

Gwasanaeth Tân ac Achub  
De Cymru



South Wales  
Fire and Rescue Service

# BE MORE



AR-ALWAD  
ON-CALL

**FIREFIGHTER**

**PHYSICAL AND PRACTICAL ASSESSMENT**

This document is also available in Welsh

This booklet has been designed to explain the Physical and Practical assessment tests that form part of the application process on becoming an On-Call Firefighter within South Wales Fire and Rescue Service (SWFRS). We are committed to recruiting the best people to work with us and support our communities.

Please invest some time reading this as it has been written to help you.

## PHYSICAL AND PRACTICAL ASSESSMENT

The Physical and Practical Assessments are designed to assess your level of physical fitness in line with requirements of the role. Details of the physical fitness and healthy weight requirements, along with the physical and practical tests are provided within this booklet.

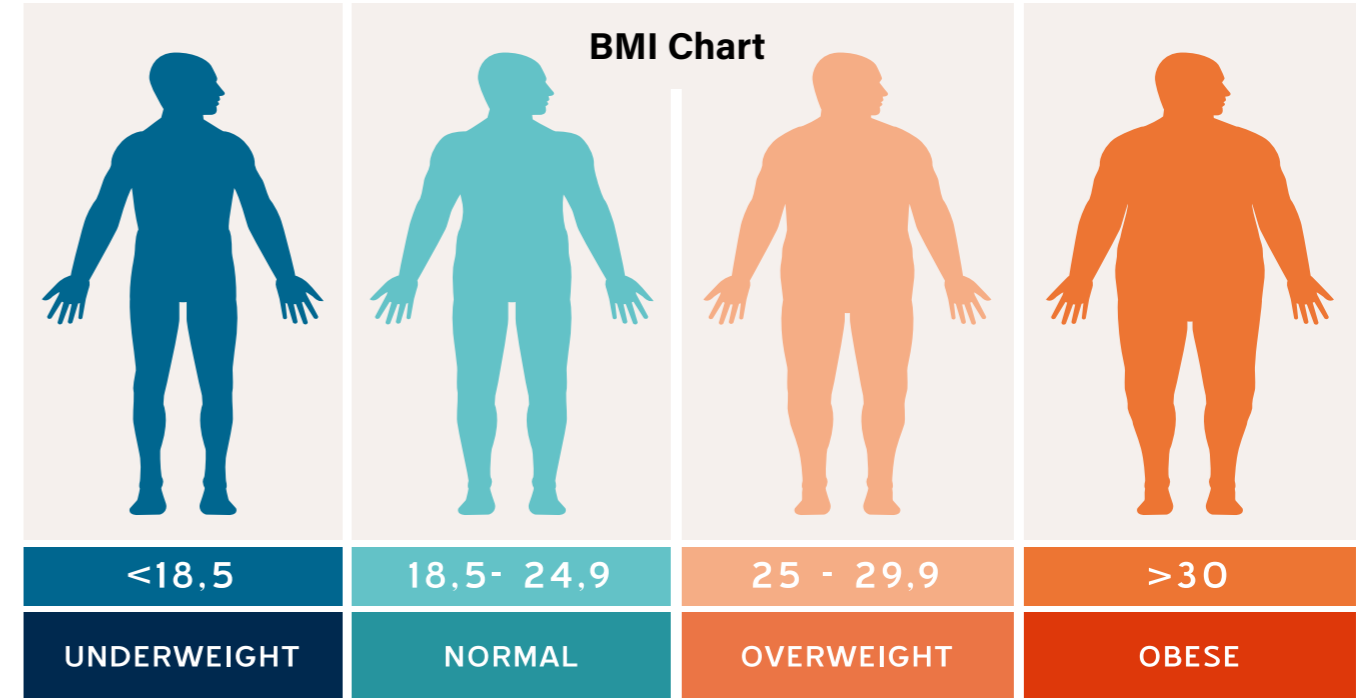
# PHYSICAL FITNESS

Firefighting can be a physically demanding and hazardous activity with potential for exposure to high physiological and environmental thermal loads. To ensure effective and safe operational performance an high level of physical fitness is essential.

Your level of physical fitness will be determined by measuring your performance during a number of physical and practical firefighting tasks. In addition you will be required to perform an 'aerobic' fitness test (bleep test) to predict your aerobic capacity (in ml/O<sup>2</sup>/kg/min). This allows us to assess your ability to perform exercise for longer periods which is important for safe firefighting.

