

Always consult with a medical doctor and certified exercise specialist before undertaking new, or unfamiliar, types of strenuous physical activity and exercise.

- This document is NOT a detailed training program. These suggestions are meant to build on an existing level of fitness and to enhance the ability to perform physically demanding tasks relevant to firefighting.
- A well-rounded approach to the career of firefighting should include a long term plan to develop and maintain a level of physical activity suited to both performance and good health.

Structural firefighting is a physically demanding occupation and because of this a certain level of fitness is expected before becoming a firefighter. The University of Alberta Firefighter Physical Aptitude Test has been designed to challenge the cardiovascular system and muscular endurance, strength and power at a level consistent with the demands of firefighting while wearing personal protective clothing. None of the components of the test can exactly duplicate the variety of challenges a firefighter might face, however, the work required to complete each test simulates the physical aptitude that a firefighter should have in order to work safely and effectively.

Physical Preparation for the Test

- *Understand the Physical Aptitude Test* – read the information package and descriptions carefully so you know what you are preparing for
- *Self-Evaluation* – review your training history and honestly evaluate your personal strengths and weaknesses. Try to simulate all of the elements of the test use this a personal baseline for future comparison consider your performances relative to the minimally acceptable performance times
- *Set training objectives* – The suggestions that follow “assume” the need for equal preparation in all elements in order to succeed, however, based on your self-evaluation, you may wish to place more emphasis on some elements (e.g., hose drag) and less on another (e.g., treadmill).
- *Design a simple program* – choose the fewest number of exercises and the simplest progressions possible. The quality of your workouts depends on the correct application of intensity and work to rest ratios. High intensity (load+speed) efforts cannot be repeated without adequate intervals of rest.
- *Monitor your training* – keep track of your training sessions in a simple journal. Are you able to complete every workout? Are you planning adequate work and adequate recovery days? You will need to periodically modify your training if it is too hard or too easy.
- *Repeat the self-evaluation* – after 4 and 9 weeks of training, repeat the simulated tests to see how the training has improved your performance. Remember to give yourself at least one day of rest before attempting the test. After each self-evaluation, adjust your training plan accordingly.

Training Guidelines

- Use the information in this package as a guide. Remember that it is not an individualized program.
- Seek professional advice and assistance to help with the self-evaluation and individualizing these suggestions to meet your needs.
- If you want to build fitness in a particular component then you will probably need to complete three challenging workouts each week.
- If you are satisfied with your current performance level in a particular component, then you can probably maintain that level of fitness by completing one challenging workout each week.
- Good luck with your training and your test performance!

THE TREADMILL TEST evaluates your ability to complete a representative sample of endurance work while wearing protective clothing and carrying load; and second, to evaluate your maximal work capacity under load.

Mindset: Be prepared to work hard and sustain it.

The incline and the addition of about 23 kg is what will challenge you the most NOT the speed. Be prepared to climb, under load, knowing that the next minute will be harder than the one you just finished...

Frequency – you should work on your endurance fitness for the treadmill test 2 or 3 times per week

<u>Suggested training adjustment</u>		<u>Sample</u>
Running on flat ground	→→→ Walk or jog at a brisk pace and a steep incline. Climb stairs	<ul style="list-style-type: none"> • Work at a high intensity for 2 min (3.5-4.0 mph) (12-15% incline plus 23 kg backpack) • Rest for 1-2 minutes (3.0-3.5mph) (1-2% incline) • Complete 5-8 of these intervals (15-30 minutes) • Increase the grade on your next workout if you feel you can do more than 8 intervals • Make sure the backpack is comfortable and weighs ~20-25 kg (45-55 lbs) • Do not overdue the amount of extra clothing you wear but some heat stress will benefit you.
Long continuous workouts	→→→ Shorter duration (2-4min) higher intensity (85%+) intervals	
Clothing = Shorts and T shirt	→→→ Clothing = backpack and coveralls	

General Guidelines

- Ensure an adequate warm up period which gradually prepares you for hard work
- Ensure at least a five minute cool down period of light activity when your workout is complete
- Do not overdue the amount of extra clothing you wear. You should feel hot but it should not impair your ability to complete the hard work and it should not cause unnecessary discomfort, dizziness or lightheadedness. A simple pair of coveralls for example will make you feel quite a bit hotter.
- Simulate the protective clothing and SCBA by wearing a backpack that is comfortable and weighs 20-25 kg (45-55 lbs). If you do not have a backpack then try a jogging (>5.0mph) unloaded at or above 6-8% grade

