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Purpose and aims

The Fit Testing of Particulate Filtration Respirators (PFR or P2/N95 respirators) in respiratory protection programs Guidance Document (Fit Testing Document) has been developed to provide guidance and recommendations for decision-makers and healthcare workers (HCWs) in Queensland. The purpose of the document is to support the safe and practical implementation of fit testing as part of respiratory protection programs.

The document aims to:

- Acknowledge the primacy of health, safety, and wellbeing of all workers at work, and all other people who might be affected by the work (i.e. our patients, visitors, and community)
- Highlight the practical considerations for implementation of large-scale fit testing programs
- Provide guidance on a prioritisation approach to support optimal allocation of effort and resources
- Provide guidance on some of the complex issues and risks associated with risk based respiratory protection programs

Scope

This guidance document provides information for all Queensland Health Hospital and Health Service (HHS) employees and all organisations and individuals acting as its agents (including visiting Medical Officers and other partners, contractors, consultants, students and volunteers) and all Queensland licensed private health facilities. The information in this guidance document may also be applied by other health and care organisations and services such as primary care and residential care. It is intended to inform local policies and to support local decision-making using a risk management framework.


Relevant legislation, standards, and guidance

This guidance document should be read in conjunction with the following:

<p>| Work Health and Safety Act 2011 (Qld) | Provides a consistent framework to secure the health and safety of workers and workplaces. Workers and other persons at the workplace (including patients, visitors etc.) must also take reasonable care for their own health and safety; and care that their conducts, acts or omissions does not adversely affect the health and safety of others. |</p>
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<tr>
<td><strong>Work Health and Safety Regulation 2011 (Qld)</strong></td>
<td>Division 5, Section 44 (3) of the Regulation describes how to prevent or minimise risk at the workplace and includes provisions specifically regarding PPE suitability, size, fit, maintenance, hygiene, and use.</td>
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<tr>
<td><strong>International Standard</strong></td>
<td>ISO 16975-3 Respiratory protective devices, selection use and maintenance- Part 3 Fit testing procedures First Edition 2017-09</td>
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<td><strong>Australian Guidelines for the Prevention &amp; Control of Infection in Healthcare (2019)</strong></td>
<td>Recommends that where there is a high probability of airborne transmission due to the nature of the infectious agent or procedure then a correctly fitted P2/N95 respirator should be worn</td>
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<td><strong>National Safety and Quality Health Service Standards</strong>: Standard 3 - Preventing and Controlling Infections</td>
<td>Standard 3 requires that leaders of health service organisations develop, implement, and monitor systems to prevent, manage and control infections.</td>
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<td><strong>Health, safety and wellbeing risk management Standard, QH-IMP-401-3:2018</strong></td>
<td>This Queensland Health Standard establishes the requirements for managing work health and safety (WHS) hazards and risks.</td>
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<td><strong>A Guide to Buying P2, or Equivalent, Respirators for use in the Australian &amp; New Zealand Work Environment</strong></td>
<td>This document, produced by the Australian Institute of Occupational Health, provides detailed information to be used in the selection of respiratory protection equipment.</td>
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<td><strong>Personal protective equipment in healthcare delivery, community health and in-home care settings, correctional services and Personal protective equipment in residential aged care and disability accommodation services</strong></td>
<td>Queensland Health’s guidance to the PPE requirements during different levels risk of unanticipated COVID-19 infection in the community.</td>
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Background

Respiratory protection is required for those organisms that are usually transmitted via the droplet or airborne route, or when airborne particles have been artificially created, such as during aerosol generating procedures.

When considering the hierarchy of controls (Figure 1 provides a graphical representation) in mitigating workplace risks, the use of personal protective equipment (PPE) is the lowest level of control and the least effective. However, as it is not possible to eliminate the risk of exposure to infectious agents in healthcare, the use of PPE for respiratory protection should be considered as an essential element of defense in the hierarchy of infection prevention measures; refer to figure 1. In addition, controls from other levels in the hierarchy should be used concurrently to reduce and control the risk to workers and patients.

Where respiratory protective equipment is required, Australian/New Zealand Standard 1715:2009 Selection, use and maintenance of respiratory protective equipment (AS/NZS 1715:2009) requires that a respiratory protection program be established. It is important to recognise that fit testing is only one component of a respiratory protection program. The section on “Elements of a respiratory protection program” elaborates on this.

