



Safety and Health Department Respiratory Protection Program

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Clarksville-Montgomery County School System Safety and Health Department Respiratory Protection Program

I. General Policy and Purpose

This Respiratory Protection Program specifies standard operating procedures to protect all CMCSS employees and independent contractors from respiratory hazards, according to the requirements of 29 CFR 1910.134. Respirators are to be used only where engineering control of respirator hazards is not feasible, while engineering controls are being installed, or in emergencies.

The purpose of this program is to inform interested persons, including employees that Clarksville-Montgomery County School System is complying with the OSHA Respiratory Protection Standard, Title 29 Code of Federal Regulations 1910.134. This program applies to all work operations where employees or contractors may be exposed to hazards that require respiratory protection.

Furthermore, this program serves to demonstrate to employees and independent contractors the safety standards we follow. This program applies to all work operations where employees or contractors may be exposed to hazards that require respiratory protection.

II. Administration

The Respiratory Protection Program is administered by the CMCSS Safety and Health Department. The Safety and Health Department is responsible for all facets of the program and has full authority to make necessary decisions to ensure success of this program. This authority includes purchasing equipment necessary to implement and operate the program.

The Safety and Health Department will develop written detailed instructions covering each of the basic elements in this program, and is the solely authorized to amend these instructions. The members of this team are qualified, by appropriate training and experience that is commensurate with the complexity of the program, to administer or oversee our Respiratory Protection Program and conduct the required evaluations of program effectiveness.

III. Respirator Selection

Respirators are selected on the basis of respiratory hazards to which the worker is exposed and workplace user factors that affect respirator performance and reliability. All selections are made by the CMCSS Safety and Health Department. The CMCSS Safety and Health Department has developed detailed written standard operating procedures governing the selection of respirators using the following guidelines:

When selecting any respirator in general:

- ☐ Select and provide respirators based on respiratory hazard(s) to which a worker is exposed and workplace user factors that affect respirator performance and reliability. The product SDS will usually provide direction in respirator selection.
- ☐ Select a NIOSH-certified (National Institute for Occupational Safety and Health) respirator.
- ☐ Identify and evaluate the respiratory hazard(s) in the workplace, including a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Consider the atmosphere to be immediately dangerous to life or health (IDLH) if you cannot identify or reasonably estimate employee exposure.
- ☐ Select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

When selecting respirators for IDLH atmospheres:

Provide these respirators:

- ☐ A full face piece pressure demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes, or
- ☐ A combination full face piece pressure demand supplied-air respirator Self-contained breathing apparatus (SAR) with auxiliary self-contained air supply.
- ☐ Provide respirators NIOSH-certified for escape from the atmosphere in which they will be used when they are used only for escape from IDLH atmospheres. We consider all oxygen-deficient atmospheres to be IDLH.

When selecting respirators for atmospheres that are not IDLH:

We provide a respirator that is adequate to protect the health of the CMCSS employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.

For protection against gases and vapors, provide:

- ☐ An atmosphere-supplying respirator, or
- ☐ An air-purifying respirator, provided that:

(1) The respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or

(2) If there is no ESLI appropriate for conditions in our workplace, implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life.

Outside consultation, manufacturer's assistance, and other recognized authorities will be consulted if there is any doubt regarding proper selection.

IV. Respirator Types and Uses

The types of respirators in use vary depending on the task and the chemicals used. Only NIOSH-certified respirators are selected and used. Where practicable, the respirators will be assigned to individual workers for their exclusive use.

A **respirator** is a device designed to protect the wearer from breathing harmful vapors. There are two primary kinds of respirators - air-purifying respirators and atmosphere-supplying respirators.

Air-purifying respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element. They do not supply oxygen, so they should not be used in an oxygen deficient atmosphere. Three types are available: particulate-removing, gas- and vapor-removing, and combination particulate- and either gas-or vapor-removing.

Canister or cartridge means a container with a filter, sorbent, or catalyst, or any combination of these materials, which removes specific contaminants from air drawn through it.

Mechanical filter respirators can protect the wearer from both solid and liquid particles, including dusts, mists, fumes, smokes and aerosols. This can be a disposable type made with laminated filter (a dust mask), or a face piece with a filter holder. Mechanical filters do not protect wearers from gases or vapors.

