BS ISO 22932-7:2025

BSI Standards Publication

Mining — Vocabulary

Part 7: Ventilation

Documents
Document Sharing Hub

Full document details: BS ISO 22932-7:2025

National foreword

This British Standard is the UK implementation of ISO 22932-7:2025.

The UK participation in its preparation was entrusted to Technical Committee B/513/2.

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

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2025
Published by BSI Standards Limited 2025

ISBN 978 0 539 22539 6

ICS 01.040.73; 73.020

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

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2025.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS ISO 22932-7:2025

International Standard

ISO 22932-7

First edition
2025-07

Mining — Vocabulary —

Part 7: Ventilation

Exploitation minière — Vocabulaire —

Partie 7: Ventilation

Reference number
ISO 22932-7:2025(en)

© ISO 2025

Documents
Document Sharing Hub

Full document details: BS ISO 22932-7:2025

COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
3.1 Gases in mine air 1
3.2 Combustible gases environment 4
3.3 Dusts in mine air 6
3.4 Devices 8
3.5 Security devices 9
3.6 Fans usage 10
3.7 Auxiliary mine ventilation 11
3.8 Installations for passage, divert, or prevention of mine air 12
3.9 Mine ventilation management 17
3.9.1 General concepts 17
3.9.2 Mine ventilation management - Layout 17
3.9.3 Mine ventilation management - Surveillance 19
3.10 Measurement 20
Bibliography **25**
Index **26**

© ISO 2025 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 82, Mining.

A list of all parts in the ISO 22932 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.

© ISO 2025 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025

Introduction

The ISO 22932 series has been prepared in order to standardize and to co-ordinate the global use of technical terms and definitions in mining, for the benefit of the experts working on different types of mining activities.

The need for the ISO 22932 series arose from the widely varying interpretation of terms used within the industry and the prevalent use of more than one synonym.

© ISO 2025 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025

Documents
Document Sharing Hub

Mining — Vocabulary —

Part 7: Ventilation

1 Scope

This document specifies the commonly used terms and definitions in underground mine ventilation. Only those terms and definitions that have a specific meaning in this field are included.

NOTE Some terms and definitions are also applicable to surface mining.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Gases in mine air

3.1.1
mine air
mixture of gases circulating through the workings

3.1.1.1
damp
mine air (3.1.1) deficient in oxygen

3.1.1.1.1
afterdamp
damp (3.1.1.1) that remain in a mine after a mine fire or an explosion of *combustible gases* (3.2.1)

Note 1 to entry: Afterdamp consists of carbonic acid gas, water vapor (quickly condensed), nitrogen, oxygen, carbon monoxide, and in some cases free hydrogen.

Note 2 to entry: Afterdamp is breathable.

Note 3 to entry: See also blackdamp; damp.

Note 4 to entry: See Reference [1].

© ISO 2025 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025

3.1.1.1.2
blackdamp
afterdamp (3.1.1.1.1) containing carbon dioxide and nitrogen in excess of the normal percentage, and in which a *flame safety lamp* (3.4.1.1) will not burn owing to a deficiency of oxygen

Note 1 to entry: The average blackdamp contains 10 % to 15 % carbon dioxide and 85 % to 90 % nitrogen.

Note 2 to entry: Blackdamp is formed by mine fires and the explosion of combustible gases in mines, and hence forms a part of the afterdamp.

Note 3 to entry: It extinguishes light and suffocates its victims. Hence, it is sometimes known as chokedamp.

Note 4 to entry: See Reference [1].

3.1.1.1.3
chokedamp
mine atmosphere that causes choking or suffocation due to insufficient oxygen

Note 1 to entry: See Reference [1].

3.1.1.1.4
white damp
damp (3.1.1.1) composed of carbon monoxide (CO)

Note 1 to entry: White damp can be present in the afterdamp of a gas- or coal-dust explosion, or in the gases given off by a mine fire; also one of the gases produced by blasting.

Note 2 to entry: White damp is an important constituent of illuminating gas, supports combustion, and is very poisonous because it is absorbed by the hemoglobin of the blood to the exclusion of oxygen.

Note 3 to entry: See Reference [1].

3.1.2
noxious gas
mine air (3.1.1) that contains gas which is injurious to health

3.1.2.1
ill air
noxious gas, as from underground fires or chokedamp

Note 1 to entry: Ill air stagnant state of the atmosphere underground.

