
**Information and documentation —
Management of the environmental
conditions for archive and library
collections**

*Information et documentation — Gestion des conditions
environnementales pour les documents d'archive et de bibliothèque*



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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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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 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 10, *Requirements for document storage and conditions for preservation*.

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 covers much of the same ground as BSI/PAS 198[46]. The main difference is that BSI/PAS 198 was designed to be applied in British conditions with a temperate climate. Challenges vary in different climatic zones. Nevertheless, there are principles that are generally applicable.

No one set of conditions is appropriate for all collections in all circumstances because environmental specifications are tailored to the needs of a specific collection, the resources of the institution and the context within which it operates, and the local climate. This document sets out a framework for decision making relating to appropriate environmental conditions for cultural collections in the specific climatic zones.

Since archives, libraries and cultural institutions are guardians of the collective memory, their aim is to preserve material in the long term. They also have a duty to do so in a manner that minimizes the impact on the world's resources and climate. Climate change will affect cultural institutions as much as any other institution, if not more, and the use of energy, particularly from non-renewable sources, should be minimized. Wherever possible, passive (non-energy consuming) solutions are preferred, and buildings should be designed with this aim in mind.

First, the extent and composition of the collections, their significance, their current condition, the ways in which they are used, and the desired lifetime should be taken into account. For example, archive and library collections are likely to contain (in addition to bound and unbound paper and parchment and other organic materials, such as Xuan paper and silk, black and white and colour photographic prints and negatives) gramophone records, tapes and films, and, increasingly, diverse electronic media. In addition, the collections can contain all manner of artefacts in various materials. While many of these materials have similar environmental sensitivities, some have specific requirements that need to be taken into account.

The environment in which the collections are stored, used or displayed, and the resulting risks to them should also be understood. On the basis of the information gathered about the collections, regarding the nature and condition of the collections, it is possible to assess the vulnerability to factors such as temperature, relative humidity, light and pollutants, and thus what steps need to be taken to mitigate those risks. These might include the design of, or modifications to buildings, passive measures to control the environment, or improvements to storage and display techniques.

Every collecting institution can and should be able to carry out these steps, no matter how limited their resources, and irrespective of their climate. Knowledge of the collections, and of the risks, is indispensable to proper management and long term survival of the collections.

The consensus amongst conservation professionals regarding environmental parameters for exhibitions and loans is evolving rapidly. References [29], [206] and [236] give additional information on this. Although there is no doubt that a controlled environment is significant in the preservation of collections, provided that the parameters are appropriate to the materials, it is now generally accepted that daily and seasonal variations in temperature and relative humidity will not cause harm to the majority of collections.

This document also provides access to research that led to some of the changes in ISO 11799.

Information and documentation — Management of the environmental conditions for archive and library collections

1 Scope

This document provides information on recent discussions and changes in recommendations and guidance on environmental management within the cultural heritage field. Conservation research on preventive methodologies and passive control provided by specific construction methods and renovations, developments in technology for controlling the environment, and energy and climate change issues are included.

This document is intended for archives and libraries and other institutions with large volumes of collections that are based on paper. Archives and libraries also have collections that include film, magnetic media, leather, and other organic, inorganic or composite materials. These institutions have a unique challenge of extending the lifespan of these materials for access and use in the present and for future generations. The environment plays a key role in extending the lifespan of all of these materials.

This document is intended for use in preservation planning and ongoing environmental management of permanent storage conditions for archives and library collections and applies to all collections being permanently stored for an institution.

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 terminological databases for use in standardization at the following addresses:

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

3.1

air change rate

air flow rate to a space, expressed as volume per unit time, divided by the volume of the space in consistent units

Note 1 to entry: Air change rate is often expressed as air changes per hour.

Note 2 to entry: This term is used where there is active ventilation [see also *ventilation rate* (3.40)].

[SOURCE: ISO 16814:2008, 3.5]

3.2

thermal stratification

tendency of heated air to rise and to arrange itself in layers with the warmest air at the top