



RESPIRATORY PROTECTION

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When is a respiratory protection program required?

- OSHA Requires employers to develop and implement a written respiratory protection program for the following situations:
 - permissible exposure limits (PELs) of airborne contaminants are exceeded
 - AND the hierarchy of controls has failed (elimination, substitution, engineering controls, administrative controls)
 - OR when the employer requires the use of respirators by employees

Key Components

1. Program must be written and maintained
2. Outline selection process of respirators
3. Medical evaluations
4. Fit testing
5. Specifies the parameters of use
6. Maintenance and care
7. Breathing air quality
8. Identification of filters, cartridges , and canisters
9. Training and information
10. Program evaluation
11. Record keeping

1. Written Program

- 29 CFR 1910.134
- Employers must formulate a document outlining the organizations respiratory protection program
- Document must contain the following items:
 - Respirator selection process
 - Medical evaluations
 - Fit testing
 - Procedures for use, cleaning, disinfecting, storing, inspecting, repairing and discarding
 - Procedures to ensure adequate air quality, quantity and flow
 - Training in respiratory hazards
 - Training in abilities and limitations
 - Procedures for evaluating the program's effectiveness

Special considerations to the written program

- Voluntary use vs mandatory use
- What are the hazards?
 - Air sampling
- How will we communicate hazards to employees?
- Who will do the training?
- Who will be in the program
 - Sweeping area policy vs individual identification

2. Selection of respirators

- An employer must evaluate respiratory hazards in the workplace
- Evaluation must identify contaminants in their chemical state and physical form
- If an employer is unable to identify or reasonably estimate employee exposure, the employer should consider the atmosphere to be immediately dangerous to life and health (IDLH)
- Once hazards are identified, employer must select respirators based on the identified hazards

Respirator selection

- Respirators must be NIOSH certified
- IDLH Concentrations
 - Requires either
 - Self contained breathing apparatus (SCBA)
 - supplied air respirator (SAR)
- Non-IDLH
 - Particulates
 - Must select respirator that meets or exceeds the required level of employee protection
 - Assigned protection factors (APF)
- Gases and vapors
 - Must select air purifying respirator rated for hazard (organic vapor cartridge)

IDLH Respiratory Protection

- SCBA



- SAR



Particulate Respiratory Protection

Reusable Half Facepiece



Disposable Filtering Facepiece



3. Medical Evaluations

- An employer must provide a medical evaluation to determine an employee's medical eligibility for respirator use
- Must occur before employee is fit tested or required to use a respirator
- Exam must be confidential and convenient during work hours
- PLHCP will note limitations the employee might have
- PLHCP will certify whether the employee is able to wear a respirator
- Additional exams might be necessary if:
 - Employee reports symptoms
 - The PLHCP recommends a re-evaluation
 - Observations or evaluations indicate necessity
 - Change in the workplace affects the physical burden placed on the wearer

4. Fit Testing

- Employees that are required to wear a respirator must be fit tested
- Fit testing can be quantitative or qualitative
 - Qualitative may only be used when fit factor must be equal to or less than 100 for APRs
 - Quantitative must be used when fit factor must be:
 - Equal to or greater than 100 for half face masks OR
 - Equal to or greater than 500 for full face masks
- Fit test must occur on the exact make, model and size of the respirator to be used
- Fit testing must be performed annually OR whenever there is a change in employee's physical condition (weight, facial shape) or when there is a change in the type of respirator used

5. Use of respirators

- Employer's must establish rules and procedures for respirator use
 - Employees cannot remove the mask in a hazardous environment
 - Employee must prevent conditions that could result in facepiece seal leaks
 - Employee must have compliant facial hair
 - Employers must ensure that other PPE does not interfere with the seal (glasses, goggles, etc)
 - Employees should leave the respirator work area if they detect vapor or gas breakthrough, leakage of the facepiece or changes in breathing resistance
- The rules must also ensure continued effective respirator use throughout work shifts

6. Maintenance and Care

- Employer must provide for the cleaning and disinfecting, storage, inspection and repair of respirators
- Cleaning must be done for exclusive use respirators as needed
- Multiple use respirators must be cleaned before other uses
- Stored respirators should be protected from damage and in such a manner that does not shorten the life of the filter