The minimum requirement for candidates at recruitment is 42.3 ml/O<sup>2</sup>/kg/min (equivalent to level 8 shuttle 8 on the bleep test). If you progress to medical you will be required to demonstrate this level of fitness again on the chester Treadmill Walk Test to ensure that you have maintained the appropriate level of fitness.

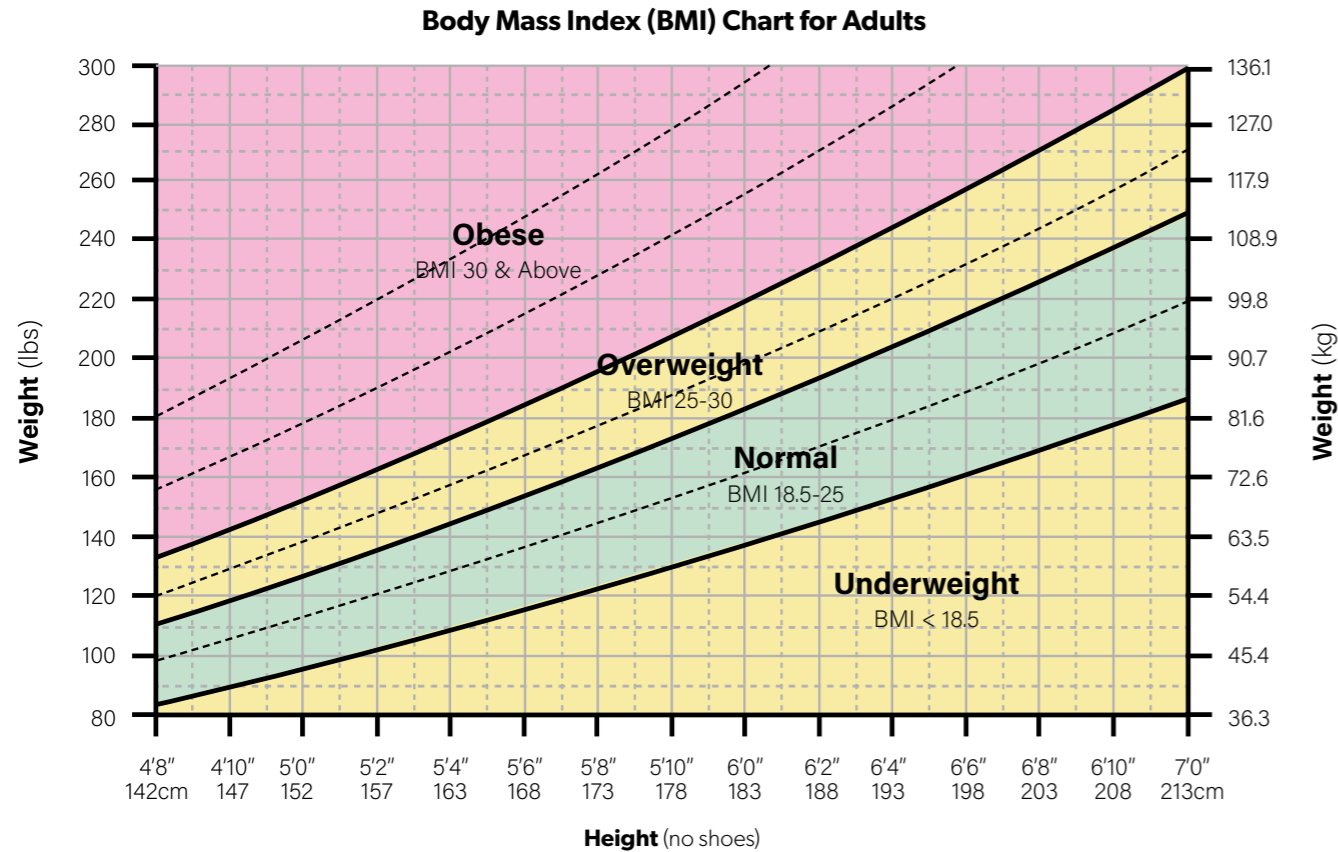
A healthy weight is important because underweight, overweight, and obesity, can have an adverse effect on firefighting performance, safety and on general health. Height and weight measurements and the calculation of Body Mass Index (BMI) are in the majority of cases a suitable means of confirming the weight category of individuals. The following table identifies the relevant BMI ranges and the associated weight categories.



