

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Washington, DC 20314

ER 385-1-90

DAEN-ECS

Regulation
No. 385-1-90

28 March 1983

Safety
RESPIRATORY PROTECTION PROGRAM

Issue of supplements to this regulation by Commanders, Field Operating Activities (FOA), is permitted but is not required. If supplements are issued, DIVCDR and CDR, separate FOA, will furnish one copy of each to (DAEN-ECS) and (DAEN-ASP-R) WASH, DC 20314; DISTCDR will furnish required copies to appropriate DIVCDR.

1. Purpose. To establish a respiratory protection program for the Corps of Engineers in order to reduce occupational respiratory disease and related respiratory problems among USACE personnel.

2. Applicability. This regulation applies to all HQUSACE/OCE elements and all field operating activities (FOA), both military and civilian. (For contractor requirements, see EM 385-1-1.)

3. References.

a. Code of Federal Regulations, 29 CFR 1910.134, Occupational Safety and Health Standards, Respiratory Protection, with amendment.

b. American National Standard, ANSI Z88.2-1980, Practices for Respiratory Protection, 22 May 1980.

c. TB MED 502, Occupational and Environmental Health, Respiratory Protection Program.

d. National Institute for Occupational Safety and Health, DHEW (NIOSH) Publication No. 76-189, A Guide to Industrial Respiratory Protection, April 1979.

e. National Institute for Occupational Safety and Health, NIOSH Publication No. 78-193A, Respiratory Protection - An Employer's Manual, October 1978.

f. National Institute for Occupational Safety and Health, NIOSH Publication No. 78-193B, Respiratory Protection - A Guide for the Employee, October 1978.

g. AR 385-10, The Army Safety Program, 1 February 1979, with USACE Supplement 1.

h. EP 385-1-58, Medical Surveillance Handbook.

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4. Definition. For the purpose of this regulation the following terms shall mean:

a. Contaminant. Any harmful, irritating, or nuisance material that is foreign to the normal atmosphere. Contaminants can be particulates, gases, or vapors.

(1) Particulates.

(a) Dusts - A submicroscopic to visible solid which is mechanically produced by such processes as grinding, crushing, drilling or blasting.

(b) Fibers - A fiber is a special class of dust which has a length at least three times its diameter.

(c) Fumes - A solid, normally less than one micrometer in diameter, usually formed in air above molten metal by vaporization of the metal, oxidation of the vapor, and condensation of the oxide.

(d) Mists - Submicroscopic to visible droplets rendered airborne by bubbling, boiling, spraying, splashing or by condensation from air supersaturated with the vapor of a substance.

(2) Gases. A substance in the gaseous state at normal workroom temperatures.

(3) Vapors. The gaseous state of a substance in the liquid or solid state at normal workroom temperatures.

b. Immediate Danger to Life or Health (IDLH). Any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health.

c. Oxygen Deficient. Any atmosphere that contains less than 19.5% oxygen by volume. An oxygen deficiency becomes IDLH when the ambient partial pressure of oxygen becomes less than 110 mm Hg.

d. Protection Factor. A measure of the overall effectiveness of a respirator (see Appendix A for assigned protection factors).

e. TLV and PEL. Threshold Limit Values (TLV) and Permissible Exposure Limits (PEL) are contaminant exposure levels not to be exceeded. PEL(s) are listed in 29 CFR 1910 and the TLV(s) are published yearly by the American Conference of Governmental Industrial Hygienist. Consult your Safety and Occupational Health Office for interpretation of these standards.

f. Warning Properties. This refers to the human senses of taste, smell, and eye or throat irritation. A substance has adequate warning properties if the substance's odor, taste, or irritant effects are detectable and persistent at concentrations at or below the Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV).

5. Essential Elements of a Respiratory Protection Program.

- a. Written SOP which establishes procedures and assigns responsibilities.
- b. Engineering control measures to reduce the contaminant level.
- c. Respirator Selection Criteria.
- d. Medical Surveillance.
- e. Respirator Fit Testing.
- f. Work Area Surveillance.
- g. Respirator Inspection and Maintenance.
- h. Employee Training.

6. Responsibilities.

a. HOUSACE/OCE. The Chief, Safety and Occupational Health Division is responsible for staff planning, development, supervision and review of the respiratory protection program, and shall:

(1) Provide for staff coordination, policy guidance, and administrative and technical review of the program.

(2) Maintain liaison with Army Staff and other government agencies to insure that the USACE Respiratory Protection Program meets legal administrative procedures and adequately protects workers.

(3) Develop supervisor and employee respiratory protection training program and assist FOA in preparing appropriate training.

b. FOA.

(1) Commanders/Directors. Each FOA Commander/Director is responsible for implementing the FOA's respiratory protection program and providing adequate resources for program administration.

(2) Safety and Occupational Health Office. The FOA Safety and Occupational Health Office will develop and manage the FOA respiratory protection program and will assure that:

(a) A written SOP or regulation is developed which establishes procedures and assigns responsibilities for all aspects of the respiratory protection program. Selection of respirator type, assignment of risk assessment codes, and annual program evaluations will be the responsibility of the FOA Occupational Safety and Health Office.

