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GLOSSARY OF TERMS
RELATING TO RESPIRATORY
PROTECTIVE DEVICES

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GLOSSARY OF TERMS RELATING TO RESPIRATORY PROTECTIVE DEVICES

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Indian Standard
GLOSSARY OF TERMS
RELATING TO RESPIRATORY
PROTECTIVE DEVICES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 19 January 1977, after the draft finalized by the Industrial Safety Advisory Committee had been approved by the Executive Committee.

0.2 In the preparation of this standard, assistance has been taken from the following publications and is gratefully acknowledged:

AS CZ 11-1968 Respiratory protective devices. Standards Association of Australia.

BS 4275:1968 Recommendations for the selection, use and maintenance of respiratory protective equipment. British Standards Institution.

ANSI 288.2-1969 Practices for respiratory protection. American National Standards Institute.

1. SCOPE

1.1 This standard defines the terms commonly used in the field of respiratory protective devices.

2. TERMINOLOGY

2.1 Atmospheres or Conditions Immediately Dangerous to Life — These are conditions which pose an immediate threat to health and life because of the presence of a toxic substance or because of oxygen deficiency or high temperature and include conditions which pose an immediate threat of severe exposure to contaminants such as radioactive material which are likely to have adverse delayed effects on health.

2.2 Breathing Apparatus — There are two main types of breathing apparatus.

2.2.1 Self-Contained Breathing Apparatus — This enables the wearer to breathe independently of the surrounding atmosphere, using a supply of air or oxygen from a cylinder or other container which is an integral part of the apparatus. There are two types of self-contained breathing apparatus.

2.2.1.1 Open circuit type breathing apparatus — Compressed air or oxygen, carried in cylinders, is led through a demand valve and a breathing tube to a face piece. Exhaled air passes through a non-return valve to the atmosphere.

2.2.1.2 Closed circuit type breathing apparatus — Exhaled air passes from mouth piece or face piece through a breathing tube into a purifier containing chemicals which absorb the exhaled carbon dioxide. Oxygen is fed into the breathing circuit from a cylinder of compressed oxygen, from a liquid oxygen/air container or from chemical compounds contained in a canister. The oxygen and purified gases mix and are fed to the wearer. The wearer inhales from a breathing bag and any excess air is released through a relief valve.

2.2.2 Air-Line Breathing Apparatus — There are two types of air-line breathing apparatus, which are distinguished by different methods of air supply.

2.2.2.1 Fresh air use (short distance) apparatus — This consists of a mouth piece or a face piece with a valve system, connected by an air hose to uncontaminated air which is drawn through the hose by the breathing action of the wearer. The air supply may be assisted by a hand or mechanically operated blower or bellows.

2.2.2.2 Compressed air-line apparatus — This consists of a face piece, air hood or similar device connected by an air-line through a regulating valve to a source of compressed air.

2.3 Breathing Bag — A device to provide an adequate reserve of air or oxygen for inhalation.

2.4 Breathing Tube — A flexible, corrugated, non-kinking tube through which air or oxygen is conveyed to the face piece, helmet or hood.

2.5 Cartridge — A filter kept in a container which removes or renders innocuous limited concentrations of certain gases or vapours.

2.6 Contaminant, Atmospheric — Any substance, either gaseous or particulate, which is not a constituent of the normal atmosphere.

2.7 Detachable Coupling — A device by means of which the wearer, without using hand tools, may quickly detach the respirator from the air supply source.

2.8 Disinfection — The treatment of respirators for removal of pathogenic organisms, by use of chemical substances or other means.

2.9 Dusts — Solid particles dispersed in a gaseous medium as a result of the disintegration of matter. The particle size of dusts which remain suspended for a very long time is between 0.5 to 10 microns.

2.10 Dust, Toxic — Dust which may be harmful to the respiratory system or to the other parts of the body after passing from the respiratory tract into the blood stream.

2.11 Eye Piece of Respirator — A gas tight, transparent visor in a full face or a hood through which the wearer can see.

2.12 Face Piece of Respirator — That portion of the respirator which covers the wearer's nose and mouth in a half mask face piece; or nose, mouth, and eyes in full mask face piece. It is designed to give a gas-tight or dust-tight fit with the face and includes head bands, exhalation and inhalation valve(s), and connections for air-purifying device or respirable air source or both.

2.13 Filter — A fibrous medium (canned or uncanned) used in a respirator for removal of solid or liquid particles from the air stream entering the respirator enclosure.

2.14 Fog — A mist of sufficient concentration to perceptibly obscure vision.

2.15 Fumes — Solid condensation particles with particle size generally less than 1 micron.

2.16 Harness — A device for carrying and holding the apparatus on wearer's body.

2.17 Harness, Head — A device to hold the face piece securely in place on the wearer's face.

2.18 Hood — A device for carrying and holding the apparatus on wearer's body.

2.19 Hose Mask with or Without Blower — A respirator through which uncontaminated air from a source remote from the work place is supplied to the wearer through an air hose at atmospheric or near-atmospheric pressure.

2.20 Indicator, Window — A device fixed on a gas mask canister, which visually indicates the useful life of the canister against a single chemical or against more chemicals by suitable colour change.

2.21 Irrespirable — Unfit for breathing.

2.22 Lens, Corrective — A lens ground to the wearer's individual corrective prescription.

2.23 Mists — Droplets of liquid dispersed in a gaseous medium. The droplets may carry substances in solution or particles in suspension. Mists are usually formed by the condensation of vapour. They may also be produced by the atomization of a liquid. The usual particle size of the mists is generally less than 1 micron.

