



# QUALITATIVE FIT TEST KIT



QUALITATIVE FIT TEST KIT CONTENTS	
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**IMPORTANT - INSTRUCTIONS FOR USE:** The intended use of the Fit Test Kit is to assess tight-fitting FFP1, 2, 3 (EN149) along with reusable half masks (EN140 / EN405). Tight-Fitting reusable half masks will require particulate filter(s) fitted or alternatively gas combination filter(s) which must incorporate a particulate element to the filters build. THE KIT IS NOT TO BE USED TO ASSESS TIGHT FITTING FULL FACE RESPIRATORS (EN136) OR POWERED AIR PURIFYING RESPIRATORS 'PAPR'S' (EN12941) ASSOCIATED WITH LOOSE FITTING HOODS, HELMETS AND BLOUSES.

**HSE:** The JSP Qualitative Fit Test Kit meets the performance criteria for fit testing respirators as advised in HSE information document INDG 479, the guidance document for fit testing of respiratory protective equipment. The JSP Qualitative Fit Test Kit Instructions along with the HSE INDG 479 Guidance and associated INDG 479 Companion: Fit Testing Qualitative Method are to be fully understood. The Fit Test is to be delivered by a competent person.

**TEST SOLUTION CONTENTS:** Water, sodium chloride, denatonium benzoate.

The Bitter Fit Test Solution and Bitter Sensitivity Solution supplied by JSP, when unopened and stored in accordance with the user instructions, are suitable for long-term storage. When the bottles are first opened, the user should annotate the label with the date opened. After 12 months from first opening the solution should be disposed of. To identify solution compromised by unsuitable storage, pour a small amount into a clear container. Solutions should be disposed of if cloudy-looking or containing carrier particles.