The recommended BMI for candidates is within the healthy weight range i.e. 18.5 - 25.0. A small minority of individuals within a BMI in the overweight range may be reclassified as a healthy weight if an assessment of their body composition (by body fat measurement) indicates that the higher BMI is predominantly due to muscle development.

Candidates with a BMI of up to 27.5 may be considered acceptable subject to a satisfactory body fat measurement and a firm commitment to maintaining a healthy weight. Candidates with a BMI over 27.5 up to a maximum of 29.9, or a BMI under 18.5, could only be considered following a further assessment, a satisfactory body fat measurement, and confirmation of the absence of any risk factors.

# HEALTHY WEIGHT



You can calculate your own BMI by downloading a simple BMI App to your phone or by using the formula below.

$$\text{BMI} = \frac{\text{Weight in Kilogrammes}}{\text{Height in metres} \times \text{Height in metres}}$$

## Example

Your weight is 79kg. Your height is 1.8 metres.

$$\text{BMI} = \frac{79\text{kg}}{1.8 \times 1.8} = 24$$

# MULTI-STAGE SHUTTLE RUN (BLEEP) TEST

You will be required to undertake the multi-stage shuttle run (bleep) test to a minimum level of level 8 - shuttle 8, to demonstrate an appropriate level of aerobic fitness. You will be required to run back and forth between two lines 20 metres apart, maintaining the pace set by an audible sound. The pace increases at one minute intervals throughout the test. The test will end when the candidate reaches the required level or is unable to keep up with the audible signals.

If you require more information on how to prepare for the physical and practical tests safely, you can view all of the operational tests as well as download a Preparatory Physical Training Programme from our website.

# COMPONENTS OF THE PHYSICAL AND PRACTICAL ASSESSMENT

The following information will provide you with sufficient detail to assist you with the Physical and Practical Assessments. Please read the information carefully prior to attending your assessment day and it is highly recommended that you view the videos of the assessments provided on the South Wales Fire and Rescue website ([bit.ly/physicalandpractical](http://bit.ly/physicalandpractical)) and also visit your local Fire and Rescue Station to have an opportunity to practice prior to your assessment.

- Enclosed Space test
- Equipment Carry test
- Ladder Climb Test
- Casualty Evacuation Test
- Ladder Lift Simulator Test
- Ladder Extension Test
- Equipment Assemble Test
- Multi-Stage Shuttle Run (Bleep) Test



## THE ENCLOSED SPACE TEST

To complete the test successfully you will need to combine confidence, agility and stamina to negotiate the crawl way within the specified time.

### Test details

1. You will be required to negotiate a crawl way in a dark room.
2. You will start the test wearing a facemask with clear vision.
3. Using your hands to feel your way around, you should make your way through the crawl way until you reach the assessor at the other end, there is only one way through the crawl way; forward, left, right, up or down and there are **NO** doors to open.
4. There is a drop-down section from the upper to the lower level which you must negotiate feet first.
5. When you reach the assessor the other end, they will stop you, pause the stopwatch and say **"TIME OFF"** They will then place an obscuration cover over your face mask, turn you around and tell you to return along the route you have just taken. You will be given the command **3-2-1-GO** and the stopwatch will be re-started and the instructor will say **"TIME ON"**.
6. You should complete the test without jeopardising your safety and wellbeing. Your time will start as soon as you enter the crawl way and will stop when you finally exit.
7. The finish will be indicated by the assessor tapping you on the head and saying **STOP**.
8. You may withdraw yourself from the test at any time by calling **"STOP THE TEST"**, or if the safety officers believe you are suffering unduly, they will withdraw you from the test giving a reason for their decision.

# THE EQUIPMENT CARRY TEST

To complete the test successfully you will need to combine endurance, upper and lower body strength and co-ordination and complete the test within the specified time.

## Test details

You will be carrying equipment over the length of the course, moving between the two cones, which cover a distance of 25 metres. The items are laid out in the order which they are to be used. This is the start and finish line.

1. You will start level with this line holding the hosereel at waist height.
2. You must run the hose to the second cone and place it down.
3. Then run back to the start and pick up the two coils of delivery hose by the handles.
4. Carry them up and down the course for a total of 4 lengths.
5. Then you must pick up the single coil of delivery hose by the centre lugs and carry it at chest height 1 length, down to the second cone and place it on the floor, and then run a total of three lengths back to the start.
6. Then you must pick up and carry the length of suction hose and basket up and down the course for a total of 4 lengths and place it on the floor where you started.
7. Then you must run up and down the course for a total of 4 lengths.
8. Finally you must pick up and carry the barbell up and down the course for a total of 4 lengths.

