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Paper and board — Accelerated ageing —

Part 6: Exposure to atmospheric pollution (nitrogen dioxide)

Papier et carton — Vieillissement accéléré —

Partie 6: Exposition à la pollution atmosphérique (dioxyde d'azote)

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 5630-6 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 2, *Test methods and quality specifications for paper and board*.

ISO 5630 consists of the following parts, under the general title *Paper and board — Accelerated ageing*:

— *Part 1: Dry heat treatment at 105 °C*

— *Part 3: Moist heat treatment at 80 °C and 65 % relative humidity*

— *Part 4: Dry heat treatment at 120 or 150 °C*

— *Part 5: Exposure to elevated temperature at 100 °C*

— *Part 6: Exposure to atmospheric pollution (nitrogen dioxide)*

NOTE Part 2: *Moist heat treatment at 90 °C and 25 % relative humidity* was withdrawn in 1992.

Introduction

Exposure of paper or board to a hostile environment, such as some type of radiation, elevated temperature or chemical pollutant, over a period of hours, can provide information concerning the natural changes that can occur in the material over a period of years.

This test method for accelerated ageing by exposure of paper to an elevated concentration of nitrogen dioxide is based on the method developed by ASTM [1] following an extensive research program. In this program, 15 printing and writing papers were tested, representing a wide variety of paper types (acid and alkaline, lignin-containing and lignin-free, and those with and without an alkaline reserve such as calcium carbonate). This method proved to be the one most relevant to judge the effects of atmospheric pollutant gases on the long-term mechanical strength and optical stability of such papers. To get a full understanding of the stability of the paper to long-term natural ageing effects, a combination of test methods for accelerated ageing is used.