

Terminology Defined by the Respiratory Protection Standards

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Abstract

Physician or other licensed healthcare professional 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 healthcare services required. Positive pressure respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator. Powered air-purifying respirator means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering. Pressure demand respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when the positive pressure is reduced inside the face piece by inhalation.

Keywords: Healthcare professional; Quantitative fit; Breathing apparatus; Airline respirator; Workplace conditions

Introduction

Qualitative fit test means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent. Quantitative fit test means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator. Respiratory inlet covering means that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both [1]. It may be a face piece, helmet, hood, suit, or a mouthpiece respirator with nose clamp. Self-contained breathing apparatus means an atmosphere-supplying respirator for which then breathing air source is designed to be carried by the user. Service life means the period of time that a respirator, filter or absorbent, or other respiratory equipment provides adequate protection to the wearer. Supplied-air respirator or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user [2]. This section means this Respiratory Protection standard. Tight-fitting face piece means a respiratory inlet covering that forms a complete seal with the face. User seal check means an action conducted by the respirator user to determine if the respirator is properly seated to the face. Respiratory protection requires the employer to develop and implement a written respiratory protection program with required worksite-specific procedures and elements for required respirator use. The program must be administered by a suitably trained program administrator. In addition, certain program elements may be required for voluntary use to prevent potential hazards associated with the use of the respirator [3]. In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, the employer shall establish and implement a written respiratory protection program with worksite-specific procedures [4].

Methodology

The program shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use. An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard. If the employer determines that any voluntary respirator use is permissible, the employer shall provide the respirator users with the information contained [5]. In addition, the employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee

using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user [6].

Discussion

Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering face pieces. The employer shall designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness [7]. The employer shall select and provide an appropriate respirator based on the respiratory hazards to which the worker is exposed and workplace and user factors that affect respirator performance and reliability. The employer shall identify and evaluate the respiratory hazards in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazards and an identification of the contaminant's chemical state and physical form. Where the employer cannot identify or reasonably estimate the employee exposure, the employer shall consider the atmosphere to be Immediately Dangerous to Life or Health. The employer shall provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other Occupational Safety and Health Administration statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations. When using a combination respirator e.g. airline respirators with an air-purifying filter, employers must ensure that the assigned protection factor is appropriate to the mode of operation in which the respirator is being used [8]. Using a respirator may place a physiological burden on employees that varies with the type of respirator

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worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, this paragraph specifies the minimum requirements for medical evaluation that employers must implement to determine the employee's ability to use a respirator. The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee [9]. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content. When the employer replaces a Physician or other licensed healthcare professional, the employer must ensure that the new Physician or other licensed healthcare professional obtains this information, either by providing the documents directly to the Physician or other licensed healthcare professional or having the documents transferred from the former Physician or other licensed healthcare professional to the new Physician or other licensed healthcare professional. However, Occupational Safety and Health Administration doesn't expect employers to have employees medically re-evaluated solely because a new Physician or other licensed healthcare professional has been selected. If the respirator is a negative pressure respirator and the Physician or other licensed healthcare professional finds a medical condition that may place the employee's health at increased risk if the respirator is used, the employer shall provide a Powered air-purifying respirator if the Physician or other licensed healthcare professional's medical evaluation finds that the employee can use such a respirator, if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the employer is no longer required to provide a Powered air-purifying respirator [10]. Fit testing requires that, before an employee may be required to use any respirator with a negative or positive pressure tight-fitting face piece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used. Kinds of fit tests allowed, the procedures for conducting them, and how the results of the fit tests must be used. The employer shall ensure that employees using a tight-fitting face piece respirator pass an appropriate qualitative fit test or quantitative fit test as stated in this paragraph. The employer shall ensure that an employee using a tight-fitting face piece respirator is fit tested prior to initial use of the respirator, whenever a different respirator face piece is used, and at least annually thereafter [11]. The employer shall conduct an additional fit test whenever the employee reports, or the employer, Physician or other licensed healthcare professional, supervisor, or program administrator 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 [12]. If after passing a qualitative fit test or quantitative fit test, the employee subsequently notifies the employer, program administrator, supervisor, or Physician or other licensed healthcare professional that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator face piece and to be retested. Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation that is used for respiratory protection [13]. Qualitative fit testing of these respirators shall be accomplished by temporarily converting the respirator user's actual face piece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator face piece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator face piece. Quantitative fit testing of these respirators shall be accomplished by modifying the face piece to allow sampling inside the face piece in the breathing zone

of the user, midway between the nose and mouth [14]. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate face-piece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the face piece. Any modifications to the respirator face piece for fit testing shall be completely removed, and the face piece restored to National Institute for Occupational Safety and Health-approved configuration, before that face piece can be used in the workplace.

Conclusion

Use of respirators requires employers to establish and implement procedures for the proper use of respirators. These requirements include prohibiting conditions that may result in face piece seal leakage, preventing employees from removing respirators in hazardous environments, taking actions to ensure continued effective respirator operation throughout the work shift, and establishing procedures for the use of respirators in Immediately dangerous to life or health atmospheres or in interior structural fire fighting situations.

Acknowledgement

None

Conflict of Interest

None

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