### **SAFETY MEASURES:**

1. The assessor conducting the Fit Test is to be competent in the products use.
2. Those attending the Fit Test are to be clean shaven. The wearers face should have been shaved (in the area of the face seal) within 8 hours of the work shift commencing.
3. The Sensitivity and Fit Test Solutions used during Face Fit Testing contain Denatonium Benzoate. The solution is a common substance used in the manufacturing of household products (under the sink products mainly) as a safety ingredient. It is a bitter tasting solution. If a child were to taste a product containing/coated with Denatonium Benzoate they would spit it out almost immediately. It is often used as an ingredient to deter children from biting their nails.
4. Reusable Half Mask are to be fitted with Particulate Filters or a Gas Combination Filters with a Particulate Element associated within its build.
5. Note: It is recommended that a medical check be conducted prior to fit testing. It is the employers responsibility to ensure those attending are medically fit to attend the Fit Test without concerns to Bronchial, Asthma, Heart, Skin Conditions. Test subjects identifying with such concerns should NOT attend the Fit Test. The fit tester should ascertain that the wearer is medically fit to wear RPE and seek confirmation (preferably in writing) from the test subjects employer.
6. The test subjects respirator is to be clean and serviceable without concern to dirt, damage, damp and contamination. The competent assessor is to inspect the respirator for serviceability prior to testing.
7. The test subject should NOT SMOKE, Vape, e-cigarettes for at least 30 mins prior to testing commencing.
8. The test subject should NOT have Eaten any food stuffs including gum and snacks for 30 mins prior to the test commencing.
9. The test subject should NOT consume hot or cold flavoured drinks for 30 minutes prior to attending the Fit Test. However still plain unflavoured water is acceptable prior to the Fit Test commencing.
10. Plain still water is to be made available for each test subject attending.
11. The assessor may wish to wear nitrile gloves along with IIR medical mask during each Fit Test being conducted to hinder any possible risk of biological transmission. Encourage the use of Sanitising Gel at suitable intervals for both assessor and test subject.
12. The frequency of Fit Testing should be identified in company policy / company risk assessment / company standing operational procedures complying to the ACOP's. The regulations and duties imposed by the Health and Safety Act 1974.
13. Seek updates from HSE website regarding Fit Testing along with BSIF/Fit2FIT INDG479 Guidance and associated Qualitative Companion document - when to fit test etc.
14. If a second repeat test is carried out unsuccessfully an alternative make, model and possibly size of respirator should be sought. Secondary repeat tests are not to be conducted until the test subjects palate sensitivity to the solutions has diminished entirely. Restart the Face Fit Test in its entirety including a fresh sensitivity test.
15. The Fit Test is only valid for the specific make/model size being fit tested.
16. Any change of respirator or additional respirators used by the test subject is to be Fit Tested. Any change of above the neck PPE associated with the specific respirator an additional Fit Test is also required.
17. Successful Fit Tests Report Forms are to be issued as follows: The Test Subject x 1, The Employer x 1, The Assessor conducting the assessment x 1. The Test Report is to be held for a minimum of 5 years and made available upon request of visiting authorities.
18. On conclusion of a successful and unsuccessful fit test, disposable Filtering Facepieces FFP1,2,3 are to be rendered unusable by the assessor (competent person) delivering the test.
19. On conclusion of a successful and unsuccessful fit test the Reusable Half Masks including filters are to be cleaned removing any trace/contamination of Denatonium Benzoate (see respirator manufacturers cleaning instructions).
20. On conclusion of a test subjects fit test pour any remaining solution down the sink / toilet. DO NOT return remaining solution back into their respective bottles.
21. Annotate the both solution bottles with an opened date. Discard the solutions at the 12 month point from opening.
22. Store the solutions as per the manufacturer's instructions.
23. The JSP Qualitative Fit Test Kit complies to BS ISO 16975 – 3: 2017 Selection and Use, Fit Test Methods.
24. Ear looped masks / KN95 masks are NOT to be fit tested.
25. Denatonium Benzoate . . if there is evidence of contamination within the solutions such as carrier particles/debris, immediately safely and correctly dispose of the bottle and its contents responsibly.
26. When delivering the Qualitative Face Fit Test, check the functionality of both nebulisers at regular intervals. If the aerosol cannot be identified the test is cancelled. You are not to repeat the test until all sensitivity from the test subjects palate has cleared.
27. When using the nebulisers always hold upright / vertically. This will deny solution spillage from the nebuliser during use.
28. Inform the test subject to raise their hand should they identify palate sensitivity (taste) of the solutions at any time during the Qualitative Face Fit Test.
29. Inform the test subject NOT to talk during the period of the Face Fit Test being delivered with hood worn.
30. Inform the test subject to refrain from coughing, sneezing, touching their face or adjusting PPE during the test as this may deliver a negative result.
31. The assessor may halt the Test Subject during the Bending at the Waist Exercise (briefly) to administer the Fit Test Solution prior to the exercise continuing.
32. Underlying health issue. Under these circumstances, adaptations to the fit test exercises may be made to better reflect the wearer's range of movements. Any adaptations should be recorded. For those with short-term conditions, the fit test should be carried out after they have recovered.
33. Bending at the Waist exercise can be performed using a balance support should the test subject require it – the Fit Test Report is to be annotated accordingly with this observation.
34. Bending at the Waist (as if to touch the toes) is to be performed without discomfort to the test subject. A comfortable position should be delivered depending on age and mobility of the test subject.
35. The wearer should have received training in correct donning of the facepiece before the fit test.
36. The wearer should be able to don the facepiece in accordance with the manufacturer's instructions, in the manner in which they have been trained, and without assistance from the fit tester.

### **ENVIRONMENTAL CONDITIONS:**

- The room should have a mirror to allow the test subject to practise donning/doffing skills that have been brought to their attention to regain product familiarisation
- The room should be without distractions (outside influences) to the test subject.
- The room should have blinds on windows / doors (privacy is required)
- The entry and exit door should have signage: 'Assessment in Progress'
- Windows are to be functional to allow mild circulation of air, however free from draughts
- Table and chair for the assessor
- The assessment room should be situated close to washrooms / ablutions to allow the test subject to wash their face of any solution particles that are present on conclusion of the sensitivity test and fit test conclusion.

