# Respiratory Protection Program for use by Healthcare Facilities during the COVID-19 Pandemic

 

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**Introduction**

# According to state and federal regulations, workplaces with workers that are required to wear fit-tested respirators must have an established “Respiratory Protection Program”.

# This document provides a “Respiratory Protection Program” template that is free to use for all members of the Washington Health Care Association. This template was modified to comply with Washington state regulations by staff of Employer Resources Northwest (ERNwest). ERNwest is WHCA’s partner in the WHCA Retro program.

During the COVID-19 Pandemic, health care practices have adapted by taking additional precautions for patients and health care team members. While health care facilities already use extensive universal precautions, additional precautionary actions are being implemented.

DOSH Directive 11.80 classifies health care team members who are providing direct care to either known or suspected COVID-19 residents / patients in a “High Risk Category”. Workers in this category are required to wear fit-tested filtering facepiece respirators (FFR’s) as a “minimum required mask or respiratory protection for employees without additional engineering controls or personal protective equipment.” This directive clarifies that “additional engineering controls or PPE” include “barriers, masks, face shields and/or local ventilation.”

DOSH Directive 1.70 states that “workers within 3 feet of a patient or equipment during an aerosol generating procedure must wear a fit-tested N95 filtering facepiece respirator or more protective respirator”. Unlike Directive 11.80, Directive 1.70 does not reference or refer to additional engineering controls or PPE.

During aerosol generating procedures, the CDC recommends the following related to PPE use:

*During aerosol-generating procedures conducted on patients assumed to be non-contagious, consider the use of an N95 respirator or a respirator that offers a higher level of protection such as other disposable filtering facepiece respirators, PAPRs, or elastomeric respirators, if available…If a respirator is not available for an aerosol-generating procedure, use both a surgical mask and a full-face shield. Ensure that the mask is cleared by the US Food and Drug Administration (FDA) as a surgical mask. Use the highest level of surgical mask available. If a surgical mask and a full-face shield are not available, do not perform any aerosol-generating procedures.*

This CDC guidance is consistent with DOSH’s PPE guidelines for those workers in its “Extremely High-Risk Category”. In this category, which is for workers at a higher risk than those in the “High Risk Category”, workers are directed to wear FDA-approved FFR’s or surgical masks with face shields.

WHCA will continue to share updates as possible.

# **Respiratory Protection Program for use by Health care Offices during the COVID-19 Pandemic**

# **(name of your company**) respirator program administrator is **(insert name of person managing respirator program)**

Our administrator’s duties are to oversee the development of the respiratory program and, make sure it is carried out at the workplace. The administrator will also evaluate the program regularly to make sure procedures are followed, respirator use is monitored, and respirators continue to provide adequate protection when job conditions change.

**Overview**

SARS-COV-2 is a novel coronavirus that is thought to spread mainly between people who are in close contact with one another primarily through respiratory droplets.

Some health care procedures that use health care instruments may create a spray that can contain contaminated droplets. This spray can also contain aerosols. However, the contribution of aerosols, or droplet nuclei, to close proximity transmission is currently uncertain.

This health care practice screens patients for symptoms of aerosol transmissible diseases and has a policy that symptomatic patients are not to be treated unless the patient is in pain, has an infection or requires emergency care that cannot be managed with medication. An asymptomatic patient is managed as a suspected carrier of SARS-COV-2 virus unless the patient has documented immunity to the virus.

During this phase of the pandemic, this health care practice avoids aerosol-generating procedures whenever possible. If aerosol-generating procedures are necessary for care, all appropriate respiratory guidance will be followed to ensure the continued health and safety of the workers.

Use of respirators at this health care facility is to protect against transmission of the SARS-COV-2 virus and other airborne diseases. The categories of employees who are included in this program are:

* CNA’s
* RN’s
* Health care assistants / caregivers
* Maintenance staff
* Housekeeping staff
* Physical Therapists
* Administrative staff
* Others

An employee who is not included in this program but volunteers to wear a respirator (FFR) may do so if the program administrator determines the respirator will not create a hazard. Generally, the requirements of the Washington Administrative Code for respiratory protection exempt any employee that voluntarily uses the FFR from compliance with this section.

