Irish Standard
I.S. EN 17138:2018

Conservation of Cultural Heritage - Methods and materials for cleaning porous inorganic materials

I.S. EN 17138:2018

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 17138:2018 is the adopted Irish version of the European Document EN 17138:2018, Conservation of Cultural Heritage - Methods and materials for cleaning porous inorganic materials

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17138

December 2018

ICS 97.195

English Version

Conservation of Cultural Heritage - Methods and materials for cleaning porous inorganic materials

Conservation du patrimoine culturel - Méthodes et produits de nettoyage des matériaux inorganiques poreux

Erhaltung des kulturellen Erbes - Verfahren und Materialien für die Reinigung von porösen anorganischen Materialien

This European Standard was approved by CEN on 29 July 2018.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

European foreword

This document (EN 17138:2018) 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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It is recommended to read the relevant safety data sheets on the occupational and health hazards of the main chemical constituents of the products before using them. It refers only to technical suitability and this not absolves the user from legal obligations relating to health and safety at any stage. The manufacturer should also provide safety data sheets.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Cleaning is the removal of unwanted material from an object surface or near-surface.

The surface of an object is cleaned either for conservation and/or maintenance or to improve legibility.

A cultural heritage object is irreplaceable and while cleaning is undertaken for object conservation; its effects are irreversible. Failure to consider and address the technical problems which can arise during cleaning may cause irrevocable damage to an object. Cultural Heritage should be cleaned using the least disruptive/invasive procedure possible in order to best preserve it.

Furthermore, an inadequate or inappropriate intervention may cause, or increase, future deterioration processes or eliminate materials which are undocumented or which would allow a greater understanding of the history of the object.

Materials to be removed may include alteration products of the constituent materials, air particulate pollutants, dust, salt efflorescence; partially or totally soluble encrustations; layers of intentionally applied materials that are either inappropriate or no longer functional; biofilms; lichens; mosses.

Cleaning, as a part of the conservation plan, is based on the definition of which materials are to be removed and which materials to be preserved. In order to fulfil this task, the appropriate balance should be found among the following requirements: selectivity, effectiveness and controllability.

Before cleaning is carried out, it should be evaluated in terms of effectiveness and potential damage (harmfulness) by the use of trial areas. Evaluation should be continued during the cleaning operations and over the longer terms to monitor the effects of cleaning.

This framework document describes the cleaning systems providing a list of technical specifications useful for their selection, evaluation and optimization to allow proper and systematic evaluation.

Cleaning methods will be described according to a common structure:

a) description;

b) technical specifications (factors that define the system to be used);

c) variables (factors that end users can adjust, control or change to optimize the process according to surface condition, the type and thickness of material to be removed, etc.);

d) advantages;

e) disadvantages;

f) examples of applications (indicative situations in which the cleaning methods have been found to be effective).

This standard presents the methodology and requirements for cleaning particularly applicable to natural stone, ceramics, plaster, mortars and concrete. The presence of sensitive components, which may include certain stone lithologies or paint or other decorations on porous inorganic surfaces, for example, will preclude the use of some of the methods outlined in this document. The example applications given in the standard are indicative of practice and are not exhaustive.

The standard is intended to serve as guidance for all conservation professionals (architects, surveyors, conservators/restorers, conservation scientists, curators, etc.) involved in the conservation of objects. The standard is intended as a reference for organizations including government bodies and cultural heritage agencies, with a duty to preserve items of cultural heritage.

1 Scope

This document provides the guidelines for the choice of the operational cleaning technical specifications in order to optimize the cleaning operation. The fundamental requirements for each specific cleaning method are given as to adapt cleaning works for single specific cases.

The objective of cleaning may consist of removal of any combination of unwanted materials, such as: degraded protective coatings, surface or near-surface materials, which constitute a present or future threat to conservation, materials which prevent legibility of the object or are disfiguring by nature, deposits which are judged to be incompatible to the historical nature of the object.

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 http://www.iso.org/obp

3.1
porous inorganic material
material including natural stones, e.g. sandstone, limestone, marble, granite, gneiss, gypsum as well as artificial materials, such as mortar, plaster, brick, ceramics, concrete and others

[SOURCE: EN 15801:2009, 3.1, modified]

3.2
object
single manifestation of tangible cultural heritage

Note 1 to entry: The term object is used in this standard for cultural heritage, both immovable and movable. In specific professional contexts, other terms are used: e.g. artefact, cultural property, item, ensemble, site, building fabric.

[SOURCE: EN 15898:2011, 3.1.3]

3.3
specimen
part considered representative of the material constituting an object

Note 1 to entry: The specimen can have different origins and can be taken from:

— materials similar to those constituting the object under study (e.g. stone quarries);

— specifically prepared comparative materials e.g. reference materials;

— available materials from the object.

Note 2 to entry: The number and dimension of the specimens can be different depending on constraints encountered in sampling the required amount of material.

[SOURCE: EN 16302:2013, 3.3]