**PREPARATION:** The test subject needs to be clean shaven around the face seal to achieve an effective fit when using tight-fitting facepieces and to achieve a representative result from this test. The test subject should NOT eat, smoke, vape, chew gum or drink for 30 minutes prior to attending the test. Still, unflavoured water is acceptable to consume prior to Fit Testing.

1. Identify the Sensitivity Test nebuliser by its cap label. Unscrew the cap if fitted to the nebuliser and pour a small amount of the Sensitivity Test Solution into the nebuliser reservoir (just below the black o-ring) and return the cap firmly in place. Ensure to remove both bungs from the nebuliser cap and place the nebuliser upright in the sponge/foam support and place the associated Sensitivity Solution bottle next to it.
2. Pour the same amount of the Fit Test Solution into the second nebuliser reservoir labelled Fit Test Solution and screw down its associated top cap before removing both bungs from there parked positions upon the nebuliser cap. Place the nebuliser in the sponge/foam support and place its associated bottle beside it.
3. Immediately recap both sensitivity and fit test solution bottles.
4. Align the base of the hood with the Velcro lining of the collar, ensuring the clear plastic window is the same side as the empty slots in the collar. With these two aligned, press the Velcro together to create a seal.
5. Fill out the Test Report Form with the subject's details.

**SENSITIVITY TEST:** This test is done to assure that the person being fit tested can detect the bitter taste of the test solution at very low levels. The Sensitivity Test Solution is a very dilute version of the fit test solution.

1. Have the test subject put on the hood and collar assembly without a respirator.
2. Position the hood and collar assembly so that there is about 150mm between the subject's face and the hood window. The subject should pass the straps under each arm allowing the Fit Test assessor to fasten to the rear of the collar by the hook and pile (Velcro).
3. Check the functionality of the nebuliser at arm's length using a black background or hold up to the light to identify aerosol functionality. With the nebuliser held in the palm of your hand, compress the nebuliser bulb by rolling your fingers into the palm. At any time during the test, if the nebuliser fails to deliver aerosol the test is cancelled.
4. Instruct the test subject to breathe normally with their mouth open at all times.
5. Count the applications administered into the hood. Direct the aerosol to the sides of the hood alternating from one side to the other. DO NOT direct the aerosol directly towards the test subjects face. Count each individual application until the subject raises their hand.
  - Between 1 -10 nebuliser applications = annotate 10 on the record sheet
  - Between 11- 20 nebuliser applications = annotate 20 on the record sheet
  - Between 21-30 nebuliser applications = annotate 30 on the record sheet
6. If 30 squeezes are inadequate, in that the subject does not detect the bitter taste then the test is ended and another type of fit test must be used such as the APC or CNP Quantitative Test.
7. Unfasten the hood straps and remove hood and collar assembly. Allow the subject a few minutes to clear the taste from their mouth using still unflavoured water only. The test subject should also wash their face removing any possibility of sensitivity solution aerosol that may have been absorbed to their facial area / skin.