For further information on the hierarchy of controls in the context of respiratory disease transmission refer to the Australian Government Department of Health Minimising the risk of infectious respiratory disease transmission in the context of COVID-19: the hierarchy of controls. The diagram at figure 1 illustrates how fit testing augments respiratory protection and expands levels of control by:

- ensuring the PPE worn is suitable by design and ensures adequate respirator seal,
- enabling instruction and training on correct use
Hospital and Health Service Responsibilities

Hospital and Health Services (HHS) are responsible for implementing the elements of a respiratory protection program in accordance with AS/NZS 1715:2009.

Employers are responsible for providing a safe work environment as per the Work Health and Safety Act (2011). Workplace Health and Safety Queensland may take enforcement action where tight-fitting respirators are provided to workers without fit-testing being undertaken (1).

Elements of a respiratory protection program

Respiratory protection programs include several elements that are designed to protect workers from workplace respiratory hazards including airborne infectious agents, dust, and other particles.

A respiratory protection program includes the following components according to AS/NZS 1715:2009 - Selection, use and maintenance of respiratory protective equipment (2):

- Appointment of a program administrator
- Selection of respiratory protection equipment
- Medical screening of users
- Training
- Issue of respiratory protection equipment
- Fitting of equipment
- Wearing of respiratory protection equipment
• Maintenance of respiratory protection equipment (not relevant to P2/N95)
• Disposal of equipment (not relevant to P2/N95)
• Record keeping
• Program evaluation

The focus of this document is fit testing (fitting of equipment); however, guidance is also provided on some of the other elements of a respiratory protection program. Elements touched on in this guidance document are underlined in the above list. For further guidance on the elements of a respiratory protection program refer to AS/NZS 1715:2009 - Selection, use and maintenance of respiratory protective equipment and ISO 16975-3 Respiratory protective devices, selection use and maintenance-Part 3 Fit testing procedures First Edition 2017-09.

Program administrator and other required roles

Respiratory Protection Program Administrator

An individual must be assigned the responsibility to lead the respiratory protection program(2). The program administrator should have a background that allows them an understanding of the key principles of respiratory protection and an understanding of workplace hazards. An occupational health and safety professional is recommended for this role(2).

Key functions of the role (not intended to be exhaustive)

• Development of procedures for all elements of the respiratory protection program, including fit testing and training.
• Establishment of model of training for those performing fit testing; for example, train-the-trainer model

Fit testing provider and trainer

There is no current industry standard of qualifications required by staff engaged to perform fit testing. Commercial fit test providers and occupational hygienists provide services under a competent person model. Refer to ISO 16975-3 and AS/NZS1715:2009 Selection, use and maintenance of respiratory protective equipment, and to Section 2.3 of NSW Clinical Excellence Commission Respiratory Protection Program for further guidance.

Selection of respirators

Only respirators (disposable and non-disposable) that meet the requirements of AS/NZS 1716:2012 or the equivalent international standard(3), and are included in the Australian Register of Therapeutic Goods (ARTG)(4) should be used in healthcare settings and considered in respiratory protection programs.

It is also important to ensure that the respirators used in the fit testing programs are those which will continue to be available to HCW at the point of use. Each HCW is to be fit tested to a pass result for two or more devices, to enable alternatives in case of supply shortages.

Some disposable respirators are not adequately fluid-resistant to be used when high-velocity splashes of blood or body fluid are likely. These respirators can be used in combination with a full-face shield to provide splash protection.
Training

The training required as part of a respiratory protection program is:

- Training in carrying out fit testing (for the fit testers)
- Training in the appropriate use of respiratory protection equipment, including:
  - When to use
  - How to put on and take off safely (donning and doffing)
  - How to perform a fit check
  - How to dispose of single use equipment
  - How to reprocess reusable equipment
  - Assessment of competency

Fit testing (Fitting of equipment)

Timing of fit testing

In accordance with AS/NZS 1715:2009(2) and the Australian Guidelines for the Prevention and Control of Infection in Healthcare, fit testing must be undertaken:

- at the commencement of employment for those who will be working in environments where significant risk of exposure to infectious agents transmitted via the airborne route has been assessed
- when there is a significant change in the wearer’s facial characteristics that could alter the facial seal of the respirator (e.g. significant change in body weight, facial surgery, or growth in facial hair).
- at regular intervals in accordance with relevant standards—AS1715:2009 recommends annual fit testing.

