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Ceramic tiles — Installation

Part 3: Installation of large format porcelain tiles and panels by mechanical means onto a supporting structure

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National foreword

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Foreword

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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 189, *Ceramic tile*.

A list of all parts in the ISO 17870 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.

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Ceramic tiles — Installation —

Part 3: Installation of large format porcelain tiles and panels by mechanical means onto a supporting structure

1 Scope

Classes A1a and B1a porcelain (as defined in ISO 13006) are now manufactured in much larger formats than previously available and are increasingly being used as an external cladding material for buildings.

Classes A1b, A11a, and AIIb extruded ceramics (as defined in ISO 13006) are not covered by the scope of this document. These materials, when specifically developed for external façade applications, have been used extensively for many years and established methodologies already exist.

Large format porcelain tiles or panels are generally considered to be too large to be used externally on high buildings when installed by conventional adhesive fixing methods (ISO/TR 17870-1 and ISO/TR 17870-2); therefore, mechanical fixings are used.

As there are currently no published standards or guidelines for these products to be installed in this way, this document provides generic information on some typical types of mechanical fixing systems in use together with positive and negative wind load factors and typical testing procedures that can be used for evaluating anchor pull-out or edge fracture resistance. Also, because the current impact resistance test method for ceramics tiles (ISO 10545-5) relates only to traditional (bedded) installed tiling – which measures the coefficient of restitution – it is not an appropriate test for unbedded (unsupported) tiles, so alternative test methods (ISO 7892) are referred to for measuring hard-body and soft-body impact resistance.

Guidance is provided regarding typical impact zones of vulnerability to hard and soft body impact and reference is made to anti-shatter mesh backings, which are sometimes applied to porcelain cladding tiles and panels.

Installation systems which rely upon the chemical adhesion of metal brackets, straps or framing, etc. onto or into large format porcelain tiles or panels in conjunction with, or instead of, mechanical attachment, are not included in this document.

The detailed principles for the design and construction of the substructure of ventilated façades, also known as rain screens, used on the outside of buildings, are well documented in other national and international standards and are not therefore, included in this document, other than in general reference.

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

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