#### Selection of Respirators

Air-purifying respirators (APRs) work by removing gas, vapor, particulate or combinations of gas, vapor and/or particulate from the air through the use of filters, cartridges or canisters. Covered employees will select from filtering facepiece respirators known as N95 or KN95 respirators. If there is adequate supply, use of an FDA-cleared surgical N95 is prioritized. An employee who has facial hair or any condition that interferes with the face-to-facepiece seal or valve function must not use tight-fitting respirators.

#### Medical Evaluations

Every employee of this company who must wear a respirator will be provided with a medical evaluation before they are allowed to use an FFR. Our first step is to give the attached medical questionnaire to those employees. Employees are required to fill out the questionnaire in private and send or give them to **(name of your medical provider who will evaluate the questionnaire)**. (If applicable Our non-readers or non-English-reading employees will be assisted by **(name of person not in management)**. Completed questionnaires are confidential and will be sent directly to the designated medical provider without review by management.

If the medical questionnaire indicates to our medical provider that a further medical exam is required, this will be provided at no cost to our employees by **(name of medical provider doing medical exam)**. The medical provider will recommend whether or not the employee is medically able to wear a respirator.

Additional medical evaluations will be done when:

* The medical provider recommends it,
* Our respirator program administrator decides it is needed,
* An employee shows signs of breathing difficulty,
* Changes in work conditions increase an employee’s physical stress (such as high temperatures or greater physical exertion).

#### Respirator Fit Testing

All employees designated to use the FFR’s will be fit-tested before using their respirator in the following manner:

* Fit testing will be repeated in accordance with State and Federal guidance.
* Fit testing will be repeated each time a different respirator facepiece is chosen, when there is a physical change in an employee’s face that would affect fit, or when an employee or the medical provider notify us that the fit is unacceptable.
* No facial hair is allowed on wearers of FFR’s.

Fit-testing will be done using the qualitative fit-testing protocols. (***See Appendix A*** *for qualitative fit-testing protocols*) Documentation of all fit-testing results shall be kept in each employees personnel file (***See Appendix B*** *for Employee fit test record template*)*.*

Respirators will be checked for proper sealing by the user whenever the respirator is first put on, using the appropriate seal check procedures for negative pressure filter facepiece style respirators. (***See Appendix D*** *for seal check steps*)

### Respirator storage, cleaning, maintenance and repair

Designated staff will be using disposable negative pressure filtering facepiece respirators (FR’s)known as N95 or (approved) KN95 respirators. These respirators will be disposed of after each shift or re-used consistent with Washington State Department of Health PPE Conservation Strategies

*If you have any non-disposable respirators being used by staff, you will need to add storage, cleaning and repair steps to this program.*

###### **Respirator Use**

The Program Administrator will monitor the work area in order to be aware of changing conditions where employees are using respirators and determined there are no areas or job duties presenting as potential for IDLH (immediately dangerous to life or health) conditions.

Employees will not be allowed to wear respirators with tight-fitting facepieces if they have facial hair (e.g., stubble, bangs) absence of normally worn dentures, facial deformities (e.g., scars, deep skin creases, prominent cheekbones), or other facial features that interfere with the facepiece seal or valve function. Jewelry or headgear that projects under the facepiece seal is also not allowed.

If corrective glasses or other personal protective equipment is worn, ensure that glasses will not interfere with the seal of the facepiece to the face.

Employees will leave the area where respirators are required for any of the following reasons:

* When they notice a change in breathing resistance
* To adjust their respirator,
* To wash their face,
* If they become ill,
* If they experience dizziness, nausea, weakness, breathing difficulty, coughing, sneezing vomiting, fever or chills.

###### **Respirator Training**

Training is done by **(list the respiratory protection trainer)** before employees wear their respirators and annually thereafter as long as they wear respirators.

Training will cover the following topics:

* Why the respirator is necessary,
* The respirator’s capabilities and limitations,
* How improper fit, use or maintenance can make the respirator ineffective,
* How to properly inspect, put on, seal check, use, and remove the respirator,
* Medical symptoms that may limit or prevent respirator use,
* Our obligations under the Respirators Rule.