Note 2 to entry: See Reference [1].

3.1.2.2
stifle
noxious gas (3.1.2) resulting from an underground fire

Note 1 to entry: See Reference [1].

3.1.3
foul air
main air contaminated by powder fumes, noxious gases, or respirable dust

Note 1 to entry: See Reference [1].

3.1.4
stythe
mine air (3.1.1) containing carbonic acid gas, often found in old workings and given off in most shallow mines

Note 1 to entry: Also spelled stithe.

Note 2 to entry: See Reference [1].

© ISO 2025 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025

3.1.5
air blast
strong rush of *mine air* (3.1.1) through the workings

Note 1 to entry: Air blasts can occur caused by an explosion, a movement of large masses of strata, an outburst of coal or by a movement of a body of water.

3.1.6
air current
air flow
flow of *mine air* (3.1.1) ventilating the workings of a mine

3.1.6.1
circulation of mine air
dominated air current

Note 1 to entry: The circulation of air aims to ensure adequate ventilation of all workings and roadways.

Note 2 to entry: See Reference [1].

3.1.6.1.1
re-circulation
continuous *circulation ofmine air* (3.1.6.1) of all or some part of the same air in part of a *mine ventilation system* (3.9.2.1)

3.1.7
air requirement
quantity of *mine air* (3.1.1) required by law or practical considerations to maintain adequate ventilation of a mine

Note 1 to entry: This quantity will depend on (1) the length of face room in production, (2) the average distance from the shafts to the faces, (3) the gas emission rate, (4) the depth of the workings, (5) the volumetric efficiency of the mine ventilation, (6) heat loads and (7) time to evacuate blast gases.

Note 2 to entry: See Reference [1].

3.1.8
air power
air horsepower
horsepower of ventilation
energy is used in moving *mine air* (3.1.1) between two points of a mine, in “W”, “kW” and “hp”

Note 1 to entry: Air power is measured by the quantity circulated multiplied by the ventilating pressure required as follow

$$N = PQ$$

where

P pressure of air, in Pascal;

Q quantity of air flowing, in cubic meters per second.

3.1.9
fugitive air
mine air (3.1.1) moving through the fan that never reaches the working faces

Note 1 to entry: See Reference [1].

3.1.10
dead air
stagnant *mine air* (3.1.1)

© ISO 2025 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025

3.1.11
return air
mine air (3.1.1) travelling in a return and typically exhausting to atmosphere

3.2 Combustible gases environment

3.2.1
combustible gas
firedamp
marsh gas
flammable gas, consisting mainly of methane

Note 1 to entry: Generally, combustible gas is found naturally in coal mines.

Note 2 to entry: If the decaying matter at the bottom of a marsh or pond is stirred, bubbles of methane rise to the surface, thus the name marsh gas.

Note 3 to entry: It is nonexplosive until met with mine air or oxygen and a heat or ignition source.

Note 4 to entry: See Reference [1].

3.2.1.1
combustible gas migration
movement of *firedamp* (3.2.1) through the strata or the waste left in old mine workings

3.2.2
combustible gas fringe
zone of contact between the goaf gases and the ventilating *air current* (3.1.6) at the face

Note 1 to entry: See Reference [1].

3.2.3
layering of combustible gas
formation of a of *combustible gas layer* (3.2.3) at the roof of a mine working and above the ventilating air current

Note 1 to entry: See Reference [1].

3.2.3.1
combustible gas layer
formation of a of combustible gas layer at the roof of a mine working and above the ventilating air current

Note 1 to entry: A combustible gases layer can be specified as one in which the gas is 5 % or over and of a length greater than the width of the road in which it occurs on the other hand a combustible gases layer can be specified as one in which the gas is 5 % or over.

Note 2 to entry: Combustible gas layer frequently appears as sheetlike accumulation of combustible gas where the ventilation is too sluggish to dilute and remove the gas.

Note 3 to entry: See Reference [1].

3.2.3.2
roof layer
combustible gas layer (3.2.3) under the roof of a mine working

Note 1 to entry: Roof layer can flow either with or against the ventilation.

3.2.3.2.1
backing
action of a *roof layer* (3.2.3.2) of *combustible gases* (3.2.1) flowing uphill against the direction of the ventilation

© ISO 2025 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 22932-7:2025