

examinetics

Occupational Health Pathfinder

Respiratory protection

Pathfinder: number 010

Issue date: 10/14/2008

Overview

Respirators are designed to provide the wearer with protection from the inhalation of harmful atmospheres containing dusts, particulate matter, gases, sprays or volatile chemicals. Respirators are also worn by those who are exposed to extremes of temperature. It is estimated that up to 5 million workers in the USA wear respirators to carry out their duties.

Types of respirators

There are two main types of respirator: air-purifying and air-supplying. The air-purifying type removes contaminants from the atmosphere through particulate filters, cartridges or canisters connected to the face piece. Cartridges or canisters contain materials designed specifically to remove gases or vapors and are sometimes used in combination to remove more than one type of contaminant. The air-supplying respirator provides the wearer with air-supply separate to the contaminated air. Self-contained breathing apparatus (SCBA) requires the worker to carry their air-supply while air-line hose respirators connect to an air source some distance away. The two respirator types can be further subdivided into categories according to their mode of operation and type of inlet covering. Respirator selection is critically important for effective protection against hazardous atmospheres and it is recommended that employers seek professional advice from an industrial hygienist or other expert provider. Respirators must be certified by the National Institute for Occupational Safety and Health.

Regulatory issues and importance of respirator fit testing

Regardless of the type of respirator, there are strict regulations for employers and employees pertaining to their use, fit and maintenance. OSHA recommends that respirators should be worn when other forms of engineering control or protection for the worker have been ruled out (eg adequate ventilation systems). Employers should read the Respiratory Protection Standard 29 CFR 1910.134 and appropriate subsections in relation to the standards for Shipyard Employment (29 CFR 1915), Marine Terminals (29 CFR 1917), Longshoring (29 CFR 1918) and Construction (29 CFR 1926). Employers must comply fully with the OSHA standards. Example features include:

- Provide a medical examination to determine employee's ability to use a respirator (before fit testing or use)
- Provide qualitative fit test (QLFT) or quantitative fit test (QNFT) for those requiring negative or positive pressure tight-fitting facepiece respirators (see NIOSH link above for more details)
- Ensure correct usage of selected respirator
- Regularly maintain respirators and ensure adequate care
- Provide training and educational programs for users
- Undertake evaluations and ensure accurate recordkeeping

KEY POINT SUMMARY:

- As many as 5 million workers in the USA wear respirators to carry out their duties
- Respirators protect workers from hazardous atmospheres containing dust, gases or sprays
- There are two types of respirator: air-purifying (filters ambient air) and air-supply (provides the worker with separate air supply)
- Respirator selection is critically important for effective protection against hazardous atmospheres and it is recommended that employers always seek professional advice
- OSHA recommends that respirators should be worn when other forms of engineering control or protection for the worker has been ruled out
- Employers should read fully the Respiratory Protection Standard 29 CFR 1910.134 and appropriate subsections in relation to the standards for Shipyard Employment, Marine Terminals, Longshoring and Construction where appropriate

FIND OUT MORE...

OSHA website

www.osha.gov/SLTC/respiratoryprotection/index.html

National Institute for Occupational Safety and Health

www.cdc.gov/niosh/nppt/topics/respirators/

Business Owner Briefing Dept of Industrial Relations

"Respiratory protection in the workplace: a practical guide for small-business employers"

www.dir.ca.gov/dosh/dosh_publications/respiratory.pdf

Medical Director Review

"Fit for purpose? The role of fit testing in respiratory protection"
(Clayton & Vaughan, 2005)

<http://annhyg.oxfordjournals.org/cgi/rapidprint/49/7/545>

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