(Name of facility) employee training document is located in **Appendix E**.

#### Respiratory Program Evaluation

Our respiratory program is reviewed for effectiveness by:

1. Checking results of fit-test results and health provider evaluations.
2. Talking with employees who wear respirators about their respirators – how they fit; do they feel they are being adequately protected; do they notice any difficulties in breathing while wearing them; etc.
3. Periodically checking employee job duties for changes in exposure.
4. Periodically checking storage of unused respirators.
5. Periodically checking how employees use their respirators.
6. (*list any other program evaluation criteria*)

###### **Recordkeeping**

The following records will be kept:

* A copy of this completed respirator program
* Medical Evaluations
* Employees’ latest fit-testing results
* Employee training records (*See* ***Appendix C*** *for training record template*)

The records will be kept (*insert record retention location, either employee personnel file or single locked records location*). Employees will have access to these records when requested.

#

# **Appendix A**

**Fit Testing Protocols**

Fit Testing Procedures - General Requirements. The employer shall conduct fit testing using the following procedures.

1. The employee shall be allowed to pick the most acceptable respirator from a

sufficient number of respirator models and sizes so that the respirator is acceptable

to, and correctly fits, the user.

1. Prior to the selection process, the employee shall be shown how to *don* a

respirator, how it should be positioned on the face, how to set strap tension and how

to determine an acceptable fit. A mirror shall be available to assist the subject in

evaluating the fit and positioning of the respirator. This instruction may not constitute

the subject's formal training on respirator use, because it is only a review.

1. The employee shall be informed that he/she is being asked to select the respirator

that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.

1. The employee shall be instructed to hold each chosen facepiece up to the face and

eliminate those that obviously do not give an acceptable fit.

1. The more acceptable facepieces are noted in case the one selected proves

unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A, 6. If the employee is not familiar with using a particular respirator, the employee shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

1. Assessment of comfort shall include a review of the following points with the employee and allowing time to determine the comfort of the respirator.

(a) Position of the mask on the nose

(b) Room for eye protection

(c) Room to talk

(d) Position of mask on face and cheeks

1. The following criteria shall be used to determine the adequacy of the respirator fit:

(a) Properly placed around chin;

(b) Adequate strap tension, not overly tightened;

(c) Fit across nose bridge;

(d) Respirator of proper size to span distance from nose to chin;

(e) Tendency of respirator to slip;

(f) Self-observation in mirror to evaluate fit and respirator position.

1. The test employee shall conduct a user seal check, either the negative and positive

pressure seal checks described in **Appendix D** or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in **Appendix D.**

Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the employee fails the user seal check tests.

1. The test shall not be conducted if there is any hair growth between the skin and the

facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

1. If employee exhibits difficulty in breathing during the tests, she or he shall be

referred to a physician or other licensed health care professional (LHCP), as appropriate, to determine whether the employee can wear a respirator while performing their duties.

1. If the employee finds the fit of the respirator unacceptable, the employee shall be

given the opportunity to select a different respirator and to be retested.

1. Exercise regimen. Prior to the commencement of the fit test, the employee shall be

given a description of the fit test and the employee's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

1. The fit test shall be performed while the employee is wearing any applicable safety

equipment that may be worn during actual respirator use which would interfere with respirator fit.

14. Test Exercises. Employers must perform the following test exercises for all fit testing

 methods prescribed in this appendix. Employers must ensure that employees

 perform the test exercises in the appropriate test environment in the following

 manner:

1. Normal breathing. In a normal standing position, without talking, the subject

shall breathe normally.

1. Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
2. Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
3. Moving head up and down. Standing in place, the subject shall slowly move

his/her head up and down. The subject shall be instructed to inhale in the up

position (i.e., when looking toward the ceiling).

1. Talking. The subject shall talk out loud slowly and loud enough so as to be

heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage (below), count backward from 100, or recite a memorized poem or song.