(b) Work areas are surveyed.

(c) Supervisors have been provided training qualifying them to perform fit tests and provide worker training.

(3) Supervisor. All supervisors will:

(a) Through job hazard analysis, review job duties and notify the Personnel and Safety Offices of positions which require employees to use respiratory protection (to include the use of respirators for emergencies and fire fighting). (See EP 385-1-58.)

(b) Request Safety Office assistance in determining when respiratory protection is required and the type required, and in providing work area surveillance and training materials for employees.

(c) Develop a written SOP for care and use of respirators.

(d) Fit test and train employees on the hazards of their work and on proper use of respiratory protection.

(e) Make the use of safety equipment a provision in the employee's job performance standards.

(f) Notify management of operations/areas requiring engineering controls.

(4) Employee. All employees who work at operations which require the use of respiratory protection will:

(a) Wear a respirator when required, and properly maintain it.

(b) Immediately leave the contaminated area if the respirator malfunctions.

(c) Notify their supervisors when they suspect a respiratory hazard or have a respiratory problem.

(d) Take appropriate medical exams.

7. Permissible Use of Respirators.

a. Respirators shall only be used in lieu of engineering/administrative control measures:

(1) When engineering controls, process changes or chemical substitution (capable of reducing exposures to less than one half the TLV or PEL) are not feasible;

(2) During the interim until control measures in (1) above can be implemented; or

(3) During emergencies.

b. Only NIOSH/MSHA approved respiratory protective equipment shall be used.

c. If respiratory protective equipment is to be used in IDLH atmospheres or for entry into confined spaces, safe use procedures must be developed prior to its use.

8. Risk Assessment Codes. A risk assessment code and cost effective index will be calculated and assigned to all nonemergency respiratory hazards. In addition, the feasibility of implementing engineering control measures will be determined, taking into account the technology available, future use of the facility, and risk assessment code and cost effectiveness index assigned (see reference h).

9. Inclusion Criterion. All employees who are required to use respiratory protection in performing their duties (to include intermittent or emergency use) will be included in the respiratory protection program. They will be provided proper respirators, appropriate medical exams, fit tests, and training. Personnel who require corrective lenses and use full facepiece respirators will be provided corrective lense inserts for their respirators.

10. Respirator Selection. Respirators will be selected in accordance with Appendix A. Routine and intermittent use respirators shall be assigned to individuals for their exclusive use, when possible.

11. Work Area Surveillance. All areas and operations, where a respiratory hazard is present or suspected, will be surveyed to determine the nature and extent of the hazard. Initial surveys will be conducted to determine if respiratory protection is required and the type required. Periodic surveys will be conducted, during routine industrial hygiene surveys to ensure that proper respiratory equipment and procedures are being used.

12. Medical Surveillance. Employees required to use respiratory protection will be given preplacement and annual medical exams. Medical exam shall include, at minimum, a medical history, pulmonary function test and, if appropriate, medical tests for specific contaminant for which the respirator is being used. EP 385-1-58, gives medical testing requirements for specific exposures and outlines basic procedures which may be used for scheduling medical exams.

13. Program Evaluations. Each FOA will evaluate their respiratory protection annually. General guidance for program evaluations is listed in Appendix B.

14. Respirator Inspection and Maintenance.

a. Routine and Intermittent Use Respirators shall be inspected prior to use. Each respirator shall be cleaned and sanitized after each day's use.

b. Respirators For Emergency Use shall be inspected at least monthly and after each use. Emergency respirators shall be cleaned and sanitized after each use. A record of inspections will be kept with the equipment for one year.

15. Fit Testing. Each employee required to use a negative pressure respirator will be fitted test to insure a proper fit using an appropriate qualitative or quantitative fit test procedures listed in Appendix C. Positive pressure respirators do not require fit testing.

16. Training.

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a. Supervisor. Supervisors, who have operations requiring the use of respiratory protection, will be trained in respirator selection, proper use, fit test procedures and inspection procedures.

b. Employee. Each employee in the respiratory protection program will be instructed in the proper use of respirators, negative and positive fit tests, the purposes of medical examinations, prohibited practices (facial hair, contact lenses, etc) and inspection procedures. Employees will be given refresher training at least annually.

17. Breathing Air.

a. Breathing air for industrial use must meet the air quality requirements of Compressed Gas Associations Specification G7.1, 1966, Grade D Breathing Air. Quality of air from compressors must be tested at least semiannually and records of results kept for five years (see Appendix D, para D-1, for air quality parameters). Requirements for underwater breathing air can be found in ER 385-1-86, Underwater Diving.

b. Compressors must meet the safety requirements of 29 CFR 1910.134(d) and 29 CFR 1910.92 (a)(6) (see Appendix D, para D-3, for general requirements).

FOR THE COMMANDER:



FOR JAMES W. RAY
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4 Appendices
APP A - Respirator Selection
APP B - Program Evaluation Guidance
APP C - Fit Testing Procedures
APP D - Compressed Breathing Air