

Respiratory protective devices — Classification

The European Standard EN 133:2001 has the status of a
British Standard

ICS 13.340.30

National foreword

This British Standard is the official English language version of EN 133:2001. It supersedes BS EN 133:1991 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee PH/4, Respiratory protection, to Subcommittee PH/4/1, Selection and terminology, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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This British Standard, having been prepared under the direction of the Health and Environment Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 18 March 2002

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 9 and a back cover.

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Amendments issued since publication

Amd. No.	Date	Comments

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English version

Respiratory protective devices - Classification

Appareils de protection respiratoire - Classification

Atemschutzgeräte - Einteilung

This European Standard was approved by CEN on 2 September 2001.

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Foreword

This document has been prepared by Technical Committee CEN/TC 79, "Respiratory protective devices", the secretariat of which is held by DIN.

This document supersedes EN 133:1990.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2002, and conflicting national standards shall be withdrawn at the latest by April 2002.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 89/686/EEC.

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard classifies respiratory protective devices (RPD) according to their basic design, i.e. a general logical grouping of the RPD.

This European standard is intended to serve as a basic introductory reference for users and for the preparation and revision of European Standards on respiratory protective devices.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 132, *Respiratory protective devices - Definitions of terms and pictograms.*

EN 136, *Respiratory protective devices - Full face masks – Requirements, testing, marking.*

EN 137, *Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus – Requirements, testing, marking.*

EN 138, *Respiratory protective devices - Fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece assembly - Requirements, testing, marking.*

EN 139, *Respiratory protective devices - Compressed air line breathing apparatus for use with a full face mask, half mask or mouthpiece assembly – Requirements, testing, marking.*

EN 140, *Respiratory protective devices – Half masks and quarter masks – Requirements, testing, marking.*

EN 141, *Respiratory protective devices - Gas filters and combined filters – Requirements, testing, marking.*

EN 142, *Respiratory protective devices - Mouthpiece assemblies – Requirements, testing, marking.*

EN 143, *Respiratory protective devices - Particle filters – Requirements, testing, marking.*

EN 145, *Respiratory protective devices - Self-contained closed-circuit breathing apparatus compressed oxygen or compressed oxygen-nitrogen type – Requirements, testing, marking.*

EN 149, *Respiratory protective devices - Filtering half masks to protect against particles – Requirements, testing, marking.*

EN 250, *Respiratory equipment - Open-circuit self-contained compressed air diving apparatus – Requirements, testing, marking.*

EN 269, *Respiratory protective devices - Powered fresh air hose breathing apparatus incorporating a hood – Requirements, testing, marking.*

EN 270, *Respiratory protective devices - Compressed air line breathing apparatus incorporating a hood – Requirements, testing, marking.*

EN 271, *Respiratory protective devices - Compressed air line or powered fresh air hose breathing apparatus incorporating a hood for use in abrasive blasting operations – Requirements, testing, marking.*

EN 371, *Respiratory protective devices - AX gas filters and combined filters against low boiling organic compounds - Requirements, testing, marking.*

EN 372, *Respiratory protective devices - SX gas filters and combined filters against specific named compounds – Requirements, testing, marking.*

EN 400, *Respiratory protective devices for self-rescue - Self-contained closed-circuit breathing apparatus - Compressed oxygen escape apparatus – Requirements, testing, marking.*

EN 401, *Respiratory protective devices for self-rescue - Self-contained closed-circuit breathing apparatus - Chemical oxygen (KO₂) escape apparatus – Requirements, testing, marking.*

EN 402, *Respiratory protective devices for escape - Self-contained open-circuit compressed air breathing apparatus with full face mask or mouthpiece assembly – Requirements, testing, marking.*

EN 403, *Respiratory protective devices for self-rescue - Filtering devices with hood for self-rescue from fire – Requirements, testing, marking.*

EN 404, *Respiratory protective devices for self-rescue - Filter self-rescuers – Requirements, testing, marking.*

EN 405, *Respiratory protective devices - Valved filtering half masks to protect against gases or gases and particles - Requirements, testing, marking.*

EN 1061, *Respiratory protective devices for self-rescue - Self-contained closed-circuit breathing apparatus - Chemical oxygen (NaClO₃) escape apparatus – Requirements, testing, marking.*

EN 1146, *Respiratory protective devices for self-rescue - Self-contained open-circuit compressed air breathing apparatus incorporating a hood (compressed air escape apparatus with hood) – Requirements, testing, marking.*