Frequency, Intensity, Time, Type, Progression

- You should spend 20-40 minutes on this element of your fitness 2 or 3 times per week
- With a 20-25 kg backpack work at 3.6 mph and 12% grade for 2 minutes, recover for 1 minute then repeat
- Complete 5 of these intervals each workout during week 1 (15 minutes) add one or two intervals each week to a maximum of 10 intervals per workout (30 minutes)
- If you can complete a 30 minute workout then reduce the number of intervals and add grade or speed (intensity). Resume adding intervals each week at the new more difficult intensity
- Add 15-20 minutes of stair climbing once per week to enhance leg strength and endurance

You can use the **Rating of Perceived Exertion (RPE)** scale shown on the right to gauge your intensity
Treadmill intervals should challenge you at the 15 to 19 difficulty where 20 is the hardest effort you have ever given

Borg Scale of Perceived Exertion (RPE)	
6	
7	Very, very light
8	
9	Very light
10	
11	Fairly light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Very, very hard
20	

THE JOB RELATED TESTS evaluate your ability to use tools and equipment to lift, carry, push, pull, drag and hammer. You must also walk and climb across distances (7-30 m) similar to what is required on the job or in training. This work must be completed safely, however, it is generally accomplished with a sense of purpose and in some cases, urgency.

Mindset: Be prepared to move heavy objects for sustained amounts of time.

Many of the loads encountered during firefighting are heavy (25-85 kg, 40-180 lb, 500-600 N) good lifting technique and carrying ability are essential (including handgrip endurance). Be prepared to complete hard work against a considerable amount of resistance (the heavier the better) while maintaining a purposeful pace. The best way to prepare for this type of work is to ensure you use a range of heavy weights and clear enough space to mimic each type of task (15-20 m).

Frequency – you should work on your job related strength, endurance and power 2 or 3 times per week

<u>Suggested training adjustment</u>		<u>Sample</u>
Weightlifting with sets x repetitions	→→→	Try moving heavy objects a set distance or completing as many repetitions as possible in a fixed amount of time
Focusing on individual muscles	→→→	Incorporate more multi-joint /whole body dumbbell, barbell and sled exercises. Use muscle groups and coordinated movements to move heavy loads
Training in a tight space	→→→	Find places where you can practice, sled drags, rope pulls, and carries for distance

General Guidelines

- Ensure an adequate warm up period which includes trunk stabilization and multi-joint movements
- Correct poor quality movement patterns. **STOP** and seek assistance if you experience pain
- Preparing the body for multi-joint movement begins with a thoughtful approach to **Spine And Trunk Stabilization training** which ensures endurance of the core musculature and development of work capacity
- Ensure a cool down period of light activity once your workout is complete
- Wearing some additional clothing is a good approach to prepare for the effects heat stress will have on your performance. With that in mind do **NOT** overdue the amount of extra clothing you wear or the level of heat stress you expose yourself to.
 - The experience should not be punishing. The heat should not cause excessive discomfort, dizziness or lightheadedness. A simple pair of coveralls for example will make you feel quite a bit hotter.
 - You should always include appropriate intervals of rest and recovery between repeated intervals of hard work
 - You should be **well hydrated** before you begin training
- Simulate the protective clothing and SCBA by wearing a backpack that is comfortable and weighs 20-25 kg (45-55 lbs)
 - Wearing the extra load is not required, you can safely manipulate intensity using other methods, however load carriage is particularly helpful when training for all climbing and walking tests

