



LEGISLATION AND STANDARDS

European Standards

European Legislation

Under European legislation all types of Respiratory Protective Equipment (RPE) must be tested and certified. European Standards (EN's), which detail performance requirements and test methods, have been developed for almost every type of RPE and are particular to a given type of device.

This section details the current EN Standards relevant to the 3M range of RPE .

European Standards for Facepieces

EN149:2001 Filtering Halfmasks to protect against particles

A filtering half mask is one in which the facepiece consists entirely or substantially of filter material or comprises a facepiece in which the main filter(s) form an inseparable part of the device.

EN149:2001 – respirators which meet the requirements of EN149:2001 are designed to protect against solids, water based aerosols and oil based aerosols. There are three classes of protection detailed in EN149:2001 – FFP1, FFP2 & FFP3 and filtering facepieces are classified according to filter efficiency. EN149:2001 differs from EN149:1991 in that it is mandatory for all products tested to EN149:2001 to provide protection against solid & liquid aerosols whereas EN149:1991 allows for testing of respirators against solid aerosols only as well as solid and liquid aerosols.

EN405 Valved filtering half mask to protect against gases or vapours and particulates

A valved filtering half mask which has both inhalation and exhalation valves and consists entirely or substantially of filter material or comprises a facepiece in which the gas/ vapour filter(s) form(s) an inseparable part of the device and where particle filters may be integral or replaceable. There are several classes of device which are dependent on the particulate filtration and the gas filtering capacity. Particle filters can protect against solids, water and /or oil based aerosols and are classified depending on the filter efficiency. Gas filters remove specified gases & vapours (For details of types of gas filters see EN141) Combined filters remove specified gases and particles .

EN140 Half Masks and Quarter mask

This standard specifies the requirements for half & quarter masks for use as part of a respiratory protective device. These facepieces may be used in negative pressure systems, powered or supplied air systems .

When used as a negative pressure system, the mask may have filters conforming to EN141, EN143, EN371 or EN372 attached to it .

EN136 Full Face Masks

This standard specifies the requirements for full face masks for use as part of a respiratory protective device. These facepieces may be used in negative pressure systems, powered or supplied air systems .

There are three classes of Full Face Masks:

- Class 1 - Light duty and Low maintenance
- Class 2 - General duty, with maintainable parts
- Class 3 - Heavy duty Fire fighters

European Standards for Filters

EN14387 Gas filters and combined filters

This standard specifies the minimum requirements for gas filters & combined filters for use as part of a respiratory protective device. Gas filters remove specified gases and vapours. Combined filters remove solid and/ or liquid particles, and specified gases and vapours. According to their application and protection capacity gas and combined filters are classified in types and classes .

Types of filters

Gas filters are classified according to the type of specified gas they remove :

- **Type A:** For use against certain organic gases and vapours with a boiling point higher than 65°C, as specified by the manufacturer.
- **Type A** filters are required to be marked with the colour code Brown
- **Type B :** For use against certain inorganic gases and vapours as specified by the manufacturer (excluding CO).
- **Type B** filters are required to be marked with the colour code Grey.
- **Type E:** For use against sulphur dioxide and other acidic gases and vapours as specified by the manufacturer.
- **Type E** filters are required to be marked with the colour code Yellow .
- **Type K :** For use against ammonia and organic ammonia derivatives as specified by the manufacturer.
- **Type K** filters, are required to be marked with the colour code Green .

Type A,B,E & K filters are further classified according to the filter capacity :

Class 1 - low capacity , up to 1000ppm

Class 2 - medium capacity, up to 5000ppm

Class 3 - high capacity, up to 10,000ppm

Type NO-P3: For use against Nitrogen Oxides. The filter incorporates a particulate filter.

The filter must be marked colour code Blue-White, together with the filter Class, e.g., NO-P3.

Type Hg-P3: For use against mercury. The filter incorporates a particulate filter. The filter must be marked colour code Red-White, together with the filter Class, e.g., Hg-P3.