7. Breathing Air Quality

- An employer must provide employees who use SARs or SCBAs with high purity breathing gases, such as compressed air, compressed oxygen, or liquid oxygen.
- Compressed air must meet at least the Type 1, Grade D breathing Air requirements described in the ANSI Commodity Specifications for Air (CGA G-7.1)

8. Identification of filters, cartridges and canisters

- Same concept as filter facepiece selection
- All filters used in the workplace must be NIOSH approved
- Label must be present on filters at all times and must not be removed

9. Training and Information

- Employers must provide effective, comprehensive training
- Training reviewed annually, at minimum
- Following training, employees should be able to demonstrate:
 - Why the respirator is necessary
 - The hazards present which require respirator use
 - Consequences for improper fit, usage or maintenance
 - Limitations and capabilities of the respirator
 - How to use it in emergency situations
 - What to do if the respirator fails
 - How to inspect, maintain and store the respirator
 - Medical signs and symptoms that would prevent or limit the effectiveness of the respirator
- Retraining is required whenever there is a change in the working conditions, new style of respirator is issued, or if employee knowledge or use indicates a need

10. Program Evaluation

- Employers are required to conduct evaluations of the workplace, ensuring that the written program is properly implemented and continues to be effective
- Employers should regularly engage employees regarding respirator fit, selection and maintenance
- Employers should conduct program evaluations as necessary (annually)

11. Record Keeping

- Employer is required to retain written information regarding medical evaluations and fit testing
- Ensures compliance determinations required by OSHA
- Records of medical evaluations must be retained and made readily available (29 CFR 1910.1020)
- Records must be maintained for length of employment + 30 years



COMMON CHALLENGES

Voluntary use vs Mandatory use

- Determine PELs for hazard in question
- Obtain air sampling
- If air sampling results exceed PELs, then mandatory respirator use is required
- If air sampling results are below the PEL threshold, mandatory respirator use is not required
- If an employee asks for a respirator, determine why the respirator is needed, don't just issue

Defining Voluntary Respirators

- If one or more of the following conditions are unmet, respirator use is not voluntary
 - An exposure assessment has been conducted
 - PEL is not exceeded
 - No OSHA regulations require respirators be provided by the employer (lead)
 - There is no perceived hazard
 - The employer does not require, recommend, encourage or suggest that respirators be used
 - Employee asks to wear a respirator
 - Respirator will not be used for emergency response or escape
- Limited resp. prot. program is required for voluntary use
 - Limited medical evaluation (asthma, COPD)
 - Cleaning, storage and maintenance
 - Appendix D issued
 - Appendix C with EE signature obtained and retained by employer

Employee compliance

- Employees failing to meet the requirement for mandatory use from a medical perspective are not considered fit for duty
 - Medical issues may have an ADA consideration
- Employee refusal is a performance issue
- Employees refusing to shave should be referred to HR or their Manager
- Employees who break regulation, such as removing the facepiece in a hazardous environment, should be disciplined
- No medical exceptions without the ADA process

Respirator Selection Considerations

- Best practice
 - Employers should offer a selection of respirators which meet the requirements for use
 - Allow employees to pick from multiple options

Who is responsible for the respirator?

- Company policy may dictate responsibility to employee
- Ultimate responsibility rests with employer

Most common OSHA Citations regarding Resp. Prot.

- Failure to establish the written respiratory protection program
- Not providing a medical evaluation before the worker was fit tested or used the respirator
- Not providing the necessary training
- Seal compliance (Facial Hair)

Respirators in the age of COVID

- OSHA temporarily exercised some enforcement discretion towards respirators in light of the pandemic
 - Largely driven by supply shortages
 - Extended use and reuse of respirators beyond the recommended shelf life
 - Use of alternative respirators certified under standards of certain other countries
- NIOSH recommended halting spirometry testing to limit the spread of COVID-19
- Supply shortages
 - Identify alternative respirator types
 - Update air sampling to eliminate usage where possible



QUESTIONS?

For any questions regarding Respiratory Protection in the workplace, you can contact Author, Robert Beck (Work Comp Management Services), at 765.838.9908