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English Version

**Outdoor furniture - Seating and tables for camping, domestic  
and contract use - Part 4: Requirements and test methods for  
durability under the influence of climatic conditions**

Mobiklier d'extérieur - Sièges et tables à usages  
domestique, collectif et de camping - Partie 4 : Exigences  
et méthodes d'essai pour la durabilité sous l'influence des  
conditions climatiques

Außenmöbel - Sitzmöbel und Tische für den Camping-,  
Wohn- und Objektbereich - Teil 4: Anforderungen und  
Prüfverfahren für die Dauerhaltbarkeit unter dem Einfluss  
von Klimabedingungen

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## Foreword

This Technical Report (CEN/TR 581-4:2005) has been prepared by Technical Committee CEN/TC 207 "Furniture", the secretariat of which is held by UNI.

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## Introduction

This standard is part of a series of standards dealing with various aspects of outdoor furniture. Preceding parts of that series are dealing exclusively with safety. This part covers the aspects of durability, i.e. the ability of outdoor furniture to withstand long-term mechanical damage and damage arising from the weather. As far as the weather has an impact not only to the appearance (surface finish) but also to safety features, there is sufficient evidence to deem that the interior load bearing structure of plastic outdoor furniture remains sufficiently strong as long as the outer surface shows no significant signs of cracks caused by UV- radiation.

An undamaged surface is additionally an important durability characteristic in itself. Due to different materials and surface treatments the ability of outdoor furniture to withstand damages caused by natural weather differs. Therefore this standard provides a range of "weatherability" levels in order to classify the surface finish regarding its durability to weather. That characteristic is named in the following text as "weatherability". A standardised information label is foreseen in that context in order to inform the consumer about structural durability, recommended application and the degree of "weatherability". The level to be classified is voluntary, it aims to allow informed choice for the customer when buying outdoor furniture.

Levels of structural durability of an outdoor furniture are set by opening the three areas applications respectively levels of strength as set by ENV 581-2 and EN 581-3 and making them a tool to declare enhanced durability. To meet the higher strength requirements of a following application means to prolong durability. The durability level to be chosen is voluntary and thus matter of declaration. The three applications: CAMPING / DOMESTIC / CONTRACT include consequently three levels of durability. Therefore the group of experts felt, that the three levels of strength respectively fields of application constitute automatically three levels of structural durability.

The issue of resistance to UV-radiation, i.e. of long-term strength and safety, is taken into account in this part of the standard (5.2) by deriving structural strength and safety from an undamaged surface after artificial weathering.

"Weatherability" for the purpose of this standard is related to the ability of outdoor furniture to maintain its original aesthetic look respectively appearance for a prolonged time.

In accordance with usual practice in the outdoor furniture market three performance levels for "weatherability" of surface finish were specified in order to make the mentioned ability assessable. An additional "zero level" indicates the case where no "weatherability" in terms of unchanged appearance is claimed. In that case the influences of weather may lead to a rapid change in the surface finish of the outdoor furniture. Subjectively and individually that need is not to be considered as a deficiency. The declaration of the "zero level" fact was felt to be a question of fair practice and the avoidance of misunderstandings between supplier and customer that might otherwise cause complaints. Additionally the informative label together with the instructions for use give advice how through care and maintenance the durability of the outdoor furniture can be prolonged.

Outdoor furniture made from wood which is inherently weather proof (as e.g. teak wood) and where the change in appearance due to weather is rather seen as a typical and even desired "patina" than a deficiency are intentionally exempt from the weather testing. Consumer information in this case means: Declaration of wood within the product information label (see Clause 8)

Due to the fact that natural weather does not consider the diversity of materials from which the piece of furniture might be made, the "weatherability" test follows a "general approach" submitting any outdoor furniture to the same conditions of exposure. As the existing test facilities for artificial weathering do not provide the possibility to check an entire piece of furniture, the group follows the traditional way to test specimens. For the need to get test results in an adequate time a natural weathering test was not specified. Furthermore the document does not include requirements for chemical or mechanical surface stresses as they may arise from food stuff, cleaning agents, scratching, abrasion, smouldering cigarettes etc.