**FIT TEST:**

1. Advise the test subject that fit testing is a method of checking that a tight-fitting facepiece matches the wearer's facial features and seals adequately to their face. It will also help to identify unsuitable facepieces that should not be used. Tight-fitting RPE will only provide effective protection if the wearer is clean shaven. The test subject should don their respirator 5 minutes before the test to allow the face and mask materials to acclimatise. The test subject is to carry out a fit check/user seal check to understand if the respirator seals adequately to the face without leakage. The test subject is to be instructed to raise their hand should they identify the Fit Test Solution used for the next and final test. The Fit Test Solution is a higher concentration used to identify any leaks within the respirator worn. The test subject is to carry out a fit check/user seal check to understand if the respirator seals to the face adequately to the face without leakage. The Fit Check should be conducted looking up / looking down / looking left / looking right / forward facing.
2. Have the test subject wear their associated above the neck PPE such as high collared tunic, safety spectacle, safety goggles, own prescription spectacles, safety helmet as this must offer compatibility with the respirator worn. With the associated above the neck PPE worn (used during the subjects application of work) the subject is to carry out a further Fit Check / Seal Check to seek respirator integrity. The Fit Check should be conducted looking up / looking down / looking left / looking right / forward facing without concern to mask leakage or RPE interference. The test subject is to remain with mask worn.
3. The assessor is to explain and demonstrate each exercise to the test subject including the tempo at which the exercises are to be performed. Inform the test subject that each exercise will be performed for 1 minute during the test.
4. Assist the test subject to don the test hood and fasten straps under the arms. Remind the test subject to raise their hand if they taste the Fit Test solution at any time during the exercise periods. Remind the test subject frequently: ALL exercises require mouth open whilst the respirator is worn. The only exception being the talking exercise.
5. Apply either 10, 20 or 30 squeezes of the Fit Test Solution nebuliser into the hood from the number recorded during the Sensitivity Test. The nebuliser must be held upright. Apply the solution as before, alternating left and right side within the hood and NOT directly to the test subjects' masks. The test subject mouth is to be open.
6. Using the Fit Test Solution nebuliser apply half the number of squeezes recorded earlier during the sensitivity test. This would now be either 5, 10, 15. The nebuliser must be held upright. Apply the solution as before, alternating left and right side within the hood and NOT directly to the test subjects' masks. At the commencement of the initial 5, 10, 15 start the STOP WATCH / method of time keeping.
7. NOTE: continue to apply 5, 10, 15 squeezes of the Fit Test nebuliser (into the hood) every 30 seconds for each exercise during all the fit test exercise procedures. The test subject mouth is to be open.

Frequently remind the wearer to:

- a. Raise their hand should they taste the solution.
- b. Mouth is to remain open throughout all exercise periods with mask worn. The exception being the talking exercise.
- c. Refrain from coughing, sneezing or touching the face / adjusting the respirator during the exercise periods.

**EXERCISE FORMAT 1-7: Note:** Bending at the Waist exercise can be performed using a balance support should the test subject require it – the Fit Test Report is to be annotated accordingly with this observation. Bending at the Waist (as if to touch the toes) is to be performed without discomfort to the test subject. A comfortable position should be delivered depending on age and mobility of the test subject.

EXERCISE	DESCRIPTION	All Squeezes: Apply the number of squeezes established in the sensitivity test into the hood.	Half Squeezes: Apply half the number of squeezes established in the sensitivity test into the hood.	Repeat if needed: Repeat the half squeezes process every 30 seconds until the subject raises their hand to show that they can taste the solution.
Normal Breathing	The wearer should breathe normally with no head movements or talking.			
Deep breathing	The wearer should breathe slowly and deeply, taking care not to hyperventilate.			
Turning head side to side	The wearer should slowly turn their head from side to side between the extreme positions on each side (approximately 15-20 times per minute). The head shall be held at each extreme momentarily, so the wearer can inhale at each side.			
Moving head up and down	The wearer should slowly move their head up and down (approximately 15-20 times per minute). The wearer should be instructed to inhale in the up position, for example when looking towards the ceiling.			
Talking	The wearer should talk slowly and loudly enough to be heard clearly by the fit tester. The wearer should read from a standard reading passage or count down from 100.			
Bending at the waist	From a normal standing position, the wearer should bend at the waist as if to touch their toes and then return to an upright position. Repeat approximately 10-15 times throughout the duration of the exercise.			
Normal breathing	Same as the first exercise			

1. The Fit Test is terminated if the Test Subject tastes the sensitivity of the Fit Test Solution during nebuliser aerosol delivery (respirator worn). This would indicate an inadequate fit
2. A second failure may indicate that a different size respirator, make or model is needed.
3. Periodically check the nebulizer to make sure that it is not clogged. If clogging is found, clean the nebulizer and retest.