*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 colors. 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 reach, his friends say he is looking for the pot of gold at the end of the rainbow.*

1. Grimace. The employee shall grimace by smiling or frowning. (This applies only to QNFT (quantitative) testing; it is not performed for QLFT – (qualitative) testing)
2. Bending over. The employee shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.
3. Normal breathing. Same as exercise (14, i above) Each test exercise shall be

 performed for one minute except for the grimace exercise, which shall be

 performed for 15 seconds. The employee shall be questioned by the test

 conductor regarding the comfort of the respirator upon completion of the

 protocol. If it has become unacceptable, another model of respirator shall be

 tried. The respirator shall not be adjusted once the fit test exercises begin.

 Any adjustment voids the test, and the fit test must be repeated.

**Qualitative Fit Test (QLFT) Protocols**

1. The employer shall ensure that persons administering QLFT are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and ensure that test equipment is in proper working order.
2. The employer shall ensure that QLFT equipment is kept clean and well

 maintained so that it will operate within design parameters.

**THREE QUALIATIVE FIT TEST OPTIONS.**

**Option 1: Saccharin solution aerosol fit test procedure**.

1. The employee may not eat, drink (except for plain water), smoke, or chew gum for 15 minutes before the test.

 (2) The fit test uses the same enclosure described above.

1. The employee shall don the enclosure while wearing the respirator selected in

Appendix A,1 above. The respirator shall be properly adjusted and equipped with a appropriate particulate filter(s), if needed.

1. A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is

used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

1. The fit test solution is prepared by adding 0.83 grams of sodium saccharin to 100 ml of warm water.
2. As before, the employee shall breathe through the slightly open mouth with the

tongue extended, and report if he/she tastes the sweet taste of saccharin.

1. The nebulizer is inserted into the hole in the front of the enclosure and an initial

concentration of saccharin fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test. A minimum of 10 squeezes is required.

1. After generating the aerosol, the employee shall be instructed to perform the

exercises in Appendix A, #14 above.

1. Every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (e.g., 5, 10, or 15).
2. The employee shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected. If the employee does not report tasting the saccharin, the test is passed.
3. If the taste of saccharin is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried, and the entire test procedure is repeated (taste threshold screening and fit testing).
4. Since the nebulizer has a tendency to clog during use, the test operator must make periodic checks of the nebulizer to ensure that it is not clogged. If clogging is found at the end of the test session, the test is invalid.

**Option 2: BitrexTM(Denatonium Benzoate) Solution Aerosol Qualitative Fit Test Protocol**.

The BitrexTM (Denatonium benzoate) solution aerosol QLFT protocol uses the published saccharin test protocol because that protocol is widely accepted. Bitrex is routinely used as a taste aversion agent in household liquids which children should not be drinking and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing procedure shall be explained to the employee prior to the conduct of the screening test.

1. Taste Threshold Screening. The Bitrex taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of Bitrex.
2. During threshold screening as well as during fit testing, subjects shall wear an

enclosure about the head and shoulders that is approximately 12 inches (30.5 cm) in diameter by 14 inches (35.6 cm) tall. The front portion of the enclosure shall be clear from the respirator and allow free movement of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts #14 and #15 combined, is adequate.

1. The test enclosure shall have a 3/4-inch (1.9 cm) hole in front of the employee's nose and mouth area to accommodate the nebulizer nozzle.
2. The employee shall don the test enclosure. Throughout the threshold screening test, the employee shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste.
3. Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the Threshold Check Solution into the enclosure. This Nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.
4. The Threshold Check Solution is prepared by adding 13.5 milligrams of Bitrex to 100 ml of 5% salt (NaCl) solution in distilled water.
5. To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely and is then released and allowed to fully expand.
6. An initial ten squeezes are repeated rapidly and then the employee is asked whether the Bitrex can be tasted. If the employee reports tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes completed.
7. If the first response is negative, ten more squeezes are repeated rapidly, and the

employee is again asked whether the Bitrex is tasted. If the employee reports

tasting the bitter taste during the second ten squeezes, the screening test is

completed. The taste threshold is noted as twenty regardless of the number of

squeezes actually completed.