Filter Combinations

If a filter is a combination of types, it shall meet the requirements of each type separately. The Filter must also be marked with each colour code. For example an ABEK2P3 filter will be marked: Brown, Grey, Yellow, Green and White

EN143 Particulate Filters

This standard specifies the requirements for particle filters for use as part of a respiratory protective device.

Particle filters are classified according to their filtering efficiency. There are three classes of particle filters: P1, P2, and P3. P1 filters are intended for use against solid particles only. P2 and P3 filters are subdivided according to their ability to remove both solid and liquid particles or solid particles only.

Particle filters are to be colour coded White.

EN371 Filter for Low Boiling Organic Compounds

EN371 AX Filters

AX filters are for use against certain low boiling organic compounds. They are classified in only one type and class AX. Combined filters for use against certain low boiling organic compounds, as specified by the manufacturer, and particles are classified according to their particle efficiency: Types AXP1, AXP2 and AXP3. (Where the particle filter of the combined filter shall meet the particulate standard EN143.)

AX filters are colour coded Brown. AXP1/P2/P3 are colour coded Brown-White.

EN372 Filters for Specific Named Compounds

EN372 SX Filters

SX filters are for use against specific named compounds (gases & vapours) and are classified in only one type and class SX. (Excluding nitrogen oxides, mercury and carbon monoxide)

Combined filters for use against specific named gases and vapours and particles are classified according to their particle efficiency: types SXP1, SXP2 and SXP3. (Where the particle filter of the combined filter shall meet the particulate standard EN143.)

SX filters are colour coded Violet, SXP1/P2/P3 are colour coded Violet-White.

European Standards for Powered Air Respirators

The particulate filters are tested to EN143 and colour coded White.

EN12941 Powered filtering devices incorporating helmets or hoods

A powered filtering device incorporating a helmet or hood and providing protection against specified gases and vapours, particles (solid and/or liquid aerosols) or a combination of gases & particles. Incorporating a low air flow warning device.

The device typically consists of ;

- a hood or helmet.
- a turbo unit designed to be carried/ worn by the wearer which supplies filtered ambient air to the facepiece.
- a filter or filters through which all air supplied passes.
- exhalation valves or other outlets depending on the design by which exhaled air and air in excess of the wearer's demand is discharged.

The devices are classified as TH1, TH2 and TH3.

EN12942 Power assisted filtering devices incorporating full face masks, half masks or quarter masks

Power-assisted filtering device incorporating a full face mask, half mask or quarter mask. It provides protection against specified gases and vapours, particles (solid and/or liquid aerosols) or a combination of gases & particles. The filtering device may provide a continuous supply of air or be breath responsive.

The device typically consists of:

- a full face mask, half mask or quarter mask.
- a power operated turbo unit which supplies filtered ambient air to the facepiece.
- a filter or filters through which all air supplied to the facepiece passes.
- exhalation valves or other outlets depending on the design by which exhaled air and -air in excess of the wearer's demand is discharged.

The devices are classified as TM1, TM2 and TM3.

European Standards for Supplied Air Respirators

EN270 Compressed air line breathing apparatus incorporating a hood

Compressed air line breathing apparatus incorporating a hood which is not self-contained and in which the wearer is supplied with breathable quality air from a source of compressed air. The apparatus may be fitted with an adjustable continuous flow valve (regulator) which may be carried by the wearer. Exhaled and excess air flows into the ambient environment. A compressed air supply tube connects the wearer to a supply of compressed air.

EN1835 Light duty compressed air line breathing apparatus incorporating a hood

A light duty compressed air line breathing apparatus incorporating a helmet or hood is an apparatus which is not self contained and in which the wearer is supplied with breathable quality air from a source of compressed air. The apparatus may incorporate an adjustable continuous flow valve (regulator) which may be carried by the wearer. Exhaled and excess air flows into the ambient environment. A compressed air supply tube connects the wearer to a supply of compressed air.

The maximum length of the compressed airline is 10 metres. The devices have three classes LDH1, LDH2 and LDH3.

For more details on European Standards or to purchase copies of European Standards contact your National Standards Institute.



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