, and anaerobic endurance. This obstacle affects an applicant's 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, biceps, and muscles of the forearm and hand (grip).

##### **Description**

For this obstacle, the applicant must climb over the wall. It is permissible to make multiple attempts if time allows.

##### **Failures**

- If the applicant is unable to get over the wall.

## City of San Marcos Firefighter Applicant Ability Exercise

### OBSTACLE 3.3: VENTILATION

#### **Equipment**

This obstacle uses a Keiser Sled and a 9-pound dead blow hammer.

#### **Purpose of Evaluation**

This obstacle is designed to simulate the critical tasks of performing roof ventilation while wearing an SCBA. This obstacle challenges an applicant's aerobic capacity, upper body muscular strength and endurance, lower body muscular strength and endurance, balance, grip strength and endurance, and anaerobic endurance. This obstacle affects an applicant's aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, glutes, triceps, upper back, trapezius, and muscles of the forearm and hand (grip).

#### **Description**

For this obstacle, you must use a 9-pound dead blow hammer. The applicant shall use the hammer to strike the beam, continuing until the beam has been moved the prescribed length of the sled. After the beam has been moved the prescribed length the applicant shall drop the sledge hammer and walk 85 feet within the established walkway to the next obstacle.

#### **Failures**

- If the applicant does not maintain control of the hammer and releases it from both hands while swinging.
- If the applicant uses the hammer to push or pull the beam.

### OBSTACLE 3.4: CEILING PULL

#### **Equipment**

This obstacle uses a pike pole.

#### **Purpose of Evaluation**

This obstacle is designed to simulate the critical task of breaching and pulling down a ceiling to check for fire extension. This obstacle challenges an applicant's aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This obstacle affects an applicant's 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).

#### **Description**

For this obstacle, the applicant must pick up the pike pole and stand within the boundary established by the marking on the floor. Using a push – pull motion, begin touching the tip of the pike pole against the wall with the high point being above eight feet and the low point being below six feet. Continue this repetitive motion until the applicant has completed 100 push-pull cycles. Repetitions will be counted for the applicant. If the applicant fails to reach the mark during any of the push-pull cycles, the proctor will indicate “no good” and that cycle will not be counted. Upon completion of this obstacle, the applicant will walk 85 feet staying within the marked walkway to the next obstacle.

#### **Failures**

- If the applicant drops the pike pole to the floor during or after the obstacle.

### OBSTACLE 3.5: LADDER CARRY AND RAISE

#### **Equipment**

This obstacle uses one 14-foot fire department roof ladder.

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### Purpose of Evaluation

This obstacle is designed to simulate the critical tasks of carrying and placing a ground ladder at a fire scene. This obstacle challenges an applicant's aerobic capacity, upper body muscular strength, lower body muscular strength, balance, grip strength, and anaerobic endurance. This obstacle affects an applicant's aerobic and anaerobic energy systems as well as the following muscle groups: biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quadriceps, and hamstrings.

### Description

For this obstacle, the applicant must pick up the 14-foot roof ladder and carry it 35 feet along the marked pathway, raise and place it against the wall at the proper climbing angle with the correct end to the ground. Upon approval from the proctor, the applicant shall lower the ladder and carry it back to the start point laying it down as it was at the beginning. Upon completion of the obstacle, walk 85 feet within the established walkway to the next obstacle.

### Failures

- If the applicant raises the ladder with the wrong end to the ground.
- If the applicant loses control of the ladder at any time.
- If the applicant drops the ladder rather than placing it back on the ground.

## OBSTACLE 3.6: EQUIPMENT CARRY

### Equipment

This obstacle uses two 40 lb. kettle bells and a shelf replicating a storage cabinet on a fire truck.

### Purpose of Evaluation

This obstacle is designed to simulate the critical tasks of removing equipment from a fire apparatus, carrying it to the emergency scene, and then returning the equipment to the fire apparatus. This obstacle challenges an applicant's aerobic capacity, upper body muscular strength and endurance, lower body muscular endurance, grip endurance, and balance. This obstacle affects an applicant's aerobic energy system as well as the following muscle groups: biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quadriceps, and hamstrings.

### Description

For this obstacle, the applicant must remove the two kettle bells from the shelf, one at a time, and place them on the ground. Pick up both items, one in each hand, and carry them while walking 50 feet around the drum, then back to the starting point. The applicant is permitted to place the item(s) on the ground and adjust their grip. Once back at the shelf the two kettle bells must be placed on the designated shelf, either one at a time or both at once. The obstacle is concluded once both kettle bells are safely back on the shelf. Walk 85 feet within the established walkway to the next obstacle.

### Failures

- If the applicant drops a kettle bell at any time during the exercise.

## OBSTACLE 3.7: HOSE DRAG

### Equipment

This obstacle uses an uncharged 1 3/4-inch fire hose with a nozzle. The hose line is marked at 6 feet past the coupling at the nozzle to indicate the maximum amount of hose the applicant is permitted to drape across their shoulder or chest. The hose line is also marked at the first coupling to indicate the amount of hose line that the applicant must pull into a marked boundary box before completing the exercise.

## City of San Marcos Firefighter Applicant Ability Exercise

### Purpose of Evaluation

This obstacle is designed to simulate the critical tasks of dragging an uncharged hose line from the fire apparatus to the fire occupancy and pulling an uncharged hose line around obstacles while remaining stationary. This obstacle challenges an applicant's aerobic capacity, lower body muscular strength and endurance, upper back muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This obstacle affects an applicant's 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).

### Description

For this obstacle, the applicant must grasp a hose line nozzle attached to 200 feet of 1 3/4-inch hose. The hose line may be positioned over the applicant's shoulder or across their chest, not exceeding the six foot mark. The applicant is permitted to run during the hose drag. Drag the hose 75 feet to a pre-positioned drum, make a 90 degree turn around the drum, and continue an additional 25 feet. Stop within the marked five foot x seven foot box, drop to at least one knee, and pull the hose line until the hose line's 50-foot mark crosses the finish line. During the hose pull, the applicant must keep at least one knee in contact with the ground and knee(s) must remain within the marked boundary lines. This concludes the obstacle. Walk 85 feet within the established walkway to the next obstacle.

### Failures

- During the hose drag, if the applicant fails to go around the drum or goes outside of the marked path.
- During the hose pull, the applicant is warned if at least one knee is not kept in contact with the ground. The second infraction constitutes a failure.

## OBSTACLE 3.8: RESCUE

### Equipment

This obstacle uses a rescue dummy. A provided webbing harness may be used as well.

### Purpose of Evaluation

This obstacle is designed to simulate the critical task of removing a victim or injured partner from a fire scene. This obstacle challenges an applicant's aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This obstacle affects an applicant's 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, biceps, and muscles of the forearm and hand (grip).

### Description

For this obstacle, the applicant must drag a rescue dummy (by hand or by using webbing to rig a rescue harness) 50 feet to a pre-positioned drum, make a 180degree turn around the drum, and continue an additional 50 feet to the finish line. The applicant is not permitted to grasp or rest on the drum. It is permissible for the dummy to touch the drum. The applicant is permitted to drop and release the dummy and adjust their grip. The entire dummy must be dragged across the marked finish line. This concludes the obstacle.

### Failures

- If the applicant is unable to complete the dummy drag.
- If the applicant grasps or rests on the drum.

**Upon completion of all eight obstacles, the official time keeper will inform the applicant of their time and whether they passed or failed this event.**