## 1 Scope

This part of EN 581 specifies requirements and test methods for the determination of structural and surface finish durability of outdoor furniture for camping, domestic and contract use for adults without regard of materials, design/construction or manufacturing process.

Additionally this CEN Report specifies requirements covering the safety hazard which arises from the effect of weathering (in particular UV) on plastic materials.

For the presentation of the various durability levels, a consumer information label is specified.

This CEN Report does not apply to:

- specifications on surface resistance against chemical and mechanical stresses
- outdoor furniture for severe contract use where higher requirements may be necessary
- permanently fixed outdoor furniture, street furniture
- removable upholstery and coverings
- spectator facilities
- severe contract use

## 2 Normative references

The following referenced documents are indispensable for the application 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 581-1, *Outdoor furniture - Seating and tables for camping, domestic and contract use — Part 1: General safety requirements.*

ENV 581-2, *Outdoor furniture - Seating and tables for camping, domestic and contract use — Part 2: Mechanical safety requirements and test methods for sampling.*

EN 581-3, *Outdoor furniture - Seating and tables for camping, domestic and contract use — Part 3: Mechanical safety requirements and test methods for tables.*

EN ISO 544, *Welding consumables -- Technical delivery conditions for welding filler materials -- Type of product, dimensions, tolerances and markings (ISO 544:2003)*

EN ISO 4628-2, *Paints and varnishes -- Evaluation of degradation of coatings -- Designation of quantity and size of defects, and of intensity of uniform changes in appearance -- Part 2: Assessment of degree of blistering (ISO 4628-2:2003)*

EN ISO 4628-3, *Paints and varnishes -- Evaluation of degradation of coatings -- Designation of quantity and size of defects, and of intensity of uniform changes in appearance -- Part 3: Assessment of degree of rusting (ISO 4628-3:2003)*

EN ISO 4628-4, *Paints and varnishes -- Evaluation of degradation of coatings -- Designation of quantity and size of defects, and of intensity of uniform changes in appearance -- Part 4: Assessment of degree of cracking (ISO 4628-4:2003)*

EN ISO 4628-5, *Paints and varnishes -- Evaluation of degradation of coatings -- Designation of quantity and size of defects, and of intensity of uniform changes in appearance -- Part 5: Assessment of degree of flaking (ISO 4628-5:2003)*

EN ISO 4892-1, *Plastics -- Methods of exposure to laboratory light sources -- Part 1: General guidance (ISO 4892-1:1999)*

EN ISO 4892-2, *Plastics -- Methods of exposure to laboratory light sources -- Part 2: Xenon-arc sources (ISO 4892-2:1994)*

### 3 Terms and definitions

For the purposes of this Technical Report, the following terms and definitions apply.

#### 3.1

##### **durability**

ability of the entire outdoor furniture to last for a shorter or longer period of use in all its features

#### 3.2

##### **structural durability**

ability to withstand stresses arising from mechanical forces and loads for shorter or longer periods of use

#### 3.3

##### **weatherability**

ability of a material or surface treatment to withstand stresses arising from weather for shorter or longer periods of use

#### 3.4

##### **severe contract use**

extreme stresses beyond the applications as defined in EN 581-1

#### 3.5

##### **levels with regard to structural durability**

structural durability level "CAMPING": outdoor furniture (seat or table) meets all requirements of ENV 581-2 or EN 581 -3 for the application "CAMPING"

structural durability level "DOMESTIC" : outdoor furniture (seat or table) meets all requirements of ENV 581-2 or EN 581- 3 for the application "DOMESTIC"

structural durability level "CONTRACT" : outdoor furniture (seat or table) meets all requirements of ENV 581-2 or EN 581-3 for the application "CONTRACT"

#### 3.6

##### **levels with regard to weatherability of surface finish**

for the purpose of this CEN Report there are three levels of weatherability. The levels are defined as follows:

One pictogram	surface finish meets the lowest requirements of this CEN Report with regard to artificial weathering (one share of weatherability)
Two pictograms	surface finish meets the medium requirements of this CEN Report with regard to artificial weathering (two shares of weatherability)
Three pictograms	surface finish meets the highest requirements of this CEN Report with regard to artificial weathering (three shares of weatherability)