Identification of staff for whom fit testing is required

HCW identified as performing activities requiring respiratory protection and/or working in areas with a significant risk of exposure to diseases transmitted via the airborne route must be identified. These HCW must be fit tested and trained in the appropriate use of respiratory protective equipment.

Activities requiring respiratory protection in healthcare:

- Routine care of, or contact with, patients with infections considered to be transmitted via the airborne route, for example tuberculosis, measles, or chickenpox.
- HCW performing aerosol generating procedures (AGPs) in patients with infections that are transmitted by the droplet route (including COVID-19). Some common AGPs are below. A more comprehensive list is found in the Infection prevention and control guidelines for the management of COVID-19 in healthcare settings:
instrumentation or surgical procedures on the respiratory tract e.g. intubation, bronchoscopy, tracheostomy, disconnection of closed ventilator circuit, ear, nose, and throat, maxillofacial/transsphenoidal or thoracic surgery involving the lung

- non-invasive ventilation, induced sputum collection, high-flow nasal oxygen

- upper GI instrumentation involving suctioning of respiratory tract

- some dental procedures including high speed drilling

**Type of fit testing to be undertaken**

**Qualitative (subjective) fit test**

A qualitative fit test is a facial fit testing giving pass or fail results and relies on the wearer’s subjective response to an aerosolised test agent.

A flavoured test agent such as saccharin or Bittrex™ (a bitter tasting substance) is used at a level at which the user will be able to sense its presence within the respirator by taste, smell or the urge to cough if the fit is not adequate.

In deciding whether to use qualitative fit testing an assessment should be made of the risk of the subject being unable to detect the test agent due to unanticipated illness (e.g. loss of taste/smell is a symptom of COVID-19). The risks of cross-infection associated with reuse and reprocessing of the testing hood should also be assessed.

**Quantitative (objective) fit test**

A quantitative fit test gives objective numerical results using specialised particle counting equipment (such as a PortaCount™ Plus machine). It measures how much air leaks into the wearer’s breathing zone. It does not rely on the subject’s response to a test agent.

**Record-keeping**

A record of all fit testing results must be kept and stored in a secure database that is accessible to authorised persons only. Data must be provided to (or maintained directly in, where applicable) the centralised Queensland Health Fit Test Register (FiTR) as the official source of fit test data.

The minimum data set (MDS) fields are prescribed within the FiTR Work Instructions and will be routinely reviewed in consultation with the State-wide Fit Test Reference Group to maintain currency.

In addition, workplaces should maintain a record (e.g. in Riskman) of any instances where staff have continued to work in situations where P2/N95 respirator were required but where the respirators were not available or a fit test was not successful. The reporting of these instances will be monitored by the system to ascertain compliance with relevant standards and legislation and to better monitor staff safety in working in environments where risk of exposure to significant known or notable and unusual infectious agents exists.

**Communication of results of fit testing**

HCW and their line manager should be advised of the size and brand of respirators that were successfully fitted and be provided with the relevant documentation for future reference.
HCW should be advised of criteria for further fit testing (recommended annually or sooner if there is a significant change in facial features)

Workplaces should implement methods for collection of aggregate fit test results in order to inform procurement. Staff should be advised that their fit testing results will be used for this purpose.

**Considerations on common fit testing implementation issues**

**Facial hair**

An adequate seal may be difficult to achieve for people with facial hair. The effectiveness of a tight-fitting facepiece, such as half-face or full-face respirators that use straps, relies on an effective seal with the wearer's face. If the respirator does not fit properly, the wearer will not get the expected level of protection. Facial hair that lies along the sealing surface of a tight-fitting respirator prevents an effective seal. Therefore, it is a requirement that there is no hair growth between the skin and the facepiece sealing surface in order to achieve a fit. Staff must be advised that this requirement continues for use of respirators in practice, not only for the fit testing process.

AS/NZS 1715:2009 (Appendix B) provides guidance in relation to beards, moustaches, sideburns, stubble growth and long hair. See also the CDC guide on Facial Hairstyles and Filtering Facepiece Respirators (6) https://www.cdc.gov/niosh/npptl/pdfs/facialhairwmask11282017-508.pdf. Other factors that may interfere with facial seal include jewellery, facial makeup, and creams.

**Staff unable to comply with respiratory protection requirements**

The requirement for use of PPE and to remove facial hair as necessary is a lawful direction. Employees can seek an exemption from a lawful direction for certain prescribed reasons (such cultural and religious reasons). Where a circumstance of non-compliance arises, the following broad steps are recommended in reaching a resolution:

- Consult with the employee
- Exploring different options (such as another work location remote or flexible work)
- Potential to take leave.

