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NSAI Standards

Irish Standard
I.S. EN 17187:2020

Conservation of Cultural Heritage - Characterization of mortars used in cultural heritage

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I.S. EN 17187:2020

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National Foreword

I.S. EN 17187:2020 is the adopted Irish version of the European Document EN 17187:2020, Conservation of Cultural Heritage - Characterization of mortars used in cultural heritage

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17187

April 2020

ICS 97.195

English Version

Conservation of Cultural Heritage - Characterization of mortars used in cultural heritage

Conservation du patrimoine culturel - Caractérisation des mortiers utilisés dans le patrimoine culturel

Erhaltung des kulturellen Erbes - Charakterisierung von in kulturellem Erbe verwendeten Mörteln

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Contents

Page

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European foreword

This document (EN 17187:2020) has been prepared by Technical Committee CEN/TC 346 “Conservation of Cultural Heritage”, the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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Introduction

The characterization of mortars used in cultural heritage is an essential step to formulate a conservation plan, in order to decide on appropriate remedial interventions, to achieve better working practices, and technologies for restoration interventions including mortar replacement, reinstatement, reintegration and stone repair. Many different types of mortars have been used in cultural heritage structures and objects (for example hydraulic mortars, air lime mortars, pozzolanic, natural cements) and, therefore, it is important that the typology of mortars is described and the characterization is achieved through a consistent and uniform methodology. It should be remembered that mortar characterization can also be carried out as part of the historical/documentation process.

This document provides cultural heritage professionals with a guidance for a common methodology for the characterization of mortars used in cultural heritage. This information is used to define mineralogical, petrographic, physical, chemical and mechanical properties of these materials.

The characterization of mortar used in cultural heritage is expected to be carried out and interpreted by professionals experienced in the field of materials or conservation science and/or conservation/ restoration.

Where possible, existing standards are referred to and guidance provided where different specimens are required and additional methods can be used. The characterization methods described are generally destructive, however, non-destructive (NDT) methods are always preferable to destructive methods if they can provide the required information.

Methods used for mortar analysis can vary depending upon the objectives of the work. All investigations and analyses will be proportional to the significance of the building or artefact being investigated, its condition and the likely extent or type of intervention.

In this document the term mortar is defined as in EN 16572, that is “material traditionally composed of one or more (usually inorganic) binders, aggregates, water, possible additives and admixtures combined to form a paste used in masonry for bedding, jointing and bonding, and for surface finishing (plastering and rendering) of masonry units, which subsequently sets to form a stiff material”.

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1 Scope

This document specifies a methodology for the characterization of mortars by using the most appropriate analytical techniques on samples taken from cultural heritage structures and objects.

This document contains guidelines for the selection of methods to determine mineralogical, textural, physical, chemical and mechanical properties of mortars used in cultural heritage structures and objects. This information is used to define mortar typology and to evaluate the mortar condition with respect to its conservation as well as for understanding of the ongoing deterioration processes.

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.

EN 1015-12, *Methods of test for mortar for masonry - Part 12: Determination of adhesive strength of hardened rendering and plastering mortars on substrates*

EN 1936, *Natural stone test methods - Determination of real density and apparent density, and of total and open porosity*

EN 13755, *Natural stone test methods - Determination of water absorption at atmospheric pressure*

EN 15801, *Conservation of cultural property - Test methods - Determination of water absorption by capillarity*

EN 15803, *Conservation of cultural property - Test methods - Determination of water vapour permeability (δp)*

EN 15886, *Conservation of cultural property - Test methods - Colour measurement of surfaces*

EN 15898, *Conservation of cultural heritage - Main general terms and definitions*

EN 16085, *Conservation of Cultural property - Methodology for sampling from materials of cultural property - General rules*

EN 16572, *Conservation of cultural heritage - Glossary of technical terms concerning mortars for masonry, renders and plasters used in cultural heritage*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15898, EN 16085 and EN 16572 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/ui

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