EN 1827, *Respiratory protective devices - Half masks without inhalation valves and with separable filters to protect against gases or gases and particles or particles only – Requirements, testing, marking.*

EN 1835, *Respiratory protective devices - Light duty construction compressed air line breathing apparatus incorporating a helmet or a hood – Requirements, testing, marking.*

EN 12021, *Respiratory protective devices - Compressed air for breathing apparatus.*

EN 12083, *Respiratory protective devices – Filters with breathing hoses – (Non-mask mounted filters) – Particle filters, gas filters and combined filters – Requirements, testing, marking.*

EN 12419, *Respiratory protective devices - Light duty construction compressed air line breathing apparatus incorporating a full face mask, half mask or quarter mask – Requirements, testing, marking.*

EN 12941, *Respiratory protective devices - Powered filtering devices incorporating a helmet or a hood – Requirements, testing, marking.*

EN 12942, *Respiratory protective devices – Power assisted filtering devices incorporating full face masks, half masks or quarter masks – Requirements, testing, marking.*

3 Classification

3.1 General classification

There are two distinct methods of providing personal respiratory protection:

- by purifying the ambient air to be breathed using filters able to remove contaminants in the air - filtering devices or
- by supplying the wearer with breathable gas from an uncontaminated source - breathing apparatus.

In general a respiratory protective device consists of two main components, a facepiece and filter(s) or a facepiece and a means of providing uncontaminated breathable gas. The facepiece directs this breathable gas to the wearer's nose and mouth area.

- The facepiece can be a mask, filtering facepiece, hood, mouthpiece, helmet etc.
- The airflow through filter(s) may be assisted or unassisted.
- The means of supplying breathable gas may consist of pressure cylinders, compressed air line system, fresh air supply system, or another suitable supply system.
- Following this, RPD's are classified according to Figure 1.

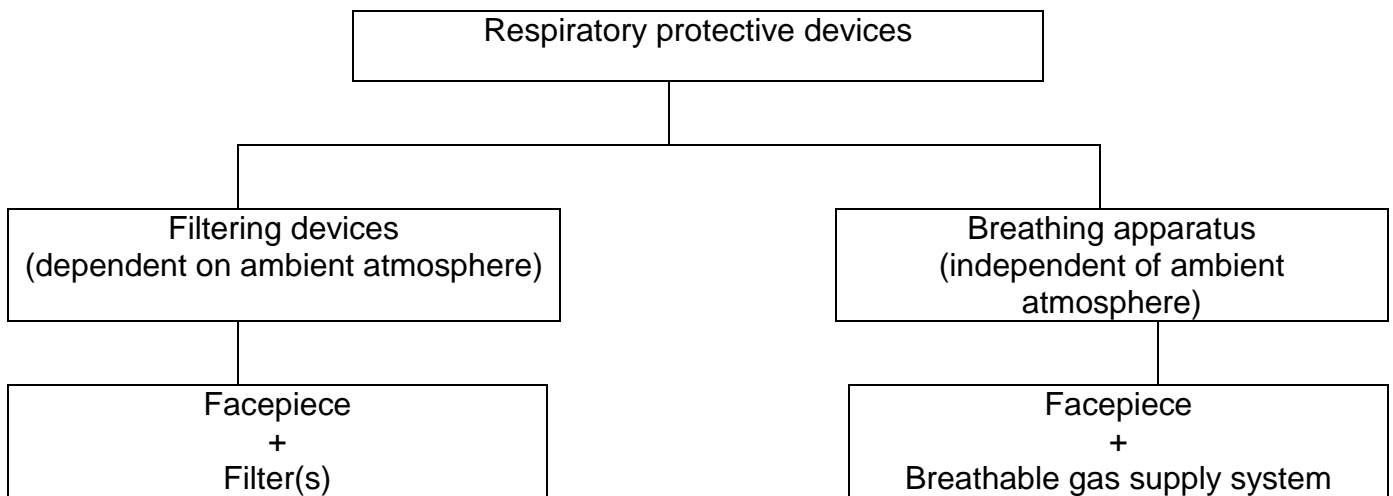


Figure 1 — The major classes of respiratory protective devices

3.2 Filtering devices (see Table 1)

Filtering devices remove contaminants from the ambient air by filtration and can only protect against limited concentration ranges of known contaminants in the air if a suitable filter and facepiece are chosen.

The filters in filtering devices can be for protection against particles (particle filters), gases/vapours (gas filters), or for protection against particles and gases/vapours (combined filters).