**Failing fit test**

Employees who fail a fit test with a certain respirator must be tested with a second and if required subsequent respirator(s) to ensure the correct brand and size is determined in relation to facial features and ability to maintain a facial seal.

Where repeated fit test has failed, the employee must be referred to the Fit Testing Program Administrator in consultation with their Line manager for re-evaluation and development of a plan. Fit testing for a powered air-purifying respirator (PAPR) may also be considered. This should only be considered after failing fit test with disposable respirators, due to the risk of contamination during removal of PAPR. Careful attention must be paid to correct fitting and removal processes, as well as
cleaning and disinfection. Refer to *Queensland Health Guideline for CleanSpace HALO Powered Air Purifying Respirator (PAPR)*.

Fit testing can be repeated if new stock of different specifications becomes available.

**Risk assessment for staged implementation of fit testing**

When healthcare demand is extreme, full, and immediate implementation of fit testing for every healthcare worker assessed as requiring a P2/N95 respirator may add strain on human resources and supply of P2/N95.

Healthcare organisations should perform and document a timely risk assessment to determine whether full implementation of fit testing is reasonably practicable.

A risk stratified approach, with prioritised fit testing directed towards the locally identified highest risk situations, is an appropriate way to manage limited resources and the required implementation of PPE controls. Consultation with unions should be undertaken on the application of risk assessments that determine staged fit testing implementation.

Fit testing must occur in line with the Australian and New Zealand Standard once there is capacity.

Decisions regarding staged implementation of fit testing should:

- Be focussed on practical risk reduction
- Prioritise those staff who are assessed as at being of greatest risk of exposure
- Address both physical and psychological safety
- Provide for transitional measures for staff who are working in high-risk environments, but who have not yet been able to be fit tested, subject to operational requirements.

In identifying those HCW at highest risk of infection from airborne transmission, factors that may increase the risk of transmission can be considered. These factors include:

- **process factors:**
  - cumulative exposure to the patient and infectious agent i.e. prolonged or repeated contact
  - multiple infected patients in an enclosed space
  - encounters with patients before their risk can be assessed (e.g. in emergency departments, particularly prior to triage)
  - care settings that are less controlled (e.g. pre-hospital environment)
- **patient factors:**
  - aerosol-generating behaviours likely (such as coughing, shouting, screaming, increased work of breathing)
  - inability to cooperate/cognitive impairment, inability to tolerate a surgical mask, challenging behaviours
  - exposure during period of high infectivity
- **environmental factors:**
  - suboptimal ventilation
  - unexpected air movements (opening doors, fans, foot traffic)
  - enclosed space
Refer to Appendix 7: Factors increasing the risk of infection of the Queensland Health Infection prevention and control guidelines for the management of COVID-19 in healthcare settings(7) and Infection Control Expert Group Guidance on the use of personal protective equipment (PPE) for healthcare workers in the context of COVID-19.

**Fit testing of agency staff, contractors, and students**

It is ultimately the responsibility of the workplace to ensure that fit testing is undertaken for workers required to wear respiratory protective equipment. If agency staff, contractors or students who are required to wear respiratory protective equipment for their role present to work and are not already fit tested for a respirator in supply at the facility, fit testing should be undertaken.

When it is not reasonably practicable to undertake fit testing prior to the commencement of duties requiring respiratory protective equipment, a risk assessment should be documented. Reallocation of duties to a role not requiring respiratory protective equipment should be considered.

Practical elements of the implementation of this recommendation will differ between HHSs and facilities. Respiratory protection programs should consider contingencies for agency staff, contractors and students, and ensure that agencies, suppliers of contract staff and educational institutions are aware of the requirement for fit testing and of the brands and sizes of respirators available at HHS facilities.