1. If the second response is negative, ten more squeezes are repeated rapidly, and the employee is again asked whether the Bitrex is tasted. If the employee reports tasting the bitter taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.
2. The test conductor will take note of the number of squeezes required to solicit a taste response.
3. If the Bitrex is not tasted after 30 squeezes (step 10), the employee is unable to taste Bitrex and may not perform the Bitrex fit test.
4. If a taste response is elicited, the employee shall be asked to take note of the taste for reference in the fit test.
5. Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.
6. The nebulizer shall be thoroughly rinsed in water, shaken to dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Bitrex Solution Aerosol Fit Test Procedure.

1. The employee may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure as that described in 4. (a) above.

(3) The employee shall don the enclosure while wearing the respirator selected

 according to Appendix A, #1 above. The respirator shall be properly adjusted

 and equipped with any type particulate filter(s).

 (4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used

 to spray the fit test solution into the enclosure. This nebulizer shall not be clearly

 marked to distinguish it from the screening test solution nebulizer.

 (5) The fit test solution is prepared by adding 337.5 mg of Bitrex to 200 ml of a 5% salt

 (NaCl) solution in warm water.

(6) As before, the employee shall breathe through his or her slightly open mouth with

 tongue extended and be instructed to report if he/she tastes the bitter taste of Bitrex.

1. The nebulizer is inserted into the hole in the front of the enclosure and an initial

 concentration of the fit test solution is sprayed into the enclosure using the same

 number of squeezes (either 10, 20 or 30 squeezes) based on the number of

 squeezes required to elicit a taste response as noted during the screening test.

1. After generating the aerosol, the employee shall be instructed to perform the

exercises in Appendix A, #14. above.

1. Every 30 seconds the aerosol concentration shall be replenished using one half the

number of squeezes used initially (e.g., 5, 10 or 15).

1. The employee shall indicate to the test conductor if at any time during the fit test the taste of Bitrex is detected. If the employee does not report tasting the Bitrex, the test is passed.
2. If the taste of Bitrex is detected, the fit is deemed unsatisfactory and the test is

 failed. A different respirator shall be tried, and the entire test procedure is repeated

 (taste threshold screening and fit testing).

**OPIrritant Smoke (Stannic Chloride) Protocol.**This qualitative fit test uses a person's response to the irritating chemicals released in the “smoke” produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

(a) General Requirements and Precautions

(1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).

(2) Only stannic chloride smoke tubes shall be used for this protocol.

(3) No form of test enclosure or hood for the test subject shall be used.

(4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.

(5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.

(1) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.

(2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.

(3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

(c) Irritant Smoke Fit Test Procedure

(1) The person being fit tested shall don the respirator without assistance and perform the required user seal check(s).

(2) The test subject shall be instructed to keep his/her eyes closed.

(3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the faceseal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.

(4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.

(5) The exercises identified in Appendix A, #14. of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.

(6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.

(7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.

(8) If a response is produced during this second sensitivity check, then the fit test is passed.

**Appendix B**

**Respirator Fit Test Record**

**Name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Initials**: \_\_\_\_\_\_\_\_

**Type of qualitative/quantitative fit test used**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Name of test operator**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Initials**: \_\_\_\_\_\_\_

**Date**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Respirator Mfr./Model/Approval no. Size Pass/Fail or Fit Factor

Note: “Fit factor” is numerical result of quantitative fit test from instrument reading

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_S M L P F \_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_S M L P F \_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_S M L P F \_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_S M L P F \_\_\_\_\_

**Clean Shaven?** Yes\_\_\_ No\_\_\_ (Fit-test cannot be done unless clean-shaven)

**Medical Evaluation Completed?** Yes\_\_\_ No\_\_\_

**NOTES**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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This record indicates that you have passed or failed a qualitative or quantitative fit test as shown above for the particular respirator(s) shown. Other types will not be used until fit tested.**Appendix C**

# **Respirator Training Record**

I certify that I have been trained in the use of the following respirator(s):

(*Brand*)/(*Size)*

(*Change if using different type of respirator*)

Example: Large 3M/N95 Filter Face Piece Respiratoror BYD N95 Filter Face Piece Respirator

