
**Respiratory protective devices —
Performance requirements —**

**Part 6:
Special application escape - Filtering
RPD and supplied breathable gas RPD**

Appareils de protection respiratoire — Exigences de performances —

Partie 6: Application particulière d'évacuation - APR alimentés en gaz respirable et APR filtrants



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Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms, definitions and abbreviations	2
3.1 Terms and definitions	2
3.2 Abbreviated terms	3
4 Classification overview	3
4.1 General	3
4.2 Supplied breathable gas RPD for escape	3
4.3 Filtering RPD for escape	4
5 General requirements for RPD	4
6 Basic requirements for supplied breathable gas RPD and filtering RPD	4
7 Special application for supplied breathable gas escape RPD and filtering escape RPD	4
7.1 Special application escape RPD - Requirement matrices	4
7.1.1 General	4
7.1.2 Supplied breathable gas RPD — Escape	4
7.1.3 Filtering escape RPD	6
7.2 Requirements for special application escape RPD	8
7.2.1 Exposure to dust	8
7.2.2 Contact with hot or cold surfaces generated by the RPD	8
7.2.3 Avoidance of frictional sparks - Filtering escape RPD and supplied breathable gas escape RPD	9
7.2.4 Resistance to flame	9
7.2.5 Mechanical Requirement	10
7.2.6 Requirements for escape RPD used in explosive atmospheres and electromagnetic compatibility	10
7.2.7 Antistatic properties - Filtering escape RPD and supplied breathable gas escape RPD	11
7.2.8 Eye irritation (external) - Filtering escape RPD and supplied breathable gas escape RPD	11
7.2.9 Determination of duration	12
7.2.10 Validation of escape RPD performance requirements	14
7.3 Pre-conditioning	28
7.3.1 Exposure to impact from drop — Filtering escape RPD and supplied breathable gas escape RPD	28
7.3.2 Resistance to changes in atmospheric pressure	28
7.3.3 Intermittent exposure to salt spray	28
7.3.4 Exposure to vibration and shock for supplied breathable gas escape RPD	29
7.3.5 Exposure to vibration and shock - marine	29
7.3.6 Exposure to vibration and shock - mining	30
7.3.7 Filtering escape RPD	31
8 Inspection	31
8.1 General	31
8.2 Inspection	31
8.3 Testing of leak tightness using positive pressure	32
9 Marking	32
10 Information supplied by the RPD manufacturer	32

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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 94, *Personal safety – Personal protective equipment*, Subcommittee SC 15, *Respiratory protective devices*.

A list of all parts in the ISO 17420 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document describes requirements for RPD including its elements and components used for special applications for escape devices.

Some test methods are described. For other test methods references are given to the ISO 16900 series "Methods of test and test equipment" or other test methods not developed by ISO/TC 94/SC 15.

The sequence of testing follows the principle to minimize the necessary number of samples by carrying out destructive tests at the end. It also includes for safety reason that tests with test subjects are only carried out after the test samples have shown their safe performance in other tests.

Respiratory protective devices — Performance requirements —

Part 6:

Special application escape - Filtering RPD and supplied breathable gas RPD

1 Scope

This document specifies the requirements for supplied breathable gas RPD and for filtering RPD to be used for special application escape for use in the workplace to protect the wearer.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8031, *Rubber and plastics hoses and hose assemblies — Determination of electrical resistance and conductivity*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 16900-1:2019, *Respiratory protective devices — Methods of test and test equipment — Part 1: Determination of inward leakage*

ISO 16900-4, *Respiratory protective devices — Methods of test and test equipment — Part 4: Determination of gas filter capacity and migration, desorption and carbon monoxide dynamic testing*

ISO 16900-5, *Respiratory protective devices — Methods of test and test equipment — Part 5: Breathing machine, metabolic simulator, RPD headforms and torso, tools and verification tools*

ISO 16900-6, *Respiratory protective devices — Methods of test and test equipment — Part 6: Mechanical resistance/strength of components and connections*

ISO 16900-8, *Respiratory protective devices — Methods of test and test equipment — Part 8: Measurement of RPD air flow rates of assisted filtering RPD*

ISO 16900-9, *Respiratory protective devices — Methods of test and test equipment — Part 9: Determination of carbon dioxide content of the inhaled gas*

ISO 16900-10, *Respiratory protective devices — Methods of test and test equipment — Part 10: Resistance to ignition, flame, radiant heat and heat*

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 — Vocabulary and graphical symbols*

ISO 17420-1:2021, *Respiratory protective devices — Performance requirements — Part 1: General*

ISO 17420-2:2021, *Respiratory protective devices — Performance requirements — Part 2: Requirements for filtering RPD*

ISO 17420-4:2021, *Respiratory protective devices — Performance requirements — Part 4: Requirements for supplied breathable gas RPD*

ISO 23269-2:2011, *Ships and marine technology — Breathing apparatus for ships — Part 2: Self-contained breathing apparatus for shipboard firefighters*

IEC 60068-2-27:2010, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock*

IEC 60068-2-64:2009, *Environmental testing — Part 2-64: Tests — Test Fh: Vibration, broadband random and guidance*

IEC 60079-0, *Explosive atmospheres — Part 0: Equipment — General requirements*

IEC 60079-11, *Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”*

IEC 60079-32-1:2013, *Explosive atmospheres — Part 32-1: Electrostatics hazards — Guidance*

IEC 60079-32-2:2015, *Explosive atmospheres — Part 32-2: Electrostatics hazards — Tests*

IEC 60721-1:2003, *Classification of environmental conditions — Part 1: Environmental parameters and their severities*

IEC 60721-3-2:2018, *Classification of environmental conditions — Part 3-2: Classification of groups of environmental parameters and their severities — Transportation and Handling*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments*

EN 50303, *Group 1, category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1.1

non pre-conditioned state

without pre-conditioning but possibly modified to carry out tests or already used in non-destructive tests

Note 1 to entry: This includes e.g. cleaning and disinfection.

3.1.2

RPD in as worn state

RPD where all components are connected and assembled in the way that it is intended to be used (e.g. worn by the wearer, adapted to an RPD headform or RPD headform and torso or suitable holder).

Note 1 to entry: All of the various components (e.g. for an assisted filtering RPD: blower unit, battery, RI, filters, etc.) have been completely assembled and then connected (RI connected to the hose of the blower unit) together in accordance with the information supplied by the manufacturer.

3.1.3

component in ready for assembly state

component with seals, plugs, packaging or other environmental protective means, still in place