



Fit test process

A fit test quantitatively assesses the appropriateness of fit of a particulate filter respirator (PFR) to the wearer's face and serves as a validation that the wearer knows how to correctly inspect, don, doff and perform a fit check. It does not provide validation of the quality of each PFR, nor does it negate the need of the wearer to conduct a fit check every time a PFR is worn. A fit test must be performed by an individual who has successfully completed training in the operation of the PortaCount® machine, quantitative fit test procedure, and has appropriate knowledge of the PFRs being tested e.g. how to don each different model correctly and how a fit check is performed. The following process describes how the fit test should be conducted.

Set up

- Set up and turn on PortaCount®. Conduct daily checks as per the equipment specifications.
- Ensure the alcohol cartridge is charged with alcohol and the twin tube assembly is attached.
- Ensure supplies of alcohol based hand rub (ABHR) and cleaning and disinfectant wipes are available.

Before conducting the protocol

- Describe the fit test procedure to the health care worker (HCW) to ensure they understand what is expected of them and how to use the results of the fit test. Explain that there will be some movements that they need to complete within their physical ability.
- Explain that they can stop the test at any time.
- Confirm there are no factors that will impact the test results. If any of the following factors might influence the test results, do not complete the fit test and have the HCW reschedule.
 - Ask the HCW if there are physical or psychological reasons which prevent them from being able to wear a PFR. If the HCW reports they have reasons for being unable to wear a PFR, escalate to the appropriate officer according to local processes.
 - The HCW must not have smoked or vaped within 30 minutes of the test
 - The HCW must not have consumed food or drinks within 30 minutes of the test
 - The HCW must be clean shaven or provide evidence of approval from their line manager for fit testing with a beard cover technique
 - Long hair must be tied back
 - Jewellery that interferes with the PFR seal must be removed.
- Have the wearer apply any required equipment or products such as skin dressings or beard cover techniques, Appropriate approval must be provided prior to fit testing with these.
- Select a PFR for the fit test. Estimate whether the HCW requires a small or medium PFR and follow the sequence described in the Fit Testing Process Fact Sheet.
- Install the probe. See "Installing the Probe Fact Sheet" for a guide to installation.
 - Ensure the PFR is attached to the PortaCount® machine by the twin tube assembly attached to the probe
 - The PortaCount® must be on when the HCW dons a PFR connected to the twin tube assembly.

- Ask the HCW to perform hand hygiene, inspect the PFR for defects, don the PFR and conduct a fit check. This is an appropriate time to provide feedback to the HCW to correct any existing practices or assist the wearer to obtain a comfortable fit and adequate seal. However, the HCW must demonstrate a final donning and fit check without assistance or feedback prior to beginning the test protocol. A mirror can be helpful for the HCW to correctly don the PFR and can be used during the final donning and fit check.
 - Attach the PFR to the lanyard via a clip to ensure the weight of the tubing does not pull the PFR off the person's face. Have the person tilt their head up and down, turn side to side, and bend over to see if the twin tube assembly pulls the PFR away from the face. If it does, readjust the neck strap or the twin tube assembly and repeat the fit check.
 - If additional PPE is required e.g. face shield, goggles, ask the HCW to don at this time. If the HCW usually wears glasses, these should be worn.
 - For more information, refer to the Personal Protection Equipment (PPE) Poster, Wearing a cup style respirator poster and Wearing a flat style respirator poster (available from https://ww2.health.wa.gov.au/Articles/A_E/Coronavirus/COVID19-information-for-health-professionals).
- If there are visible gaps in the seal between the respirator and the wearer's face after attempts to obtain an adequate seal, do not continue to a fit test. Have the wearer doff and discard the respirator and select another respirator to test.
- Once the PFR is donned without feedback or assistance, it must be worn for 5 minutes before the fit test starts. This purges the ambient particles trapped inside the respirator and permits the wearer to make certain the respirator is comfortable.
 - The HCW must not touch or adjust the PFR during this time
 - This can be a useful time to explain the test protocol
- During the 5 minute period between donning the respirator and beginning the fit test confirm with the HCW the following details are correct in the PortaCount[®], to ensure the information is correctly recorded in the database
 - Conduct hand hygiene
 - Select or enter the HCW's demographic details (e.g. name, occupation group). Have the HCW confirm they are correct.
 - Select the PFR model and size. Have the HCW confirm this matches the PFR being tested. This must be confirmed for each PFR to be tested
- After 5 minutes ask the HCW how the PFR feels.
 - While many PFRs are not comfortable, it is important that the HCW would be able to wear a PFR without adjustment for the period of their duties
 - If they state the PFR is tolerable conduct the fit test protocol
 - If they state it is uncomfortable, ask whether the PFR would be tolerable for the period of time they would be required to wear it. If they state it would be intolerable, discontinue the fit test for that PFR. If they state it would be tolerable conduct the fit test protocol.