This training included the inspection procedures, fitting, maintenance and limitations of the above respirator(s). I understand how the respirator operates and provides protection. I further certify that I have heard the explanation of the respirator as described above and I understand the instructions relevant to use and the limitations of the respirator.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Employee Signature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Instructor Signature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Date

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**Appendix D**

**User Seal Check Procedure**

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturer-recommended user seal check method must be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

**1) Facepiece Positive and/or Negative Pressure Checks**

*a) Positive pressure check: c*lose off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

*b) Negative pressure check:* close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

**2) Manufacturer-Recommended User Seal Check Procedures**

The respirator’s manufacturer-recommended procedures for performing a user seal

check may be used instead of the positive and/or negative pressure check

procedures if the employer demonstrates that the manufacturer's procedures are

equally effective.



**Appendix E**

**Employee Training Information**

**I. What Is an N95 Filtering Facepiece Respirator?**

N95 filtering facepiece respirators (FFR’s) are air-purifying respirators certified by the National Institute of Occupational Safety and Health (NIOSH) to have filter efficiency level of 95% or greater against particulate aerosols free of oil and greater than 0.3 microns in size.

Examples of airborne contaminants that N95 respirators filter out include dusts, fumes, mists, and microbial agents such as tuberculosis bacteria & flu virus.

**II. When Are N95 Respirators Required?**

Depending on your job responsibilities, N95 respirators may be required as personal protective equipment. Individuals may be required to wear N95 for tasks such as entering isolation rooms, and other activities involving close contact with potentially infected persons.

**III. Approval for Required N95 Use:**

Per WAC 296-842, personnel who are required by their employer to wear respirators, shall be approved after completing the following:

Medical Evaluation/ Clearance: to determine if users are physically fit to wear a respirator.

Training: to ensure users are familiar with N95 respirators, their proper use and protective limitations. Training consists of reviewing this document and taking the training quiz and is required on an annual basis.

Fit-Testing: to determine which respirator model/ size provides the proper fit for the user. Such fit test is required on an annual basis.

**IV. Capabilities and Limitations of N95 Respirators**

N95 respirators ONLY filter out particulate contaminants.

N95 respirators do not protect you from:

* Chemical vapors/ gases
* Oxygen deficient atmosphere
* High risk exposures such as those created by aerosol-generating procedures (i.e., bronchoscopy, autopsy) and asbestos handling.

N95 respirators are disposable – one time use only.

**V. Effective Use of N95 Respirators**

The effectiveness of N95 respirators relies on how well the respirator seals to the user’s face.

To ensure N95 respirators work effectively:

ONLY use the respirator model and size for which you have been fit-tested. N95 respirators vary by model and size. Improper fit will likely result in inadequate protection.

DO NOT use the respirator with beards or other facial hair, which may interfere with the direct contact between your face and the sealing surface of the respirator.

Conduct a seal-check every time you put the respirator on (before entering area of concern).

If the respirator becomes damaged, soiled or you experience problems with using the respirator (breathing becomes difficult, dizziness, irritation, etc.), leave the work area immediately and remove the respirator when you are no longer exposed to the potential airborne hazard. Inform your supervisor about the issue.

If you have any questions regarding N95 respirators, contact your supervisor immediately.

**VI. Further Medical Evaluation/ Training/ Fit-Testing**

1) Medical re-evaluation is required if user reports medical signs/ symptoms that are related to the ability to use a respirator, or if changes in the work place/ activities may result in a substantial increase in the physiological burden placed on the respirator user. For N95 medical re-evaluation, contact your supervisor.

2) Fit-Testing needs to be repeated annually, unless exempted by special order, and whenever changes in the workplace/ activities or type of respirator used affect the respirator fit [i.e. facial/ health care changes and changes in body weight (more than 10-20 lbs)].

3) Training needs to be repeated annually and whenever inadequacies in user’s knowledge or use of the respirator indicate that the user has not retained the requisite understanding or skill to wear a respirator.

 **VII. Inspection**

Prior to wearing the N95 respirator, inspect the respirator for damage and contamination. Verify all components of the respirator are in good condition (e.g. straps, nose piece, etc.)