2.24 Particulate — The generic name of dusts, mists, smokes and fumes.

2.25 Pneumoconiosis-Producing Dusts — Dusts which when inhaled get deposited and retained in the lungs and produce pulmonary diseases described as 'Pneumoconiosis' as a result of prolonged exposure.

2.26 Resistance — Opposition to the free flow of air, through a canister, cartridge, particulate filter or orifice of a respirator and is generally expressed in terms of mm of water column.

2.27 Respirable Size Particles — The range of size of particles in microns which can easily enter the human respiratory system and to the lungs and get deposited if not filtered or otherwise removed. The ciliary action is not effective against these particles.

2.28 Respirator — The generic name for a personal protective device which removes airborne contaminants from inhaled air by mechanical filtration, chemical reaction, absorption or adsorption.

2.29 Respirator, Air-Purifying — In these respirators, the inhaled air is drawn through a medium that removes the airborne contaminants by filtration, chemical reaction, absorption or adsorption.

2.29.1 Respirator, Canister — A respirator having a filter in the form of a canister which provides protection against limited concentrations of certain gases and vapours with or without particulate matter for a limited time.

2.29.2 Respirator, Chemical Cartridge — A respirator having a filter in the form of a replaceable cartridge, which provides protection against very low concentrations of specific toxic gases and vapours. The cartridge affords protection only for a limited time by removing toxic contaminants by chemical reaction, absorption or adsorption.

2.29.3 Respirator Particulate Matter — A respirator which mechanically removes particulate matter (dusts, mists, fumes and smokes) from the inhaled air by filtration.

2.30 Respirator, Compressed Air-Line — A respirator through which compressed air from a source remote from the work place is supplied to the wearer by means of an air-line.

2.31 Respirator Container — A container which provides for storage of one or more respirators to prevent contamination with moisture, dust, gas and against physical and mechanical damage during transit and storage.

2.32 Respirator with Hood — A respirator which completely covers the head, neck and portions of shoulders and through which compressed air from a source remote from the work place is supplied to the wearer by means of an air-line. The wearer is always under a positive pressure of fresh air supply.

2.33 Smog — A combination or mixture of fog and smoke which prevail particularly in winter season during climatic inversion phase and remain suspended in air like a mantle.

2.34 Smokes — Particles dispersed in a gaseous medium. Smokes settle slowly under gravity and are characterized by their mode of formation which may include combustion, destructive distillation, volatilization, condensation, chemical, and photo-chemical reactions. The usual particle size of smokes is between 0.3 to 0.5 micron.

2.35 Sorbent — A material which removes toxic gases and vapours from air inhaled through a canister or cartridge by chemical or physical process.

2.36 Spray — Mechanically produced liquid particles with sizes generally in the visible or microscopic range.

2.37 Threshold Limit Value (TLV) — Air-borne concentration of toxic substances and represents conditions under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse effect.

2.38 Toxic Gases, Vapours and Dusts — Gases or vapours or dusts capable of producing injury once they reach a susceptible site in or on the body.

2.39 Valve (Air or Oxygen) — A device fixed on a self-contained breathing apparatus which controls the direction of air or oxygen flow or the rate and pressure at which air or oxygen is delivered or both.

2.40 Valve, Demand — A device installed on self-contained breathing apparatus for the controlled release of air or oxygen. It is actuated by negative pressure created by the action of inhalation by the wearer.

2.41 Valve, Exhalation — A one-way valve that allows exhaled air to leave a respirator and prevents ingress of outside air.

2.42 Valve, Inhalation — A device that allows respirable air to enter the face piece and prevents exhaled air from leaving the face piece through the intake opening.

2.43 Valve, Pressure Relief — A device for developing over-pressure lifts so as to allow excess air or oxygen to escape.

2.44 Valve, Regulator — A device which controls the rate and pressure of flow.

2.45 Vapour — The gaseous form of substances which changes into solid or liquid state either by increasing the pressure or decreasing the temperature alone.

(Continued from page 2)

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INDUSTRIAL SAFETY PERSONAL PROTECTIVE EQUIPMENT

IS:

- 583-1969 Ankle boots for general purposes (*first revision*)
- 1179-1967 Equipment for eye and face protection during welding (*first revision*)
- 1910-1961 Self-contained breathing apparatus for fire brigade use
- 1989-1973 Safety boots and shoes for mines and heavy metal industries (*second revision*)
- 2472-1969 Protective gaiters
- 2553-1971 Safety glass (*second revision*)
- 2573-1975 Leather gauntlets and mittens (*first revision*)
- 2745-1969 Firemen's helmets (*first revision*)
- 2925-1975 Industrial safety helmets (*first revision*)
- 3322-1965 PVC-coated fabrics for foul weather clothing
- 3521-1965 Lineman's leather safety belt and strap
- 3738-1975 Rubber knee boots (*first revision*)
- 3976-1975 Safety rubber-canvas boots for miners (*first revision*)
- 4128-1967 Fireman's leather boots
- 4501-1967 Aprons, rubberized, acid and alkali resistant
- 4770-1968 Rubber gloves for electrical purposes
- 5557-1969 Industrial and safety rubber knee boots
- 5852-1970 Protective steel toe caps for footwear
- 5983-1971 Protective filters for welding, cutting and similar operations
- 6153-1971 Protective leather clothing
- 6407-1971 Rubber aprons for hospital use
- 6519-1971 Code of practice for selection, care and repair of safety footwear
- 6994 (Part I)-1973 Industrial safety gloves: Part I Leather and cotton gloves
- 7352-1974 X-ray lead-rubber protective aprons
- 7524 (Part I)-1975 Methods of test for eye protectors: Part I Routine tests
- 7612-1974 Functional requirements for flame resistant and heat resistant suits
- 7692-1975 Wooden headform for testing of helmets