

13. Respiratory Protection Program

The purpose of this program is to establish the requirements for employees who are required or choose to wear a respirator as part of their assigned tasks. This program complies with WAC 296-842 and 296-841. This program applies to employees of all City departments excepting Police.

Certain respirators will be provided by the City to employees for voluntary use to reduce nuisance dust, odors, allergens, and airborne pathogens. Guidelines for voluntary respirator use are at the end of this document.

Some projects may require respirator use for a limited period for employees who must work around known contaminants. When respirator use becomes mandatory, specific protocols such as medical clearance, training, and fit testing are required before allowing employees to use a respirator.

All personnel that work with or may contact the harmful substances or environments which require respiratory protection will be notified of the locations and tasks that the city has identified.

Program Administrator

The Respiratory Program Administrator is responsible for keeping the respirator program effective in practice. The Safety Coordinator will serve in this role and will ensure that procedures and program specifics are followed and appropriate. This includes:

- Respiratory hazard evaluation
- Respirator selection
- Medical evaluation procedure
- Annual fit testing training and recordkeeping

The Program Administrator will make sure selected respirators continue to be effective. For example, changes in work conditions, level of employee exposure, or physical stress require a re-evaluation of respirator selection. This position will have supervisors periodically monitor employee respirator use to make sure employees are using them properly. Supervisors will regularly ask employees required to use respirators about their views concerning program effectiveness and whether they have problems with:

- Respirator fit during use
- Any effects of respirator use on work performance
- Respirators being appropriate for the hazards encountered
- Proper use under current work conditions
- Proper maintenance

Medical Evaluation and Clearance

Prior to voluntary or mandatory respirator use, employees must be evaluated by a qualified licensed health care practitioner (LHCP) to ensure that respirator use does not pose a physical risk for the employee. If an employee does not receive medical clearance, they cannot use a respirator voluntarily or be assigned to task with mandatory respirator use.

Voluntary use of a filtering face piece (dust mask) does not require medical evaluation (See Voluntary Respirator Use).

The evaluation is repeated at a frequency determined by the LHCP, when the conditions of use substantially increase physiological effort, or when the employee reports or exhibits medical signs or symptoms when using a respirator that may increase their risk.

The City is responsible for costs related to medical evaluation for fitness to use a respirator. Medical records related to respirator clearance are confidential and kept by the LHCP for 30 years after employment in accordance with WAC 296-802. The LHCP provides a written recommendation to the Program Administrator with only the following information:

- Whether or not the employee is medically able to use the respirator
- Any limitations of respirator use for the employee
- What future medical evaluations are needed
- A statement that the employee has been provided a copy of the written recommendation

The Program Administrator will keep a copy of the current recommendation until it is superseded, or a respirator clearance is no longer needed. Written recommendations by the LHCP are not medical records. The contents of the respiratory questionnaire are established by DOSH. The LHCP may need to contact the employee to ask clarifying questions or perform additional testing before clearing an employee for a specific respirator and hazard. The City must provide the LHCP with a copy of this program, WAC 296-842 (Respiratory Protection), and information describing how the respirators will be used. This must be updated as conditions change and includes:

- Hazards encountered
- Frequency of use
- Duration of use per work shift
- Expected physical work effort
- Personal protective clothing and equipment that increases effort
- Temperature and humidity extremes of the work environment

Fit Testing

Mandatory respirator users must pass a fit test at assignment and every 12 months after. Loose fitting respirators do not require fit testing. Fit tests must also be done whenever conditions change that may affect fit quality, including:

- Change in respirator model, size, or style
- Weight change that could affect fit
- Facial scarring
- Dental changes
- Notification by an employee that respirator fit is unacceptable
- Incident investigation indicates fit may be wrong

Fit tests cannot be done if there is any potential interference with the seal or valve function, including:

- Moustache, stubble, sideburns, bangs, hairline, and other types of facial hair in areas where the respirator facepiece seals or that interfere with valve function.
- Temple bars of corrective eyewear or headgear that extend through the face seal area.

The Program Administrator is responsible for making sure fit testing is done correctly and as needed. The person who conducts the fit testing must be able to do all the following:

- Prepare test solutions, if required
- Make sure equipment works properly

- Perform tests correctly
- Recognize invalid tests
- Calculate passing fit factor for quantitative tests

Respirator Selection

Respirators and cartridges are supplied by the City of Mercer Island at no cost to employees. Employee-supplied respirators are not allowed without their supervisor’s approval. All respiratory protection equipment must be NIOSH-certified for the intended use. The NIOSH-certification and cartridge color-coding must remain readable and intact during use.