**Recommendations**

Workplaces should develop systems to:

1. Clearly identify high- and medium-priority healthcare workers to be enrolled in a fit test program.
2. Continue to ensure that training on the use of respirators reinforces the requirement for the wearer to perform a fit check every time a respirator is fitted.
3. Wherever available and reasonably practicable, quantitative fit testing should be used in preference to qualitative fit testing.
4. Where a successful fit test is unable to be achieved, take measures to ensure alternative management – either through reallocation of duties, or development of an alternative, personalised PPE plan.
5. Establish processes to be followed when a staff member requires respiratory protection and no respirator for which they have been fit tested is available, noting that AS/NZS 1715:2009 provides guidance on this matter.
6. Maintain a database of fit testing outcome data, including name, date, payroll number, and result of testing and of instances where staff have continued to perform duties in situations where the wearing of a respirator and compliance of fit testing was required by relevant legislation, standards and guidance.
7. Ensure that an educational program for fitting and removal of respirators is provided, that focuses on the location and method for safe removal respirators to prevent the risk of transmission of healthcare associated infection (self-contamination). Required frequency of refresher training should also be considered.
8. Consultation with Health and Safety Representatives within the organisation should occur when implementing arrangements to comply with legislation, standard and guidance for fit testing and use of P2/N95 respirators.
Appendix 1: Work instruction for fit testing incorporating eHealth Maskhelper tool

The Maskhelper project has been designed with the idea of bringing about efficiency as well as uniformity and standardisation of quantitative fit testing underpinned by artificial intelligence (AI)-based facial recognition system.

Using AI-based facial recognition, Maskhelper provides an increased chance of initial choice of a respirator that will be able to achieve a successful fit test. As at 23 November 2021, Maskhelper’s accuracy is at 66% compared with 39% for an experienced fit tester. Further, if the first chosen mask is correct there is an increased predictability with the second and subsequent choices for an individual.

Use of Maskhelper saves time for both the fit tester and the individual being fitted, gives an alternative in the event of supply chain difficulties, and prevents wastage of respirators.

This work instruction provides information for fit testing programs to incorporate the use of the eHealth Maskhelper tool into the fit testing process as a first step triaging tool to make best use of the limited resources for fit testing.

The work instruction covers all fit testing for all particulate filter respirators that require a close fitting facepiece and subsequent seal with the user’s face.

This work instruction is based on Townsville Hospital and Health Service’s Standard Operating Procedure Quantitative RPE Fit Testing, and the work of the team at Townsville Hospital and Health Service is acknowledged.

Resources and requirements

Quantitative respirator fit testing requires a competent fit tester to prepare and administer a fit test using available Queensland Health procured RPE. Testing should occur in a standardised approach to limit biases caused by fit testers or personnel being fit tested.

Reagents and Consumables

| Reagent grade Isopropyl Alcohol | NaCl tablets – 100mg | Sample probes (disposables) |
| Test RPE (disposables) | Antiseptic Hand rub | Disinfectant Wipes |
| Labels (research fit tests only) |
Fit Testing of particulate filter respirators in respiratory protection programs v2.0 25 January 2022
PPE Working Group of the CRG

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<tr>
<th>Equipment</th>
<th>Safety</th>
<th>Results &amp; Pass Levels</th>
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<tr>
<td>Quantitative fit testing machine</td>
<td>Portable device (Research fit tests only)</td>
<td>Isopropyl Alcohol Class 3 Flammable Liquid, Packaging Group II</td>
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<tr>
<td>Respirator Fit Testing Machine</td>
<td>Fit-Testing Attachments (reusable masks and PAPRs)</td>
<td>Exposure of Fit Tester to symptomatic or asymptomatic ill personnel</td>
</tr>
<tr>
<td>Test RPE (reusable masks)</td>
<td>Computer (preferably laptop)</td>
<td>Exposure of personnel submitting for fit testing by previously tested personnel</td>
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<td></td>
<td></td>
<td>Exposure of personnel submitting for fit testing by symptomatic or asymptomatic Fit Tester</td>
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<td>Non-standardised fit testing</td>
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<td>Fit testers failing personnel if an individual has failed one exercise but passed overall</td>
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<td>Fit testers applying a higher pass mark based on personnel location of work, higher perceived risks, and subsequent protection.</td>
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<td>Results &amp; Pass Levels</td>
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<td>N95/P2 half face RPE, disposable and reusable must achieve a minimum Fit Factor Rating of 100 to be deemed a pass.</td>
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<td>Full face reusable RPE (including close-fitting facepiece PAPR) must achieve a minimum FFR of 500 to be deemed a pass.</td>
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<td>Fit Factors are provided at the end of each exercise; however, it is the Overall Fit Factor that determines a pass or fail. Individual fit factors allow early termination of a fit test when a test is destined for failure i.e. an individual exercise fit factor ≤45 is unlikely to pass overall especially when there is no or limited recovery on the subsequent exercise.</td>
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Work instruction

