

**Haridusasutuste kirjutustahvliid. Ergonoomilised, tehnilised ja ohutusnõuded ning katsemeetodid**

Writing board for educational institutions - Ergonomic, technical and safety requirements and their test methods

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14434:2010 sisaldab Euroopa standardi EN 14434:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.03.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 20.01.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 14434:2010 consists of the English text of the European standard EN 14434:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 20.01.2010.

The standard is available from Estonian standardisation organisation.

ICS 03.180, 13.180, 97.140

### Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

### Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:  
Aru str 10 Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); Phone: +372 605 5050; E-mail: [info@evs.ee](mailto:info@evs.ee)

English Version

## Writing boards for educational institutions - Ergonomic, technical and safety requirements and their test methods

Tableaux pour établissements d'enseignement - Exigences  
ergonomiques, techniques et de sécurité et méthodes  
d'essai correspondantes

Wandtafeln für Bildungseinrichtungen - Ergonomische,  
technische und sicherheitstechnische Anforderungen und  
Prüfverfahren

This European Standard was approved by CEN on 12 December 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

Foreword.....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 General test conditions .....	8
4.1 Preliminary preparation .....	8
4.2 Tolerances .....	8
4.3 Test installation.....	8
5 Test equipment .....	9
6 General safety requirements .....	9
6.1 All boards .....	9
6.2 Stability of mobile boards.....	9
7 Surface tests and requirements for whiteboards.....	10
7.1 General.....	10
7.2 Ability to write and erase .....	10
7.2.1 Testing .....	10
7.2.2 Method of marking the surface .....	10
7.2.3 Requirements .....	11
7.3 Scratch test and requirements .....	11
7.3.1 Testing .....	11
7.3.2 Requirements .....	11
7.4 Staining tests and requirements .....	12
7.4.1 Testing .....	12
7.4.2 Requirements for each staining liquid .....	12
7.5 Colour degradation test and requirements .....	12
7.5.1 Testing .....	12
7.5.2 Requirements .....	12
8 Surface tests and requirements for chalkboards.....	12
8.1 General.....	12
8.2 Ability to write on an unused chalkboard sample.....	13
8.2.1 Testing .....	13
8.2.2 Method of marking the surface .....	13
8.2.3 Requirement.....	13
8.3 Ability to write on an abraded chalkboard sample.....	13
8.3.1 Testing .....	13
8.3.2 Method of marking the surface .....	14
8.3.3 Requirements .....	14
8.4 Scratch test and requirements .....	15
8.4.1 Testing .....	15
8.4.2 Requirements .....	15
8.5 Staining tests and requirements .....	15
8.5.1 Testing .....	15
8.5.2 Requirements for each staining liquid .....	15
8.6 Colour degradation test and requirements .....	15
8.6.1 Testing .....	15
8.6.2 Requirements .....	16
9 Structural tests and requirements .....	16

<b>9.1</b>	<b>Vertical static load tests and requirements .....</b>	<b>16</b>
<b>9.1.1</b>	<b>Vertical downwards static load for rail based systems and horizontally sliding boards .....</b>	<b>16</b>
<b>9.1.2</b>	<b>Vertical downwards static load for winged boards and pivoting boards .....</b>	<b>16</b>
<b>9.1.3</b>	<b>Vertical downwards static load for all prominent parts .....</b>	<b>16</b>
<b>9.1.4</b>	<b>Vertical upwards static load .....</b>	<b>17</b>
<b>9.2</b>	<b>Durability of moving elements .....</b>	<b>17</b>
<b>9.2.1</b>	<b>Rail based systems .....</b>	<b>17</b>
<b>9.2.2</b>	<b>Boards with rotating parts .....</b>	<b>17</b>
<b>9.2.3</b>	<b>Sliding boards with transmission elements .....</b>	<b>17</b>
<b>9.2.4</b>	<b>Power operated sliding boards .....</b>	<b>18</b>
<b>9.3</b>	<b>Test of rigidity .....</b>	<b>18</b>
<b>9.4</b>	<b>Test of stops .....</b>	<b>19</b>
<b>9.5</b>	<b>Surface deflection .....</b>	<b>19</b>
<b>10</b>	<b>Ergonomic requirements .....</b>	<b>20</b>
<b>10.1</b>	<b>Position of controls and handles .....</b>	<b>20</b>
<b>10.2</b>	<b>Operating forces .....</b>	<b>20</b>
<b>10.3</b>	<b>Requirements for moving forces .....</b>	<b>20</b>
<b>11</b>	<b>Test report .....</b>	<b>21</b>
<b>12</b>	<b>Installation instructions .....</b>	<b>21</b>
<b>13</b>	<b>Product information .....</b>	<b>21</b>
<b>Annex A</b>	<b>(normative) Assessment scale for the ability to write - Five levels chalk scale .....</b>	<b>23</b>
<b>Annex B</b>	<b>(informative) Terminology .....</b>	<b>24</b>
<b>Annex C</b>	<b>(informative) Significant technical changes in revised edition of this standard .....</b>	<b>31</b>

## Foreword

This document (EN 14434:2010) has been prepared by Technical Committee CEN/TC 207 "Furniture", 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 July 2010, and conflicting national standards shall be withdrawn at the latest by July 2010.

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

This document supersedes EN 14434:2004.

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

## 1 Scope

This European Standard specifies ergonomic, technical and safety requirements for wall mounted and free-standing writing boards for use in rooms for educational and training purposes, e.g. classrooms, lecture theatres for schools, universities, etc.

It is intended to prevent serious injury through normal functional use, as well as misuse that might reasonably be expected to occur.

This document applies to units after installation. Safety depending on the structure of the building is not included, e.g. the strength of wall mounted boards includes only the board and its parts. The wall and the wall attachment are not included.

Requirements concerning electrical safety are not included.

Annex A (normative) includes an assessment scale for the ability to write and erase.

Annex B (informative) includes terminology for display writing boards.

Annex C (informative) includes significant technical differences between this document and EN 14434:2004.

## 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 438-2:2005, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called Laminates) — Part 2: Determination of properties*

EN 1023-3, *Office furniture — Screens — Part 3: Test methods*

## 3 Terms and definitions

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

### 3.1

#### **board attachment**

element by which the board is attached to the rail

NOTE See Annex B, Figure B.20.

### 3.2

#### **chalkboard**

writing board with a writing surface to be used for chalk

### 3.3

#### **fixed board**

board or assembly of boards fixed by various means

NOTE See Annex B, Figures B.1, B.2, B.3 and B.4.

### 3.4

#### **fixing element**

joint by which the rail is mounted to the wall