Activity	Agent of Concern	Respirator/Cartridge	APF	Fit Test	Use type
Any	Nuisance Agent	Filtering facepiece (dust mask)	10	None	Voluntary
EUA	Wildfire smoke, airborne pathogens	Filtering facepiece (dust mask)	10	None	Mandatory
Project	Project specific	Half-mask APR	10	Quantitative	Mandatory
Project	Project specific	Full-mask APR	50	Quantitative	Mandatory
Project	Nuisance Agent	Loose fitting hood PAPR	25	None	Voluntary
Project	Silica, welding fume, airborne pathogens	Loose fitting hood PAPR	25	None	Mandatory

APF – Assigned Protection Factor – The expected level of respiratory protection provided by a properly functioning and worn respirator. The APF is assigned to the respirator type by the National Institute of Occupational Safety and Health (NIOSH).

EUA – Emergency Use Authorization – Temporary regulations or guidance issued by a government agency in response to a specific health concern such as wildfire smoke or pandemic illness.

Quantitative fit test - An assessment of respirator fit that measures the amount of leakage into the respirator using specialized equipment. Test results are used to calculate a fit factor which must be at least equal to the assigned protection factor (APF) of the respirator.

Types of Respirators and Maintenance

• **Filtering facepiece (dust masks)**

These simple, two-strap disposable dust masks are designed only for dusts. They are not as protective as other respirators, but do an adequate job in many cases, unless the dust is toxic or copious. All dust masks bought by the City will be NIOSH 95 rated or better. Adhere to the following practices to maintain filtering facepiece respirators:

- Check manufacturer user manual for specific requirements.
- Store mask in original packaging, purpose-designed holder, or plastic bag.
- Do not use it if the straps, sealing surface, or mask are in any way compromised.
- Discard after single use if wet or damaged unless an EUA is in effect.

• **Half or full mask air-purifying respirator (APR)**

This type of respirator features a removable air-filtering cartridge that protects users against dust and chemicals. Full-face respirators provide a higher protection factor and should be worn in instances where exposures pose risks to skin absorption or irritation or when eye protection is necessary.

Cartridges are available for solvents, ammonia, chlorine, acids, and other chemicals, and selecting the correct cartridge is essential. Cartridges must be replaced periodically, especially for

chemicals, as they can absorb only so much contaminant before breakthrough occurs. Certain cartridges are equipped with end-of-service indicators that show when a cartridge should be replaced. Reference the “Air Purifying Cartridges” section for maintenance instructions.

Adhere to the following practices to maintain APRs:

- Check manufacturer user manual for specific requirements.
 - Store mask in original packaging, purpose-designed holder, or plastic bag without cartridges attached.
 - Keep away from sunlight, temperature and humidity extremes, dust, and contaminants.
 - Masks are assigned to individual users. Clean the respirator as often as needed to prevent skin irritation.
 - Clean with disposable respirator wipes or mild soap/water and let air dry completely.
 - Inspect prior to each use and after each cleaning. Face seal should be smooth and without tears. Inhalation and exhalation valve flaps should sit flat against the sealing surface. Straps should not be stretched, twisted, or knotted. Cartridge threads must be smooth and intact. Remove any defective mask from service immediately.
 - Half masks with defects should be discarded and replaced.
 - Full masks may be repaired by a qualified person. Contact the Program Administrator for direction.
- **Loose fitting powered air-purifying respirator (PAPR)**
This type of air purifying respirator has a powered component in addition to an air-filtering cartridge. Adhere to the following practices to maintain PAPRs:
 - Reference manufacturer user manual for specific requirements.
 - Store components in original packaging, purpose-designed holder, or plastic bag without cartridges attached.
 - Keep away from sunlight, temperature and humidity extremes, dust, and contaminants.
 - Remove battery from pump prior to long term storage.
 - Loose fitting PAPRs can be shared by users. Clean the respirator as often as needed to prevent skin irritation.
 - Clean with disposable respirator wipes or mild soap/water. Let air dry completely.
 - Inspect prior to each use and after each cleaning. Sealing bellows should be in good condition and without tears. Straps should not be stretched, twisted, or knotted. Cartridge threads must be smooth and intact. Remove any defective mask from service immediately.
 - PAPRs may be repaired by a qualified person. Contact the Program Administrator for direction.
- **Air-purifying cartridges**
 - Cartridges should be kept sealed until use.
 - Check expiration date prior to use.
 - Replace if wet, damaged, breakthrough odors or increased breathing resistance occur.
 - Assure that the cartridge matches the brand of the mask.
 - Assure that the cartridge is appropriate for the hazard.
 - Not effective against all contaminants or low oxygen.