RPE Fit Testing Preparation

- The Fit testing machine must be within the calibration date (12 months) and located in an area that is either semi-enclosed or know to have limited air movement.
- The particulate generator must have the reservoir filled and one whole (not crushed) 100mg salt (NaCl) tablet added.
- Start the particulate generator approximately five (5) minutes prior to completing the daily check to build the number of particulates up in the atmosphere.
- Ensure that the alcohol cartridge reservoir is filled (to the indicator line approximately halfway up the reservoir) with reagent grade isopropyl alcohol and that the wick internal to the cartridge has had time to absorb the alcohol if starting from a dry wick and reservoir.
- Remove the cap from the fit testing machine and insert the alcohol cartridge being careful not to use excessive force as the locating tab is prone to failure.
- Turn on the fit testing machine and ensure that it is connected to a network enabled Queensland Health computer. Ensure that the sampling tubes are connected to the appropriate inlets (colour coded blue – blue, clear – clear).
- Turn on the Queensland Health computer and open the associated fit testing software (e.g. FitPro).
- Connect the fit testing machine in the fit testing software and commence the daily checks.
- Follow the on-screen instructions for the daily checks ensuring that N95 is selected when testing P2/N95 RPE.
- Once the daily checks are complete the fit testing machine is ready to commence sampling.

Procedure for incorporating Maskhelper into fit testing

1. Fit-Tester Logs into the local eHealth Maskhelper tool at Maskhelper (health.qld.gov.au)
2. Fit-Tester provides “Terms of Participation” that includes pop up link for consent form (PICF).
3. Fit-tester selects “Add on behalf of” button the top right of the eHealth Maskhelper tool. This enables the searching of Queensland Health personnel via the “fit-test on behalf of” field which is linked to DSS and anonymised to researchers.
4. Enter the reference ID number for the participant based on numerical order of participants for that day (01-99) for that site. e.g. TUH-22032021-01, TUH-22032021-02 and so on.
5. Record the participants research ID# on a self-adhesive label and apply to participants name badge or clothing. This is to ensure that no participant identifiable information is photographed.
6. Fit-Tester takes a frontal photo of the participant (that includes reference ID label)
7. The eHealth Maskhelper tool will analyse the frontal photo and select up to two RPE based on the participants facial characteristics
8. Fit tester must clean hands prior to handling RPE, fit test attachments or sample ports.
9. Fit-tester selects the recommended RPE taking into account the status of RPE supply. Instructs the participant to don the RPE and perform Fit Check for each RPE.
   a. If the Fit Check obviously fails do not proceed to quantitative fit testing – record comments such as likely fail point(s).
   b. If the Fit Check passes proceed to quantitative fit testing.

10. Insert the sample port into the selected RPE using the provided tool, ensure that the port is positioned approximately halfway between the participants mouth and nose.

11. Connect the sampling tube to the RPE sampling port or attachment and request the participant to don the RPE.

12. Allow the participant to fit the RPE as they normally would, observe the placement of the RPE on the face, the positioning of the straps and the method of adjusting the nose piece. Depending on local policy and workflow, take this opportunity to educate the participant on correct fitting and removal, and performing a fit check.

13. Commence the fit test, instruct the participant to commence bending over, demonstrate the positioning desired and the need to repeat until the machine beeps indicating the next step.

14. If a fail is likely and issue(s) have been identified with RPE fitting, take this time to adjust and review improvement/regression.

15. If a fail occurs, select alternative RPE.

16. Once the participant passes with an overall fit factor of 100 or greater complete the fit test certificate and provide to the participant (either in hard or electronic copy).

17. Complete research data including participant feedback and submit.

18. Complete local record (e.g. Learning Management System / LOL) so that the participant has access to their fit testing record.

19. Record all exercise Fit Factor and Overall Fit Factor Ratings – record comments such as adjusted fit bottom strap below ear, adjusted placement on nose, etc.

20. Once the recommended masks have been completed ensure that all Fit Factors, Overall Fit Factor Ratings, and comments have been completed before submitting eHealth Maskhelper tool.

21. If none of the recommended masks achieve a satisfactory fit, choose further masks from the drop-down menu on the eHealth tool to complete further testing and record Fit Factors, Overall Fit Factors, and comments.

**Post - fit testing**

- Disinfect the fit testing equipment including the sampling tube, any reusable respirators, reusable respirator attachments, rainbow passage, mirror, and hard surfaces around the fit testing machine using disinfection wipes.