Your time will start when you hear **3-2-1- GO!!** And will stop when you cross the finish line with the barbell. You do not have to remember the sequence of events, as the assessor will guide you.

You **MUST NOT RUN** whilst you are carrying equipment other than the hosereel at the start - however you **SHOULD RUN** at all other times when you are not carrying equipment.





## THE LADDER CLIMB TEST

To complete the test successfully you will need to demonstrate confidence ascending the ladder, applying the correct leg lock technique and descending the ladder in the correct manner as demonstrated by the instructor.

### Test details

1. You will be required to climb the ladder to approximately two-thirds of its height - the instructor will give the command when to stop.
2. At this point, you will be instructed to take a leg lock as previously demonstrated by the instructor, release your hands from the ladder, outstretch your arms to the side, look down towards the instructor and call out the number of fingers he/she has raised.
3. You will then be instructed to descend the ladder. To achieve this you must regain the correct handhold on the rounds of the ladder, step up out of the leg lock and descend to the ground. You should complete this task in a safe and controlled manner as detailed by the instructors. You will be wearing a full body harness and will be attached to a fall-arrest device throughout the assessment.

Prior to commencing the test an instructor will demonstrate the assessment from start to finish whilst providing an explanation of all the relevant points as follows:

- This is a 13.5 metre Fire Service ladder, these are the rounds of the ladder, these are the strings of the ladder and this is known as the Jack beam. (Indicate to students)
- Note that the jack beam is not the first step onto, or the last step off the ladder.
- When descending you will be counted down **3, 2, 1** by a member of staff until you reach the ground.
- You should start with a grip on the round at shoulder height with both hands. Where sections of the ladder overlap, only one round of the ladder should be gripped, that being the closest round to you. The round should be gripped by placing the fingers on top with the thumbs underneath.
- Whilst ascending and descending the ladder, your left arm moves with your left leg, and your right arm moves with your right leg.
- When you reach the required height, the instructor will give the order **REST**, at this point you should stop and ensure that both feet are on the same round and both hands are on the same round.

## THE LADDER CLIMB TEST

- On the command from the instructor you must take a leg lock by placing one of your feet through the ladder between the second and third rounds above where your feet are currently located and engage the toe of your boot back over the original round (if you find that your feet are too big to place back over the round then you should engage your heel onto the round as an alternative.) Once this is achieved you must step down one round with your other leg.
- At this point you will be instructed to remove your hands from the rounds and outstretch your arms. You will be asked by the instructor “how many fingers am I holding up” to which you must look around and identify the correct number and relay this back to the instructor.
- Once satisfied the instructor will order you to step out of the leg lock. You will do this by stepping back up one round, disengaging your toe or heel lock and bringing your leg back through the ladder so as to take up your original position with both feet on the same round and both hands on the same round.
- You will then be instructed to descend the ladder. Whilst descending you will hear the order **‘PAWLS. STEP IN.’** at this point you should take more care as you are approaching an overlap between ladder sections. You should feel for the overlap with your feet. Do not confuse this order with **PAUSE!**
- At no time during this assessment must you use the strings of the ladder to ascend, descend or support your weight whilst stepping into or out of the leg lock.
- To ensure you understand the correct procedure for taking a leg lock the instructor will also demonstrate a leg lock at low level.
- Each candidate will be called forward, in turn to practice the leglock at low level prior to commencing the test.







## THE CASUALTY EVACUATION TEST

To complete the test successfully you will need to combine upper and lower body strength and co-ordination and complete the test within the specified time.

### Test details

1. Firmly grasp the carrying handle at the back of the dummy's head with both hands.
2. Keeping your body upright and your back neutral pick up the dummy so that you can straighten your back whilst keeping your legs bent.
3. Drag the dummy from the start cone, walking backwards along the 30m route to the finish line.
4. The assessor will guide you, so there is no need to turn around to look for the corners. "THE ASSESSOR WILL TELL YOU WHEN TO TURN."
5. Prior to the commencement of the test, the instructor will provide you with a short demonstration of the technique required.

# THE LADDER LIFT SIMULATOR TEST

To complete the test successfully you will need to combine upper and lower body strength and co-ordination to lift the ladder to the required height and lower it safely under control, with the cradle LOADED with 15kg weights providing a total lift weight of 30kg.