**Appendix F**

**Respirator Medical Evaluation Questionnaire**

**To the employer:**

Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

**To the employee:**

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

**Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).**

1. Today's date:
2. Your name:
3. Your age (to nearest year) :
4. Sex (circle one): Male/Female
5. Your height: \_\_\_\_\_\_\_\_\_\_ ft. \_\_\_\_\_\_\_\_\_\_ in.
6. Your weight: \_\_\_\_\_\_\_\_\_\_\_\_ lbs.
7. Your job title:
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code):
9. The best time to phone you at this number:
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
11. Check the type of respirator you will use (you can check more than one category):
a. \_\_\_\_\_\_ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
b. \_\_\_\_\_\_ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator (circle one)? Yes/No

If "yes," what type(s):

**Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").**

1) Do you *currently* smoke tobacco, or have you smoked tobacco in the last month? Yes/No

2) Have you *ever had* any of the following conditions?

a) Seizures (fits): Yes/No

b) Diabetes (sugar disease): Yes/No

c) Allergic reactions that interfere with your breathing: Yes/No

d) Claustrophobia (fear of closed-in places): Yes/No

e) Trouble smelling odors: Yes/No

3) Have you *ever had* any of the following pulmonary or lung problems?

a) Asbestosis: Yes/No

b) Asthma: Yes/No

c) Chronic bronchitis: Yes/No

d) Emphysema: Yes/No

e) Pneumonia: Yes/No

f) Tuberculosis: Yes/No

g) Silicosis: Yes/No

h) Pneumothorax (collapsed lung): Yes/No

i) Lung cancer: Yes/No

j) Broken ribs: Yes/No

k) Any chest injuries or surgeries: Yes/No

l) Any other lung problem that you've been told about: Yes/No

4) Do you *currently* have any of the following symptoms of pulmonary or lung illness?

* 1. Shortness of breath: Yes/No
	2. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
	3. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
	4. Have to stop for breath when walking at your own pace on level ground: Yes/No
	5. Shortness of breath when washing or dressing yourself: Yes/No
	6. Shortness of breath that interferes with your job: Yes/No
	7. Coughing that produces phlegm (thick sputum): Yes/No
	8. Coughing that wakes you early in the morning: Yes/No
	9. Coughing that occurs mostly when you are lying down: Yes/No
	10. Coughing up blood in the last month: Yes/No
	11. Wheezing: Yes/No
	12. Wheezing that interferes with your job: Yes/No
	13. Chest pain when you breathe deeply: Yes/No
	14. Any other symptoms that you think may be related to lung problems: Yes/No

5) Have you *ever had* any of the following cardiovascular or heart problems?

a) Heart attack: Yes/No

b) Stroke: Yes/No

c) Angina: Yes/No

d) Heart failure: Yes/No

e) Swelling in your legs or feet (not caused by walking): Yes/No

f) Heart arrhythmia (heart beating irregularly): Yes/No

g) High blood pressure: Yes/No

h) Any other heart problem that you've been told about: Yes/No

6) Have you *ever had* any of the following cardiovascular or heart symptoms?

a) Frequent pain or tightness in your chest: Yes/No

b) Pain or tightness in your chest during physical activity: Yes/No

c) Pain or tightness in your chest that interferes with your job: Yes/No

d) In the past two years, have you noticed your heart skipping or missing a beat: Yes/No

e) Heartburn or indigestion that is not related to eating: Yes/ No

f) Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7) Do you *currently* take medication for any of the following problems?

a) Breathing or lung problems: Yes/No

b) Heart trouble: Yes/No

c) Blood pressure: Yes/No

d) Seizures (fits): Yes/No

8) If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

a) Eye irritation: Yes/No

b) Skin allergies or rashes: Yes/No

c) Anxiety: Yes/No

d) General weakness or fatigue: Yes/No

e) Any other problem that interferes with your use of a respirator: Yes/No

9) Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

**Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.**

10) Have you *ever lost* vision in either eye (temporarily or permanently): Yes/No

11) Do you *currently* have any of the following vision problems?

a) Wear contact lenses: Yes/No

b) Wear glasses: Yes/No

c) Color blind: Yes/No

d) Any other eye or vision problem: Yes/No

12) Have you *ever had* an injury to your ears, including a broken eardrum? Yes/No