- Place the portable device on charge ready for the next participant.

**Fit testing consumable management**

- Review consumables and order as necessary.
- Test Masks are ordered through normal PPE Ordering channels
- Isopropyl Alcohol and salt tablets are ordered through pharmacy
- Fit Testing machine consumables (sampling tube and sample probes) are ordered through the OEM (original equipment manufacturer) supplier

- Sterilise the fit testing equipment through central sterilisation
  - Sampling tube on a weekly basis (minimum)
  - Internal filter cages on a monthly basis (minimum)

Quality controls and acceptance criteria

Fit Testing machine Annual Calibration and daily checks

Record keeping and Reporting

Record and report respirator fit testing in accordance with local HHS requirements.
Consultation

This guidance was developed in consultation with:

- Safety and Wellbeing, Corporate Services Division, Queensland Health
- The Queensland Health Statewide Infection Clinical Network
- Clinician and HSCE representatives from the COVID Response Group (CRG)
- Communicable disease branch, Queensland Health
- Union representatives

Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition / Explanation / Details</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fit check</td>
<td>A simple check to ensure the respirator fits each time it is worn. Fit checks ensure the respirator is sealed over the bridge of the nose and mouth and that there are no gaps between the respirator and face. Fit checking must be performed each time a respirator is used, regardless of whether previous fit testing has been performed.</td>
<td>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</td>
</tr>
<tr>
<td>Fit factor</td>
<td>Numeric value of the fit of a particular tight-fitting respiratory interface to a specific individual</td>
<td>ISO16975-3</td>
</tr>
<tr>
<td>Fit test</td>
<td>A validated method of matching a respirator to an individual. There are two categories of fit test: qualitative and quantitative. A qualitative fit test gives pass or fail results and relies on a subject’s response to a test agent. A quantitative fit test gives numerical results and does not rely on the subject’s response to a test agent.</td>
<td>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</td>
</tr>
<tr>
<td>Healthcare worker (HCW)</td>
<td>Health care workers means all workers (including non-clinical) who work in the facilities or services in scope for this guidance.</td>
<td></td>
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<tr>
<td>P2/N95 Respirator</td>
<td>P2 and N95 masks are designed to help reduce respiratory exposure to airborne contaminants. They are used when there is a high probability of transmission from particles or droplets in the air. P2 and N95 masks must have a good facial fit to be effective.</td>
<td>Safe Work Australia</td>
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</tbody>
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Review

This guidance will be reviewed as new information becomes available. **Text highlighted in yellow has been changed since the last revision.**

### Version control

<table>
<thead>
<tr>
<th>Version control</th>
<th>Date</th>
<th>Prepared by</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>V0.1 – V0.09</td>
<td>Sep 2020-Feb 2021</td>
<td>Fit testing working group and then PPE Working Group of the CRG.</td>
<td>New document</td>
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<tr>
<td>V0.10</td>
<td>11/3/21</td>
<td>Dr Alex Markwell on behalf of PPE Working group</td>
<td>Incorporating further feedback and updated national guidelines</td>
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<tr>
<td>V1.0</td>
<td>March 2021</td>
<td>PPE Working Group</td>
<td></td>
</tr>
<tr>
<td>V1.1 – 2.0</td>
<td>November 2021-January 2022</td>
<td>PPE Working Group</td>
<td>Major editorial changes – changes to headings and flow of document, duplication removed.</td>
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### Approval and implementation

**Endorsement**

PPE Working Group 19 January 2022

COVID-19 System Response Group **25 January 2022**


**Approving officer:** Jane Hancock, COVID-19 Health System Response Lead

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**Term** | **Definition / Explanation / Details** | **Source**
---|---|---
Powered air-purifying respirator (PAPR) | A device incorporating a half facepiece, full facepiece or head covering which provides the wearer with air filtered through a powered filtering unit, comprising a filter or filters and an electrically operated blowing unit | AS1715:2009 Selection, use and maintenance of respiratory protective equipment
Contact area

PPE Working Group PPEWorkingGroup@health.qld.gov.au

References


Additional resources

- Respiratory Protection Against Airborne Infectious Diseases Clinical Guideline South Australia Health Clinical Guideline No.: CG099
- Respiratory Protection in Healthcare NSW Health Clinical Excellence Commission
- Victorian Respiratory Protection Program guidelines State of Victoria, Australia, Department of Health and Human Services