INTERNATIONAL ISO

Second edition
2021-10

Glass in building — Electrochromic glazings — Accelerated ageing test and requirements

Verre dans la construction — Vitrages électrochromes — Essai de vieillissement accéléré et exigences

Reference number
ISO 18543:2021(E)

COPYRIGHT PROTECTED DOCUMENT

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

Contents

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).

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 160, *Glass in building*, Subcommittee SC 1, *Product considerations*.

This second edition cancels and replaces the first edition (ISO 18543:2017), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the document has been restructured;

— the acceptance criteria for the two classes has been revised;

— fast switching products have been taken into account;

— the concept of photopic transmittance ratio has been abandoned in favour of the one of 85 % of the dynamic range;

— other types of lamps have been allowed provided that they simulate correctly the solar irradiation.

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

Electrochromic glazings perform several important functions in a building envelope, including

— minimizing the solar energy heat gain,

— providing for passive solar energy gain,

— controlling a variable visual connection with the outside world,

— enhancing thermal comfort (controlling heat gain), energy efficiency performance, illumination, and glare control, and

— providing for architectural expression.

Therefore, it is important to understand the relative serviceability of these glazings.

This document is intended to provide a means for evaluating the durability of electrochromic glazings.

The test procedures covered in this document includes:

a) rapid but realistic cycling between high and low light transmission states;

b) environmental parameters that are typically used in weatherability tests such as simulated solar exposure and high temperature, which are realistic for the intended use of electrochromic glazings.