



BSI Standards Publication

**Guidelines for assessing the adverse impact  
of wildland fires on the environment and to  
people through environmental exposure**

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## National foreword

This Published Document is the UK implementation of ISO/TS 19677:2019.

The UK participation in its preparation was entrusted to Technical Committee FSH/16, Hazards to life from fire.

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

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## **Guidelines for assessing the adverse impact of wildland fires on the environment and to people through environmental exposure**

*Lignes directrices pour l'évaluation de l'impact négatif des feux  
d'espaces naturels sur l'environnement et les personnes par exposition  
environnementale*



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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](http://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](http://www.iso.org/patents)).

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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 3, *Fire threat to people and environment*.

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](http://www.iso.org/members.html).

## Introduction

This document gives guidance and provides a methodology for assessing the adverse environmental impact of wildland fires and wildland firefighting operations. The serious consequences of the adverse impact of fire effluent from forest, shrubland and grassland fires to the environment and to people, through environmental exposure, have confirmed that it is an important issue that urgently needs to be dealt with internationally and systematically. This document provides a framework for a common treatment of the environmental impact of wildland fires.

General awareness of the fact that large wildland fires present serious and persistent adverse effects on the environment has been accentuated by a number of high impact incidents over the past half century. In [Annex A](#), some recent wildland fire incidents are listed and their environmental impact is described.

This document has been prepared in accordance with ISO Guide 64[1].



# Guidelines for assessing the adverse impact of wildland fires on the environment and to people through environmental exposure

## 1 Scope

This document addresses the impact of wildland fires and firefighting activities on the environment (air, water, soil, wildlife and vegetation). It further addresses the impact of wildland fire effluents on exposed human population, including firefighters, as well as food production, land, sea and air traffic, and the built environment. It also describes the environmental impacts of firefighting activities.

This document also provides requirements and recommendations to quantify such impacts of wildland fires and to establish post-fire mitigation measures.

The wildland fires covered include both natural wildland fires and man-initiated fires, including prescribed burning and agricultural fires, but not peat fires nor coal seam fires.

This document is intended to serve as a tool for the development of standard protocols for:

- the assessment of local and remote adverse environmental impacts of wildland fires;
- the assessment of the effects of smoke and gas exposure on firefighters and exposed human populations.

It provides guidance for incident commanders and other responsible or affected parties when decisions regarding firefighting strategies, tactics, and restoration are made. It is intended principally for use by firefighters and investigators, insurance providers, environmental regulatory authorities, civil defence organisations, public health authorities and land owners.

This document does not include specific instruction on compiling and reporting the information needed to assess environmental damage caused by a fire incident, nor does it include specific sampling methodologies and analysis requirements. These topics are the focus of documents in the ISO 26367 series. This document does not address either fire damage to the built environment, direct acute toxicity issues, which are covered by other ISO standards, nor does it address economic impact, although the impact of climate change is discussed in [Annex D](#).

## 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 13943, *Fire safety — Vocabulary*

ISO 14050, *Environmental management — Vocabulary*

ISO 26367-1, *Guidelines for assessing the adverse environmental impact of fire effluents — Part 1: General*

ISO 26367-2, *Guidelines for assessing the adverse environmental impact of fire effluents — Part 2: Methodology for compiling data on environmentally significant emissions from fires*