13) Do you *currently* have any of the following hearing problems?

a) Difficulty hearing: Yes/No

b) Wear a hearing aid: Yes/No

c) Any other hearing or ear problem: Yes/No

14) Have you *ever had* a back injury? Yes/No

15) Do you *currently* have any of the following musculoskeletal problems?

a) Weakness in any of your arms, hands, legs, or feet: Yes/No

b) Back pain: Yes/No

c) Difficulty fully moving your arms and legs: Yes/No

d) Pain or stiffness when you lean forward or backward at the waist: Yes/No

e) Difficulty fully moving your head up or down: Yes/No

f) Difficulty fully moving your head side to side: Yes/No

g) Difficulty bending at your knees: Yes/No

h) Difficulty squatting to the ground: Yes/No

i) Climbing a flight of stairs or a ladder carrying more than 25 lbs.: Yes/No

j) Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

 **Part B. Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.**

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen? Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest or other symptoms when you're working under these conditions? Yes/No

1. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them:

3) Have you ever worked with any of the materials, or under any of the conditions, listed below?

a) Asbestos: Yes/No

b) Silica (*e.g.*, in sandblasting): Yes/No

c) Tungsten/cobalt (e.g., grinding or welding this material): Yes/No

d) Beryllium: Yes/No

e) Aluminum: Yes/No

f) Coal (for example, mining): Yes/No

g) Iron: Yes/No

h) Tin: Yes/No

i) Dusty environments: Yes/No

1. Any other hazardous exposures: Yes/No

 If "yes," describe these exposures:

4) List any second jobs or side businesses you have:

5) List your previous occupations:

6) List your current and previous hobbies:

1. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat)? Yes/No

8) Have you ever worked on a HAZMAT team? Yes/No

1. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? Yes/No

 If "yes," name the medications if you know them:

10) Will you be using any of the following items with your respirator(s)?

a) HEPA Filters: Yes/No

b) Canisters (for example, gas masks): Yes/No

c) Cartridges: Yes/No

11) How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?

a) Escape only (no rescue): Yes/No

b) Emergency rescue only: Yes/No

c) Less than 5 hours *per week:* Yes/No

d) Less than 2 hours *per day:* Yes/No

e) 2 to 4 hours per day: Yes/No

f) Over 4 hours per day: Yes/No

12) During the period you are using the respirator(s), is your work effort:

1. *Light* (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: \_\_\_\_\_\_\_\_\_\_\_\_hrs.\_\_\_\_\_\_\_\_\_\_\_\_mins.

Examples of a light work effort are *sitting* while writing, typing, drafting, or performing light assembly work; or *standing* while operating a drill press (1-3 lbs.) or controlling machines.

1. *Moderate* (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift:\_\_\_\_\_\_\_\_\_\_\_\_hrs.\_\_\_\_\_\_\_\_\_\_\_\_mins.

Examples of moderate work effort are *sitting* while nailing or filing; *driving* a truck or bus in urban traffic; *standing* while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; *walking* on a level surface about 2 mph or down a 5-degree grade about 3 mph; or *pushing* a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

1. *Heavy* (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: \_\_\_\_\_\_\_\_\_\_\_\_hrs.\_\_\_\_\_\_\_\_\_\_\_\_mins.

Examples of heavy work are *lifting* a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; *shoveling; standing* while bricklaying or chipping castings; *walking* up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

1. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator? Yes/No

 If "yes," describe this protective clothing and/or equipment:

14) Will you be working under hot conditions (temperature exceeding 77 degrees F)? Yes/No

15) Will you be working under humid conditions? Yes/No

16) Describe the work you'll be doing while you're using your respirator(s):

17) Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18) Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance:

Estimated maximum exposure level per shift:

Duration of exposure per shift:

Name of the second toxic substance:

Estimated maximum exposure level per shift:

Duration of exposure per shift:

Name of the third toxic substance:

Estimated maximum exposure level per shift:

Duration of exposure per shift:

The name of any other toxic substances that you'll be exposed to while using your respirator:

1. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):