Respirator Use Rules

Staff who are required to use a respirator shall follow manufacturer recommendations for use and keep their respirator in good working condition. Respirators must be stored, inspected, cleaned, and repaired as directed. Cartridges and filters must be changed on a schedule or when no longer effective (increased breathing resistance is a removal criterion). Staff must wear the correct size of respirator as selected during fit testing, and nothing that interferes with the seal is allowed during mandatory or voluntary respirator use. This includes facial hair, sideburns, glasses, bangs, and anything in the mouth such as gum. There is an exception for voluntary use of a filtering facepiece over facial hair is allowed for non-occupational agents of concern only (this includes air quality related to smoke and exposure to allergens). User must be outside of contaminated area for both donning and doffing of all respirators.

- **Donning half or full mask air-purifying respirator (APR):**
 - Fasten neck strap
 - Put chin in chin cup
 - Tighten straps gently
 - Cover inlet with palms to assure seal—inhale
 - Cover exhalation valve with palm to assure seal—exhale
 - Attach cartridges

- **Donning loose fitting powered air-purifying respirator (PAPR):**
 - Assemble unit and perform flow rate check
 - Don belt assembly with blower/filter unit and tighten around waist
 - Don helmet/face shield and tighten brow adjuster
 - Ensure chin skirt is fitted around perimeter of face and under chin
 - Ensure airflow is sufficient to maintain positive pressure inside helmet/face shield unit

Air purifying respirators are not to be worn entering areas known to be hazardous beyond the respirator's capability. An APR is not effective against carbon monoxide, low oxygen, or any contaminants not listed on the cartridge. If a respirator fails in a contaminated environment, leave to clean air immediately. Do not re-enter the environment and report the incident immediately. Signs of respiratory failure or distress include:

- Increased breathing resistance
- Shortness of breath, increased heart rate or other cardiopulmonary symptoms
- Smell or taste of contaminant is entering mask
- Burning eyes
- Disorientation, confusion, or other central nervous system symptoms

Employees must report any medical conditions, field conditions, or experiences that indicate a respirator is unsafe for use.

Training

Employees must be effectively trained prior to respirator use. The training must cover the following information:

- When and why a respirator is necessary (for mandatory use)
- Respiratory protection program review, including how to contact the Program Administrator
- Advisory information for voluntary use respirators
- The respirator's capabilities and limitations

- How improper fit, maintenance, or use can compromise respiratory protection
- How to inspect, put on, seal check, use, and remove the respirator
- How to clean, disinfect, repair, and store the respirator
- Cartridge change schedules
- Medical signs and symptoms that may limit the effective use of respirators
- How to use the respirator in emergency situations, including failure
- Additional information for those who supervise respirator users

Employees must demonstrate their understanding of the information covered in the training during fit testing. Respirator training documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

Voluntary Respirator Use

The City recognizes and accepts that there are situations, tasks, and environments where employees prefer to use respirators, but where hazards do not present an exposure significant enough to mandate such use. In such situations the City has approved voluntary use of respirators.

Filtering facepieces (dust masks) are provided for voluntary use to reduce nuisance dust, odors, allergens, and airborne pathogens. Voluntary use of a dust mask does not require any medical clearance or training. Voluntary users of all other types of respirators must have the medical clearance and training required by this policy.

Advisory Information for Employees Who Voluntarily Use Respirators
<p>Respirators protect against airborne hazards when properly selected and used. Respirator usage that is required by DOSH or your employer is not voluntary use. With required use, your employer will need to provide further training and meet additional requirements in this chapter. DOSH recommends voluntary use of respirators when exposure to substances is below DOSH permissible exposure limits (PELs) because respirators can provide an additional level of comfort and protection.</p> <p>If you choose to voluntarily use a respirator (whether it is provided by you or your employer) be aware that respirators can create hazards for you, the user. You can avoid these hazards if you know how to use your respirator properly AND how to keep it clean. Take these steps:</p> <ul style="list-style-type: none"> • Read and follow all instructions provided by the manufacturer about use, maintenance (cleaning and care), and warnings regarding the respirator's limitations. • Choose respirators that have been certified for use to protect against the substance of concern. The National Institute for Occupational Safety and Health (NIOSH) certifies respirators. If a respirator is not certified by NIOSH, you have no guarantee that it meets minimum design and performance standards for workplace use. • A NIOSH approval label will appear on or in the respirator packaging. It will tell you what protection the respirator provides. • Keep track of your respirator so you do not mistakenly use someone else's • DO NOT wear your respirator into: <ul style="list-style-type: none"> ○ Required use situations when you are only allowed voluntary use. ○ Atmospheres containing hazards that your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against solvent vapor, smoke, or oxygen deficiency.