Chemical cartridge (or canister) respirators are designed to protect the wearer from hazardous substances such as acid gases, organic vapors, ammonia, formaldehyde, and certain pesticides. Cartridges usually contain activated or chemically treated charcoal. (There are many organic chemicals for which there are no NIOSH approved chemical cartridges.) Cartridges are color coded to designate the atmospheric contaminants to be protected against (i.e. - acid gases - white; organic vapors - black); this is also written on the cartridge.

Combination respirator combines both mechanical and cartridge elements to protect against multiple contaminants.

Atmosphere-supplying respirator means a respirator that supplies the user with breathing air from an uncontaminated source, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA). They supply air that is independent of the air surrounding the wearer. Four types are available: supplied-air or airline; combination supplied-air and air-purifying; combination supplied-air with auxiliary self-contained air supply; and self-contained breathing apparatus.

Self-contained breathing apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user (traditionally in a tank carried on the user's back). This type protects against a wide variety of contaminants at almost any concentration.

Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is drawn from a separate, stationary system or an uncontaminated environment. These respirators are not acceptable in atmospheres that are immediately dangerous to life and health.

A **half face piece** respirator covers the wearer's nose and mouth; a **full face piece** respirator covers the wearer's nose, mouth and eyes. These types of respirators traditionally come in three sizes: small, medium, and large.

V. Mandatory Medical Evaluations

A medical evaluation to determine whether an employee is able to use a given respirator is an important element of the CMCSS Respiratory Protection Program and is necessary to prevent injuries, illnesses, and even, in rare cases death.

At Clarksville-Montgomery County School System (CMCSS), persons will not be assigned to tasks requiring use of respirators nor fit tested unless it has been determined by a “Physician or Other Licensed Health Care Professional” that they are physically able to perform the work and use the respirator.

PHYSICIAN OR OTHER LICENSED HEALTH CARE PROFESSIONAL (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by 29 CFR 1910.134(e), Medical Evaluation. Before any initial examination or questionnaire is given, we supply the PLHCP with the following information so that he/she can make the best recommendation concerning an employee's ability to use a respirator:

- ☐ Type and weight of the respirator to be used by the employee;
- ☐ Duration and frequency of respirator use (including use for rescue and escape);

- ☐ Expected physical work effort;

Additional protective clothing and equipment to be worn;

- ☐ Temperature and humidity extremes that may be encountered.
- ☐ OSHA's Mandatory Medical Evaluation Questionnaire (see "Request for Medical Clearance – Respirator Use Questionnaire" in the following section of this chapter)

Once the PLHCP determines whether the employee has the ability to use or not use a respirator, he/she sends CMCSS Safety and Health Department a written recommendation containing only the following information:

- ☐ Limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;
- ☐ The need, if any, for follow-up medical evaluations; and
- ☐ A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

Follow-up medical examination:

A follow-up medical examination will be provided if an employee's initial medical examination demonstrates the need for a follow-up medical examination. Our follow-up medical examination includes tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

Additional medical examinations:

CMCSS provides additional medical evaluations if:

- ☐ An employee reports medical signs or symptoms that are related to ability to use a respirator;
- ☐ A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated;
- ☐ Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or
- ☐ A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

VI. Qualitative / Quantitative Fit Testing

Once a medical evaluation is received from a PLHCP which gives clearance to the employee to use a respirator, the employee must next be fit tested. A respirator must fit properly to provide protection. If a tight seal is not maintained between the face piece and the employee's face, contaminated air will be drawn into the face piece and be breathed by the employee. Fit testing seeks to protect the employee against breathing contaminated ambient air and is one of the core provisions of the CMCSS respirator program.

In general, fit testing may be either qualitative or quantitative. Qualitative fit testing (QLFT) involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of the respirator user. If that user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate.

In a Quantitative respirator fit test (QNFT), the adequacy of respirator fit is assessed by measuring the amount of leakage into the respirator, either by generating a test aerosol as a test atmosphere, using ambient aerosol as a test agent, or using controlled negative pressure to measure the volumetric leak rate. Appropriate instrumentation is required to quantify respirator fit in QNFT. Unless specified otherwise on the Safety Data Sheet.