On conclusion of the Fit Test inject a final 5,10,15 squeezes.

Instruct the test subject to reach inside the hood with both hands and place their fingers between the mask and their skin. Instruct the test subject to take short sharp intake of breath inwards. NOTE: lifting the respirator from the face will expose the test subject to the concentration of the Fit Test solution. Upon the Test Subjects intake of breath. If the test subject indicates /expresses taste sensation upon their palate the test is successful.

## SUCCESSFUL REVEAL CONCLUSION:

- Remove the test hood from the test subject.
- Allow the test subject to consume food or drink to cleanse their palate of the Fit Test Solution.
- Allow the test subject to wash their face of residual aerosol particulate solution that may have settled upon their skin / face.
- Populate the Fit Test Record Sheet and issue: 1 x copy Fit Test Assessor (historical file), 1 x copy Test Subject, 1 x copy Test Subject Employer.
- Render unserviceable and dispose the EN149 used by the test subject. EN149 masks used in the Fit Test are NOT to be reused.
- The EN140 / EN405 reusable half mask: wiping the outside of the filter casing, cleaning the mask thoroughly inside and out. The test subject is to use suitable sanitising disinfectant wipes suggested by the mask manufacturer for this purpose. Any associated above the neck PPE worn during the Fit Test should also be sanitised removing any trace of residual fit test solution.

## UNSUCCESSFUL TEST:

1. Did the test subject cough, sneeze, touch their face or adjust the mask at any time during the test?
2. Was the FIT CHECK/Seal Check conducted correctly without leakage?
3. Has the mask been maintained correctly to allow functionality?
4. Is the respirator compromised by dirt, damage, damp and contamination concerns?
5. Has the respirator been the correctly sized to the test subject?
6. Was the mask donned correctly as per the manufacturers instructions?
7. Can twisted straps, straps too loose or too tight be ruled out?

**NEBULISER CLEANING:** At the end of each test subject assessment, discard the solutions from the nebulizers. DO NOT pour unused solution back into bottles. Disassemble and allow the nebuliser to sit in warm clean water for 5 minutes before rinsing thoroughly with warm water to prevent clogging and shake dry allow to dry naturally. Once dry reassemble fully.

**HOOD CLEANING & STORAGE:** Use a suitable disinfectant and wipe down the inside of the hood and window, leave to dry naturally before reuse. A dry spare cleaned sanitised hood should be used for repeat testing. When returning the clean hood to the Fit Test Box, roll the hood so NOT to damage the window (clear panel). Folding the hood will damage the window.

**REPLACEMENT PARTS:** Replacement parts can be obtained from the retailer from which the test kit was purchased. If any difficulties are found, contact the JSP Technical Service Department.

**STORAGE AND DISPOSAL:** The JSP Qualitative Fit Test Kit, when not in use or during transportation, is to be stored in the packaging in which it was supplied. The JSP Qualitative Fit Test Kit should be stored away from direct sunlight, not in contact with solvents and in such a manner that it cannot be damaged by physical contact with hard, hot, cold or wet surfaces. Storage temperature should be between 5°C and 40°C and relative humidity not greater than 75%.

**WARRANTY:** In the event any JSP product is found to be defective in material, workmanship or not in conformance with any express warranty for a specific purpose, JSP's only obligation and your exclusive remedy shall be to repair, replace or refund the purchase price of such parts or products upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with JSP's written instructions.

**EXCLUSION TO WARRANTY: THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENTS.**

**Limitations of Liability:** Except as provided above JSP shall not be liable or responsible for any loss or damage, whether direct, indirect, incidental, special or consequential, arising out of the sale, use or misuse of JSP products, or the user's inability to use such product.



## **RAINBOW PASSAGE:**

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colours. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look but no one ever finds it. When a man looks for something beyond his reach, his friends say he is looking for the pot of gold at the end of the rainbow.