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BSI Standards Publication

Respiratory protective devices — Classification for respiratory protective device (RPD), excluding RPD for underwater application

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee PH/4, Respiratory protection.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

ISO/TS 16973 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 15, *Respiratory protective devices*.

Introduction

This Technical Specification contains the classification of Respiratory Protective Devices (RPD) and the related marking in accordance with the requirements of the performance standards.

The basic classification, which applies to all RPD, will be marked in the following order:

a) protection class;

b) work rate class;

c) respiratory interface class.

Some examples for marking of commonly known RPD are included in Annex B.

For Supplied Breathable Gas RPD, the classification also includes gas capacity class.

For Filtering RPD, the classification also includes a particle filter class and/or the gas filter types and classes.

RPD designated to be used for Special Applications are further classified accordingly.

The special applications identified are

— Firefighting,

— Chemical, Biological, Radiological and Nuclear (CBRN),

— Marine,

— Mining,

— Abrasive blasting,

— Welding, and

— Escape.

Each RPD will have an individual classification based on its performance specified in the relevant performance standards.

Explanations of the classification and examples of the classification of RPD are given in the Annexes.

The following definitions apply in understanding how to implement an ISO International Standard and other normative ISO deliverables (TS, PAS, IWA):

— “shall” indicates a requirement;

— “should” indicates a recommendation;

— “may” is used to indicate that something is permitted;

— “can” is used to indicate that something is possible, for example, that an organization or individual is able to do something.

3.3.1 of the ISO/IEC Directives, Part 2 (sixth edition, 2011) defines a requirement as an “expression in the content of a document conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.”

3.3.2 of the ISO/IEC Directives, Part 2 (sixth edition, 2011) defines a recommendation as an “expression in the content of a document conveying that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is

preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited."

Respiratory protective devices — Classification for respiratory protective device (RPD), excluding RPD for underwater application

1 Scope

This Technical Specification specifies the classification of Respiratory Protective Devices based on their performance. The performance requirements are given in the relevant performance standards.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16900-1, *Respiratory protective devices — Methods of test and test equipment — Part 1: Determination of inward leakage*

ISO 16900-3, *Respiratory protective devices — Methods of test and test equipment — Part 3: Determination of particle filter penetration*

ISO 16900-12, *Respiratory protective devices — Methods of test and test equipment — Part 12: Determination of volume-averaged work of breathing and peak respiratory pressures*

ISO 16972, *Respiratory protective devices — Terms, definitions, graphical symbols and units of measurement*

ISO/TS 16976-1, *Respiratory protective devices — Human factors — Part 1: Metabolic rates and respiratory flow rates*

ISO 17420-3, *Respiratory protective devices — Performance requirements — Part 3: Thread connection*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16972 apply.

4 Mode of operation

There are two modes of operation that RPD may employ to supply breathable gas to the wearer. These modes are specified in Table 1.

Table 1 — Mode of operation

Mode of operation	Means of providing breathable gas to the wearer	Typical examples of RPD
Breathable gas supply	The RPD supplies the wearer with breathable gas from a remote supply of breathable gas or from breathable gas stored in, or regenerated by, the RPD.	Compressed airline breathing apparatus, self-contained breathing apparatus (SCBA)
Filtration	The RPD removes gases, vapours and/or particles from the ambient air depending on the air-purifying element (filter) used. These can be assisted or unassisted devices.	Half mask with gas filter(s) Filtering facepiece