A. Fit Testing Procedures

When fit testing is administered, the following procedures will be followed:

- 1) Prior to the selection process, the employee shall be shown how to put on 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 employee in evaluating the fit and positioning of the respirator.
- 2) The employee will pick the respirator that correctly fits from the selection at hand.
- 3) 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.
- 4) The employee shall be instructed to hold each chosen face piece up to the face and eliminate those that do not give an acceptable fit.
- 5) The more acceptable face pieces are noted in case the one selected proves unacceptable. The most comfortable mask is donned and worn for at least 5 minutes to assess comfort. If the employee is not familiar with a particular respirator, the employee shall be directed to don the mask several times and to make adjustments to the straps each time to become acquainted with setting the proper tension of the straps.

To assess the comfort of the mask follow the steps shown below:

- ☐ Position the mask on the nose.

- ☐ Make sure there is room for eye protection.
- ☐ Make sure you have room to talk.
- ☐ Position the mask on the face and cheeks.

The following will assist in determination of the respirator fit:

- ☐ Chin properly placed
 - ☐ Adequate strap tension not overly tightened.
 - ☐ Fit across Nose Bridge.
 - ☐ A respirator of proper size will span the distance from nose to chin.
 - ☐ There should not be a feeling that the respirator is slipping.
 - ☐ Self-observation in a mirror will assist in positioning and fit.
- 6) The employee will perform a user seal check. A negative and positive pressure check is the method used at Clarksville Montgomery County School System (CMCSS). Before conducting the test the employee shall seat the mask on the face by moving the head from side to side and up and down slowly while taking a few slow deep breaths. Another face piece will be selected if the employee fails the user seal check.
 - 7) The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surfaces, such as stubble, beard growth, mustache, beard, or sideburns which cross the respirator sealing surface. Any type of apparel, which interferes with a satisfactory fit, shall be removed or altered.
 - 8) If the employee exhibits difficulty in breathing during the test, she or he will be referred to a physician or other licensed health care professional to determine whether the employee can wear a respirator while performing his or her duties.
 - 9) If the employee finds the fit of the respirator unacceptable, the employee may select a different respirator and be re-tested.
 - 10) Exercise regimen. A description of the fit test and the responsibilities the employee must adhere to during the test. The description shall include the exercises and an explanation of how to perform them. The respirator to be used in the test will be worn 5 minutes before the start of the fit test.
 - 11) Other Personal Protective Equipment the employee will wear as normal part of the work process must be worn during the test.

B. Test exercises

The employee shall perform the following exercises in the order given below, in the environment the respirator will be worn:

Normal breathing. In a normal standing position, without talking the employee shall breathe normally.

Deep breathing. In a normal standing position, the employee shall breathe slowly and deeply, taking caution so as not to hyperventilate.

Turning head side to side. Standing in place, the employee 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 employee can inhale at each side.

Moving head up and down. Standing in place, the employee shall slowly move his/her head up and down. The employee shall be instructed to inhale at the up position (i.e. when looking toward the ceiling).

Grimace. The employee shall grimace by smiling or frowning. (This applies only to QNFT testing, it is not performed for QLFT.)

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.

Talking. The employee shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The employee can read from prepared text such as the Rainbow Passage (see 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 his reach, his friends say he is looking for the pot of gold at the end of the rainbow.*

Normal Breathing. Same as at the beginning.

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 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.

C. Respirator Fit Test Record

At the conclusion of a successful fit test, the person conducting the fit test shall complete the “Respirator Fit Test Record” (see next section). The fit tester and the employee tested shall sign and date the document. The person conducting the fit testing shall next forward this document to the Safety and Health Department. The Safety and Health Department will review the document and sign it. The completed record shall be kept in the employees personnel file for the duration of the employees’ employment with Clarksville Montgomery County School System (CMCSS).