## Test details

1. Start the lift with an underhand grip and your palms facing upward.
2. With slightly bent knees (if required) and a straight back, lift the bar to a neutral position.
3. Using your arms only, lift the bar to chest height.
4. At this point you should perform a wrist changeover by rotating your wrists 180° to take up a pressing position.
5. Press the bar upwards to reach the mark at 182cm in one continuous movement.
6. On the command of the instructor the bar is to be lowered under control, in the reverse manner back to its resting position.
7. You must keep your hands inside the lifting area of the bar.
8. You must not squat down and use your legs to start the lift.
9. You must wear gloves to perform the test.
10. The safety officer will assist you if needed during the lift.
11. You will first practice with 5kg on the cradle which equates to a total of 20kg, then the instructor will add the extra 10kg to achieve the total test weight of 30kg.
12. You may lift the bar from anywhere inside the marked lifting zone.
13. Prior to the commencement of the test, the instructor will provide you with a short demonstration of the technique required.
14. Should the candidate be seen to be struggling and is not likely to lift the required weight, the instructor will step in informing the candidate that they are assisting with the lift. This will be recorded as an unsuccessful attempt. No further attempts are permitted.





## THE LADDER EXTENSION TEST

You will be required to carry out a test that simulates extending a 13.5m Fire Service ladder from the 1st to the 2nd floor of a building. To complete the test successfully you will need to combine upper body strength and coordination and exert maximal safe effort on the extending line complete the task within the specified time.

### Test details

1. Firmly grasp the extending line at or above head height.
2. Using a hand-over-hand method pull down on the line, the operator cradle will rise.
3. The use of your body weight is permitted, but you must keep both feet in contact with the ground at all times. Continue in this manner until the cradle reaches the top of the frame.
4. Raise the cradle as quickly as possible to the top of the frame. At this point you should pawl the simulator. In order to pawl the simulator, you must raise the cradle until the mechanism engages (with a click sound).
5. You may then lower the cradle down onto a ladder round where it will rest securely. In order to disengage the pawls on the simulator, you must raise the cradle off the round until the mechanism clicks. The pawling system is then disengaged, and you may lower the cradle to the ground, using the hand-under-hand method, until the cradle reaches the bottom.
6. Do not allow the cradle to plummet.
7. You will not be timed during the descent part of the test.
8. Assistance from the safety officer is permitted during the descent part of the test and will not incur any penalty.
9. The time will start as soon as you pull on the line and will stop when the cradle reaches the top. If at any time you feel the simulator is too heavy for you to continue to move safely, or your grip is not providing sufficient control, you should alert the safety officer, and pawl the simulator. But your time will be marked as **Did Not Finish** the test.

# THE EQUIPMENT ASSEMBLY TEST

To complete the test successfully you will need to assemble and then disassemble the Hose Inflation Kit in the manner described within the specified time.

## Test details

Prior to the commencement of your test the instructor will provide a demonstration and commentary of how to assemble and then disassemble the equipment as follows.



**Step 1**

Pick up part 2 and screw part 2 into the threaded valve of part 1. The connection should be hand tight only.

**Step 2**

Pick up part 3 (blue hose) and connect to part 2.

**Step 3**

Pick up Part 4 and connect to the free end of part 3.

**Step 4**

Pick up part 5 (yellow hose) and connect to part 4.

**Step 5**

Pick up part 6 and connect to the free end of part 5.

**Step 6**

Pick up part 7 (red hose) and connect to part 6.

**Step 7**

Pick up part 8 and connect to the free end of part 7.

**Step 8**

Place the split pin through the coupling lug by lining up the hole.

**Completed Assembly**

# THE EQUIPMENT ASSEMBLY TEST

Once the unit has been assembled completely and correctly as per the instructions and diagrams, the stopwatch will be paused and your total assembly time will be noted.

You will then be instructed to begin the disassembly of the unit.

You will be given the command **"3-2-1-GO"**, the stopwatch will be restarted and you should start disassembling the unit in the reverse order, placing each item back on the board in the designated position. Once you have completed the disassembly you will be told, **"STOP"** and your total time will be recorded.

All threads and connections should be made correctly beware of cross threading part No 2. If you go wrong, you will be told **STOP** and the instructor will refer you to the pictures on the table adjacent. The stopwatch **WILL NOT** be stopped if you make an error.

# NOTES

A series of horizontal dotted lines for taking notes.



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