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Irish Standard
I.S. EN 16322:2013

Conservation of Cultural Heritage - Test methods - Determination of drying properties

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NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16322

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English Version

Conservation of Cultural Heritage - Test methods - Determination of drying properties

Conservation du patrimoine culturel - Méthodes d'essai - Détermination des propriétés de séchage

Erhaltung des kulturellen Erbes - Prüfverfahren - Trocknungsverhalten

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Foreword

This document (EN 16322:2013) 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of an identical text or by endorsement, at the latest by April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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Introduction

This test method can be applied if it does not change the value of the cultural property according to the ethical code of conservation practice.

The drying properties of materials can be calculated from a curve that indicates the weight loss of the mass of water inside the sample, as a function of time, during a drying experiment. Usually the drying of specimens saturated with water consists of two phases.

The first drying phase is characterised by transport of liquid water to the surface followed by evaporation. The surface remains wet allowing evaporation at a constant rate, as water moves to the surface fast enough to compensate for the losses due to evaporation. The evaporation at the surface is determined to a large extent by the test boundary conditions. These are temperature, relative humidity and the flow velocity of the ambient air. The slope of the drying curve during the first drying phase therefore reflects these conditions.

The second drying phase starts when the amount of water brought to the surface becomes too small to keep the surface wetted and the rate of evaporation decreases. Transport of liquid water to the surface is no longer possible and only the less efficient vapour diffusion mechanism remains available.

Some materials, e.g. adobe or sandstones containing clay, do not dry in this typical two-phase drying curve. For example, in the case of material treated with water repellent, the first drying phase does not exist.

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