Respirator Fit Test Record

Employee: (print name) _____

DOB: _____

Department: _____

Job Title: _____

Type of Respirator Used: _____

Manufacturer: _____ Model Number: _____

Conditions that could affect respirator fit:

- ☐ Clean Shaven
- ☐ 1-2 Day Beard Growth
- ☐ 2 + Days Beard Growth
- ☐ Glasses
- ☐ Moustache
- ☐ None of the Above

Fit Checks:

Negative Pressure (circle one): Pass Fail N/A

Positive Pressure (circle one): Pass Fail N/A

Qualitative Fit Test:

Bitrex™ Solution Aerosol (circle one): Pass Fail N/A

Saccharin Solution (circle one): Pass Fail N/A

Acknowledgement:

Employee Signature: _____ Date: _____
Test Conducted By: _____ Date: _____
Review by Safety and Health Department: _____ Date: _____

D. Fit Testing Schedule

The fit testing schedule is as follows:

- ☐ Before any of our employees are required to use any respirator with a negative or positive pressure tight-fitting face piece;
- ☐ Whenever a different respirator face piece (size, style, model, or make) is used;
- ☐ At least annually;
- ☐ Whenever a supervisor makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight; and
- ☐ When the employee, subsequently after passing a QLFT or QNFT, notifies the company, supervisor or PLHCP that the fit of the respirator is unacceptable, that employee will be retested with a different respirator face piece.

E. Face piece Seal Protection

Do not permit respirators with tight-fitting face pieces to be worn by employees who have:

- ☐ Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function; or
- ☐ Any condition that interferes with the face-to-face piece seal or valve function.
- ☐ If an employee wears corrective glasses or goggles or other personal protective equipment, ensure that such equipment is worn in a manner that does not interfere with the seal of the face piece to the face of the user.

For all tight-fitting respirators, ensure that employees perform a user seal check each time they put on the respirator.

VII. Continuing Respirator Effectiveness

Appropriate surveillance must be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, reevaluate the continued

effectiveness of the respirator.

Ensure that employees leave the respirator use area:

- ☐ To wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use; or
- ☐ If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece; or
- ☐ To replace the respirator or the filter, cartridge, or canister elements. If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece, replace or repair the respirator before allowing the employee to return to the work area.

Maintenance and Care Procedures

In order to ensure continuing protection from respiratory protective devices, it is necessary to establish and implement proper maintenance and care procedures and schedules. A lax attitude toward maintenance and care will negate successful selection and fit because the devices will not deliver the assumed protection unless they are kept in good working order.

Cleaning & Disinfecting

CMCSS provides each respirator user with a respirator that is clean, sanitary, and in good working order. We ensure that respirators are cleaned and disinfected using the following schedule:

- ☐ Respirator issued for the exclusive use of an employee must be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.
- ☐ Respirators issued to more than one employee must be cleaned and disinfected before being worn by different individuals.
- ☐ Respirators maintained for emergency use must be cleaned and disinfected after each use.
- ☐ Respirators used in fit testing and training must be cleaned and disinfected after each use.

Storage

Storage of respirators must be done properly to ensure that the equipment is protected and not subject to environmental conditions that may cause deterioration. We ensure that respirators are stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. In addition, emergency respirators are kept accessible to the work area and are clearly marked as containing emergency respirators; and stored in accordance with any applicable manufacturer instructions.

Inspection

In order to assure the continued reliability of respirator equipment, it must be inspected on a regular basis. The frequency of inspection is related to the frequency of use. Here are our frequencies for inspection:

1. All types used in routine situations

- ☐ Before each use and during cleaning

2. Maintained for use in emergency situations

- ☐ At least monthly and in accordance with the manufacturer's recommendations, and checked for proper function before and after each use

1. Emergency escape-only respirators

- ☐ Before being carried into the workplace for use

Any one of our respirator inspections includes a check:

1. For respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
2. of elastomeric parts for pliability and signs of deterioration.

Repairs

Respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired.

Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and only with the respirator manufacturer's NIOSH-approved parts designed for the respirator. Repairs must be made according to the manufacturer's recommendations.

VIII. Discarding of Respirators

Respirators that fail an inspection or are otherwise not fit for use and cannot be repaired must be discarded. The respirator is marked as “unsafe” and the elastomeric headband is removed. Additionally a red tag should be attached to the respirator that reads “Unsafe for use – discard”.

Emergency Contact Information

In the event of an emergency, the contact telephone numbers for the Safety and Health Department is as follows:

Safety and Health Director Office: (931)920-7836 Cell: (931) 216-1971

Safety and Health Specialist Office: (931) 920-7806 Cell: (931) 257-0042

District Registered Nurse/Nursing Supervisor Office: (931) 920-7976

Safety and Health Associate Office: (931) 920-7917

Coordinated School Health Supervisor Office: (931) 920-7827