

**Plastics - Plasticized poly(vinyl chloride) (PVC-P)
membranes for inground swimming pools - Part 1:
Homogenous membranes of nominal thickness equal to
or greater than 0,75 mm**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 15836-1:2010 sisaldab Euroopa standardi EN 15836-1:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 30.09.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 23.06.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 15836-1:2010 consists of the English text of the European standard EN 15836-1:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2010 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 23.06.2010.

The standard is available from Estonian standardisation organisation.

ICS 83.140.10

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; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute 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; Phone: 605 5050; E-mail: info@evs.ee

ICS 83.140.10

English Version

Plastics - Plasticized poly(vinyl chloride) (PVC-P) membranes
for inground swimming pools - Part 1: Homogenous membranes
of nominal thickness equal to or greater than 0,75 mm

Plastiques - Membranes en poly(chlorure de vinyle) plastifié
(PVC-P) pour piscines enterrées - Partie 1: Membranes
homogènes d'épaisseur nominale supérieure ou égale à
0,75 mm

Kunststoffe - Kunststoffbahnen aus weichmacherhaltigem
Polyvinylchlorid (PVC-P) für erdverlegte Schwimmbäder -
Teil 1: Homogene Bahnen mit einer Nenndicke von
mindestens 0,75 mm

This European Standard was approved by CEN on 19 May 2010.

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.....	3
1 Scope	4
2 Normative references	4
3 Terms, definitions, symbols and abbreviations	5
3.1 Terms and definitions	5
3.2 Symbols	5
3.3 Abbreviations	5
4 Sampling and conditioning	6
4.1 Sampling	6
4.2 Conditioning of test pieces	6
5 PVC-P compound	6
5.1 Characteristics of the compound	6
5.2 Heavy metals and other dangerous substances	6
5.3 Environmental aspects	6
6 Visual characteristics	7
6.1 Appearance	7
6.2 Colour (plain coloured membranes)	7
6.3 Abrasion resistance (printed and/or coated membranes)	7
7 Physico-chemical characteristic	8
8 Dimensional characteristics	8
9 Mechanical characteristics	9
10 Characteristics for durability	9
11 Storage conditions	10
12 Installation, refurbishment, exploitation and maintenance	10
13 Designation and marking	11
13.1 Designation	11
13.2 Marking	11
Annex A (normative) Determination of the contents of CaCO₃, heavy metals and other elements	12
Annex B (normative) Assessment of chlorine resistance	13
B.1 Principle	13
B.2 Test liquid	13
B.3 Apparatus	13
B.4 Test pieces	13
B.5 Procedure	13
B.6 Test report	14
Annex C (normative) Assessment of the resistance to staining agents	15
C.1 Principle	15
C.2 Staining agents	15
C.3 Apparatus	15
C.4 Test specimens	15
C.5 Procedure	15
C.6 Expression of results	16
C.7 Test report	16
Bibliography	17

Foreword

This document (EN 15836-1:2010) has been prepared by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by NBN.

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 December 2010, and conflicting national standards shall be withdrawn at the latest by December 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.

EN 15836, *Plastics — Plasticized poly(vinyl chloride) (PVC-P) membranes for inground swimming pools*, consists of the following parts:

- *Part 1: Homogenous membranes of nominal thickness equal to or greater than 0,75 mm* [this standard]
- *Part 2: Reinforced membranes of nominal thickness equal to or greater than 1,5 mm*

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.

This document is a preview generated by EVS

1 Scope

This European Standard specifies the visual, dimensional, mechanical and durability characteristics of plasticized poly(vinyl chloride) (PVC-P) homogenous membranes of nominal thickness greater than or equal to 0,75 mm for use as liners for inground swimming pools. It also specifies the characteristics of the composition of the PVC-P used to produce the membranes.

It applies specifically to homogenous membranes intended for use in swimming pools where the water temperature is less than or equal to 28 °C. If the membrane manufacturer permits a temperature of water continuously maintained above 28 °C, this document also applies.

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 495-5, *Flexible sheets for waterproofing — Determination of foldability at low temperature — Part 5: Plastic and rubber sheets for roof waterproofing*

EN 1107-2, *Flexible sheets for waterproofing — Determination of dimensional stability — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 1848-2, *Flexible sheets for waterproofing — Determination of length, width, straightness and flatness — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 1849-2, *Flexible sheets for waterproofing — Determination of thickness and mass per unit area — Part 2: Plastic and rubber sheets*

EN 1850-2, *Flexible sheets for waterproofing — Determination of visible defects — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 12310-2, *Flexible sheets for waterproofing — Determination of resistance to tearing — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 12316-2, *Flexible sheets for waterproofing — Determination of peel resistance of joints — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 12317-2, *Flexible sheets for waterproofing — Determination of shear resistance of joints — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 20105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour (ISO 105-A02:1993)*

EN ISO 62:2008, *Plastics — Determination of water absorption (ISO 62:2008)*

EN ISO 175:2000, *Plastics — Methods of test for the determination of the effects of immersion in liquid chemicals (ISO 175:1999)*

EN ISO 291, *Plastics — Standard atmospheres for conditioning and testing (ISO 291:2008)*

EN ISO 527-1, *Plastics — Determination of tensile properties — Part 1: General principles (ISO 527-1:1993 including Corr 1:1994)*

EN ISO 527-3, *Plastics — Determination of tensile properties — Part 3: Test conditions for films and sheets (ISO 527-3:1995)*

EN ISO 846:1997, *Plastics — Evaluation of the action of microorganisms (ISO 846:1997)*

EN ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2004)*

EN ISO 4892-2:2006, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2006)*

EN ISO 5470-1:1999, *Rubber- or plastics-coated fabrics — Determination of abrasion resistance — Part 1: Taber abrader (ISO 5470-1:1999)*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

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

3.1.1

homogenous membrane

sheet made of calendered or extruded, waterproof and gas-pervious, plasticized poly(vinyl chloride) (PVC-P), packaged in rolls, for use in the manufacture of swimming pool liners

3.1.2

liner

removable independent pocket, factory-made from waterproof, flexible, expandable, plasticized poly(vinyl chloride) (PVC-P) membranes

NOTE The liner contributes to the leaktightness of a swimming pool in the same way as the parts to be sealed and the pipework.

3.1.3

inground swimming pool

permanent installation containing treated water for water activities totally or partially realized under the ground level with a water depth $\geq 0,85$ m or a water volume ≥ 8 m³

3.2 Symbols

E_n thickness of the membrane declared by the manufacturer, in millimetres

l_n width declared by the manufacturer, in metres or millimetres

L_n length of the roll declared by the manufacturer, in metres

ρ_n mass density declared by the manufacturer, in grams per cubic centimetre

3.3 Abbreviations

CaCO₃ calcium carbonate

PVC-P plasticized poly(vinyl chloride)