Frequency, Intensity, Time, Type, Progression

- You should spend 20-40 minutes on this element of your fitness 2 or 3 times per week
- Use loads/weights that you perceive as “Heavy” or “Very heavy”
 - “Heavy” could be rated as “I can move this load safely 8 to 12 times or continuously for 20-40 s”
 - “Very Heavy” could be rated as “I can move this load safely 3 to 8 times or continuously for 10-20 s”
 - “Maximal” could be rated as “I can move this load safely one-time”
- Try to maintain **Work intervals** of 20-40 s OR distances of 10-20 m with **Rest intervals** of 10-60 s
- After 3-5 repeats take a longer 1.5 to 3 minute break (similar to the structure of the test)
- As your fitness improves you might try to increasing the load (up to Very Heavy), longer duration intervals (up to 40 s), shorter Rest (down to 10 s), greater distances (up to 20 m), or more intervals (up to 5 times)
- For example: A workout might consist of 3-5 of the following exercises.
 - With a Heavy load (2 x 45lb + dumbbells); complete a 15m **Carry**, then 10 s Rest, & repeat 3-5 times
 - With a Heavy load (45lb); complete **Deadlift static holds** for 35-40 s, then 10 s Rest, & repeat 3-5 times
 - With a Very heavy load; complete 10m **Sled Pushes**, then 20 s Rest, & repeat 3-5 times
 - With a Heavy load; complete cable column **Standing rows** for 20 s, then 10 s Rest, & repeat 3-5 times
 - With a Very heavy load; complete 15m **Backward Sled Drags**, then 20 s Rest, & repeat 3-5 times
 - With a Heavy load (45lb); SAFELY go up and down **Stairs** for 60 s, then 30 s Rest, & repeat 3-5 times
 - With a Very heavy load; (dumbbells in each hand); complete **Step Ups** for 15 s/leg, then a 30 s Rest, & repeat 3-5 times
 - With a Heavy load (15lb med ball); complete 5 **Forceful side tosses**, then 10s Rest, & repeat 3-5 times for each side of the body

[Video Demonstrations of the Tests](#)

- The following links are freely available on the internet and may help you to prepare. Sharing these links is not meant to be an endorsement of any persons or groups who have supplied these video or other products that they endorse or sell.*

Spine and Trunk Stabilization training

[Spine and Trunk Stabilization training](#)

Carries

[Pinch, Farmer Walk, Bottom Up,](#)

Deadlift, mid-thigh, static holds

[Dead lift with static hold](#)

Sled Marches, Pushes or Pulls

[Marches, Pushes, Pulls,](#)

Standing arm rows

[Standing Cable Row](#)

Backward Sled Drags

[Backward Drag](#)

Stairs (add a backpack rather than speed)

[Stairs](#)

Step-ups

[Step-Up](#)



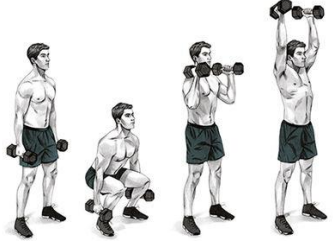


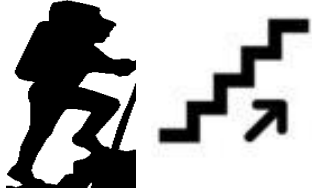



Forceful side tosses

[Side Toss](#)

Well hydrated

[Well Hydrated](#)

Rating of Perceived Exertion (RPE) scale shown on the right to gauge your effort	Borg Scale	You can use the thermal distress scale (TDS) on the right to gauge your level of heat strain	Thermal Distress Scale (TDS)
Expect that at the end of each interval your intensity is between 15 and 20 on this RPE scale	6	Expect to experience a rating between 5 and 7 on this TDS scale if your training includes wearing extra clothing	1 My body temperature is comfortable
	7 Very, very light		2
	8		3 I am starting to get hot
	9 Very light		4
	10		5 I am hot
	11 Fairly light		6
	12		7 I am very hot
	13 Somewhat hard		8
	14		9 The heat is unbearable
	15 Hard		
16			
17 Very hard	Take appropriate recovery measures if you are at or exceed a rating of 8 on the TDS scale		
18			
19 Very, very hard			
20			

Strength Training		
Seated rows	Inclined dumbbell press	Squat to press
 <p>40-50 lb/arm = 80-100lb</p>	 <p>35-50 lb/arm</p>	 <p>20-40lb /arm</p>
Plank with instability challenge	Walking lunges	Stair climbing with backpack or dumbbells
 <p>5 small circles with the upper body in each direction</p>	 <p>40-50 lb/arm = 80-100lb</p>	 <p>20-25kg back pack</p>
Rope Pulling	Sled Pushing	Dragging, pulling, pushing old tires
 <p>Repeated (15-20s) Heavy efforts Challenge your grip and upper body</p>	 <p>Steady, Very Heavy 10m at a time NOT light and fast</p>	 <p>Heavy repeated 15m efforts</p>