Conduct the protocol

- Advise the HCW the test will be voided if they touch or adjust the PFR or talk during non-speaking exercises
 - If the PFR is touched or adjusted determine whether this was due to discomfort or distraction
 - If the PFR is still to be tested, it must be doffed and the protocol be repeated from donning without assistance (including the 5 minute period between donning and beginning the fit test)

- Begin the test protocol on the PortaCount®
 - Have the user follow the animated fit test exercises one after another as prompted. The animation shows the actions and pace of the exercise
 - It can be difficult for the HCW to conduct the movements and see the PortaCount®, so provide verbal instructions
 - It is optional for the HCW to take breaths additional to those described in the exercises
- The OSHA modified protocol for filtering facepiece respirators consists of the following exercises:
 - Bending over: The HCW shall bend at the waist, as if going to touch their toes for 50 seconds and inhale 2 times at the bottom
 - Talking: The HCW shall talk out loud enough so as to be heard clearly by the fit tester for 30 seconds. The HCW will either read from a prepared text such as the Rainbow Passage (text displayed on the PortaCount®), count backward from 100, recite a memorized poem or song, or read from another prepared passage.
 - Head side-to-side: The HCW shall stand in place, slowly turning their head from side to side for 30 seconds and inhale 2 times at each extreme.
 - Head Up-and-Down: The HCW shall stand in place, slowly moving their head up and down for 39 seconds and inhale 2 times at each extreme.
- The PortaCount® will have been set up so that it terminates a fit test if it becomes impossible to achieve a satisfactory overall fit factor. If the PortaCount® terminates the fit test go to the step “Refer to the overall fit factor” (below)

After conducting the protocol

- Observe the HCW doff the PFR
 - The HCW must dispose of the PFR appropriately
 - The PFR cannot be used for respiratory protection as it now has a probe installed
 - The PFR can only be used to fit test one HCW
 - Ask the HCW to perform hand hygiene
 - The fit test operator may provide feedback or education on correct doffing if required
- Ask the HCW how the PFR feels
 - While many PFRs are not comfortable, it is important that the HCW would be able to wear a PFR without adjustment for the period of their duties
 - If they state the PFR is tolerable refer to the overall fit factor to indicate whether the PFR is recommended for the HCW
 - If they state the PFR is uncomfortable, ask whether the PFR would be tolerable for the period of time they would be required to wear it. If they state it would be intolerable the PFR is not recommended for the HCW despite the overall fit factor. If they state it would be tolerable refer to the overall fit factor to indicate whether the PFR is recommended for the HCW
- Refer to the overall fit factor
 - An overall fit factor of ≥ 100 is required for a PFR to be recommended
 - If the overall fit factor is < 100 or the PortaCount® terminated the test the PFR is not to be recommended for the HCW
- Advise the HCW if the PFR (including any additional equipment or product) is recommended for them, including the reasons if it is not, e.g. overall fit factor < 100 , comfort level
- For each respirator to be tested, repeat the steps from PFR selection

- Provide results to the HCW according to local processes. Provide a completed Fit Test Results Card to the HCW, including any additional equipment or products such as skin dressing and beard cover techniques. Record results in local systems, such as LMS, as required.
- If none of the PFRs are recommended for the HCW, escalate to the appropriate officer according to local processes.
- Refer to “Cleaning and Disinfecting Fit Test Equipment”

References:

OSHA [Standard 1910.134 Appendix A: Fit Testing Procedures-General Requirements. \[Accessed 3 February 2021\].](#)

Australian/New Zealand Standard 1715:2009. Selection, use and maintenance of respiratory protective equipment.

Portacount® Respirator Fit Tester Models 8040 and 8048 Operation / User Manual. P/N 6010633, Revision D. March 2019. TSI Incorporated.