Filtering devices do not give protection against oxygen deficiency.

Particle filters are divided in the following classes:

- 1 Low efficiency filters;
- 2 Medium efficiency filters;
- 3 High efficiency filters.

Gas filters are divided in the following classes:

- 1 Low capacity filters;
- 2 Medium capacity filters;

- 3 High capacity filters.

and further divided in types according to the gases they protect against e.g. filter types A, B, E or K according to the classification of the appropriate European Standards.

Filters can be combined filters or multi type gas filters (see EN 132).

Table 1 — Filtering devices and relevant EN standards

Un-assisted	Filters to be used with full face mask (EN 136), half mask and quarter mask (EN 140) or mouthpiece assemblies (EN 142)	Gas filters and combined filters	EN 141
		Particle filters	EN 143
		AX gas filters and combined filters against low boiling organic compounds	EN 371
		SX gas filters and combined filters against specific named compounds	EN 372
		Filters with breathing hoses – (Non mask mounted filters) – Particle filters, gas filters and combined filters	EN 12083
	Filtering facepieces	Filtering half masks to protect against particles	EN 149
		Valved filtering half masks to protect against gases or gases and particles	EN 405
		Half masks without inhalation valves and with separable filter to protect against gases or gases and particles or particles only	EN 1827
	Self-rescuer	Filtering devices with hood for self-rescue from fire	EN 403
		Filter self-rescuers	EN 404
Assisted		Powered filtering devices incorporating helmet or hood	EN 12941
		Power assisted filtering devices incorporating full face mask, half mask or quarter mask	EN 12942

Facepieces are specified in EN 136 (full face mask), EN 140 (half masks) and EN 142 (mouthpiece assemblies). Helmets and hoods are specified in the relevant product standards.

3.3 Breathing apparatus (see Table 2)

Breathing apparatus isolate the user from the ambient air and supply breathable air or gas suitable for safe respiration. Breathing apparatus protect against oxygen deficiency in the ambient air as well as contaminants (known or unknown) in the ambient air.

EN 12021 provides guidance for suitable air quality for use in breathing apparatus.

Diving apparatus is also considered as breathing apparatus.

Table 2 — Breathing apparatus and relevant EN standards

Not self-contained	Fresh air hose breathing apparatus	Fresh air hose breathing apparatus for use with full face mask, half mask or mouth piece assembly Unassisted or manually assisted.	EN 138
		Powered fresh air hose breathing apparatus incorporating a hood	EN 269
	Compressed air line breathing apparatus	Compressed air line breathing apparatus for use with full face mask, half mask or mouthpiece assembly	EN 139
		Compressed air line breathing apparatus incorporating a hood	EN 270
		Compressed air line or powered fresh air hose breathing apparatus incorporating a hood for use in abrasive blasting operations	EN 271
		Light duty compressed air line breathing apparatus incorporating a helmet or a hood	EN 1835
	Light duty construction compressed air line breathing apparatus incorporating a full face mask, half mask or quarter mask	EN 12419	
Self-contained	Open circuit	Self-contained open-circuit compressed air breathing apparatus	EN 137
		Open-circuit self-contained compressed air diving apparatus	EN 250
	Closed circuit	Self-contained closed-circuit breathing apparatus compressed oxygen or compressed oxygen-nitrogen type	EN 145
Escape apparatus	Open circuit	Self-contained open-circuit compressed air breathing apparatus with full face mask or mouthpiece assembly	EN 402
		Self-contained open-circuit compressed air breathing apparatus incorporating a hood (compressed air escape apparatus with hood)	EN 1146
	Closed circuit	Self-contained closed-circuit breathing apparatus - Compressed oxygen escape apparatus	EN 400
		Self-contained closed-circuit breathing apparatus - Chemical oxygen (KO ₂) escape apparatus	EN 401
		Self-contained closed-circuit breathing apparatus - Chemical oxygen (NaClO ₃) escape apparatus	EN 1061

Facepieces are specified in EN 136 (full face mask), EN 140 (half masks) and EN 142 (mouthpiece assemblies). Helmets and hoods are specified in the relevant product standards.

Annex ZA (informative)

Clauses of this European Standard addressing essential requirements or other provisions of EU Directives

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directive 89/686/EEC.

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

The clauses of this standard are likely to support requirements of the clause 3.10.1 in Annex II of Directive 89/686/EEC.

Compliance with this standard provides one means of conforming with the specific essential requirements of the Directive concerned and associated EFTA regulations.

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