

This document is a review generated by EVS

Domestic spas/whirlpool spas/hot tubs - Safety requirements and test methods

## ESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 17125:2018 sisaldab Euroopa standardi EN 17125:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 17125:2018 consists of the English text of the European standard EN 17125:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.12.2018.	Date of Availability of the European standard is 12.12.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 91.140.70

Standardite reproduutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

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

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute 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 a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 17125

December 2018

ICS 91.140.70

English Version

Domestic spas/whirlpool spas/hot tubs - Safety  
requirements and test methods

Spas domestiques et les spas - Les exigences de  
sécurité et méthodes d'essai

Warmsprudelbecken und Whirlpools für private  
Nutzung - Sicherheitstechnische Anforderungen und  
Prüfverfahren

This European Standard was approved by CEN on 3 September 2018.

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-CENELEC 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-CENELEC 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

## Contents

	Page
<b>European foreword.....</b>	<b>5</b>
<b>Introduction .....</b>	<b>6</b>
<b>1 Scope.....</b>	<b>7</b>
<b>2 Normative references.....</b>	<b>7</b>
<b>3 Terms and definitions .....</b>	<b>8</b>
<b>4 Requirements and test methods.....</b>	<b>12</b>
<b>4.1 Water leakage.....</b>	<b>12</b>
<b>4.2 Minimum performance requirements for structural materials .....</b>	<b>13</b>
<b>4.2.1 General.....</b>	<b>13</b>
<b>4.2.2 Specific requirements and testing for corrosion resistance .....</b>	<b>14</b>
<b>4.2.3 Osmosis resistance of composites and polymers .....</b>	<b>15</b>
<b>4.2.4 Wood.....</b>	<b>15</b>
<b>4.3 Shell Structures.....</b>	<b>15</b>
<b>4.4 Structure capacity.....</b>	<b>18</b>
<b>4.5 Accessibility .....</b>	<b>18</b>
<b>4.5.1 General.....</b>	<b>18</b>
<b>4.5.2 Safety Securing Mechanisms .....</b>	<b>18</b>
<b>4.5.3 Securable Safety Covers .....</b>	<b>19</b>
<b>4.5.4 Steps and ladders .....</b>	<b>19</b>
<b>4.5.5 Criteria for requiring a safety protection device.....</b>	<b>19</b>
<b>4.6 Means of access .....</b>	<b>20</b>
<b>4.6.1 General.....</b>	<b>20</b>
<b>4.6.2 Slip resistance .....</b>	<b>20</b>
<b>4.6.3 Ladders .....</b>	<b>21</b>
<b>4.6.4 Stairs .....</b>	<b>21</b>
<b>4.6.5 Load-bearing test .....</b>	<b>23</b>
<b>4.7 Permissible openings .....</b>	<b>23</b>
<b>4.8 Crushing and entrapment hazards .....</b>	<b>23</b>
<b>4.9 Filtration and circulation .....</b>	<b>24</b>
<b>4.9.1 General.....</b>	<b>24</b>
<b>4.9.2 Spas that do not rely on circulation and filtration .....</b>	<b>25</b>
<b>4.10 Pipe work .....</b>	<b>25</b>
<b>4.11 Suction system.....</b>	<b>26</b>
<b>4.12 Water treatment and chemical standards .....</b>	<b>26</b>
<b>4.12.1 General.....</b>	<b>26</b>
<b>4.12.2 Disinfection .....</b>	<b>27</b>
<b>4.12.3 pH adjustment.....</b>	<b>29</b>
<b>4.12.4 Water balance.....</b>	<b>29</b>
<b>4.12.5 Dilution .....</b>	<b>29</b>
<b>4.13 Heating.....</b>	<b>29</b>
<b>4.13.1 General.....</b>	<b>29</b>
<b>4.13.2 Permanently installed spas .....</b>	<b>30</b>
<b>4.13.3 Scandinavian hot tubs .....</b>	<b>31</b>
<b>4.14 Energy efficiency .....</b>	<b>31</b>
<b>4.14.1 General.....</b>	<b>31</b>

4.14.2 Advice to include in the user's manual .....	31
4.14.3 Design considerations for manufacturers/constructors .....	31
4.14.4 Energy consumption.....	32
4.15 Covers and cabinets.....	33
4.15.1 General .....	33
4.15.2 Cover lifters .....	33
4.16 Accessories and features.....	33
4.16.1 Accessories.....	33
4.16.2 Use of non-water treatment chemicals.....	33
4.16.3 Electrical accessories .....	33
4.17 Electrical requirements.....	34
5 Point of purchase information.....	34
5.1 Spa.....	34
5.2 Accessories for means of access .....	35
6 Installation, operation and maintenance manual .....	36
6.1 User's manual.....	36
6.2 Installation and commissioning manual.....	39
6.2.1 Locating the spa.....	39
6.2.2 Installing and commissioning the spa.....	40
6.2.3 Means of access.....	41
6.2.4 Cover.....	42
6.3 Maintenance .....	42
6.3.1 Filter .....	42
6.3.2 Balance Tank.....	42
6.3.3 Water Quality .....	42
6.3.4 Accessing the spa for maintenance .....	43
6.3.5 Winterization .....	43
6.4 Cleaning.....	43
6.4.1 General .....	43
6.4.2 Covers.....	43
6.4.3 Cabinets.....	43
6.4.4 Overflow channel.....	43
6.4.5 Balance tank .....	43
6.4.6 Spa surround.....	44
6.4.7 Spa features and equipment.....	44
7 Marking .....	44
7.1 General .....	44
Annex A (informative) Safety information in the user's manual and instruction sheets accompanying the spa .....	48
Annex B (normative) Methods of test for entrapment .....	50
B.1 Principle.....	50
B.2 Pass and failure criteria .....	50
B.2.1 Finger and toe entrapment .....	50
B.2.2 Foot and hand entrapment.....	50
B.2.3 Head or neck entrapment.....	50
B.3 Head and neck entrapment.....	50
B.3.1 Apparatus .....	50

<b>B.3.2</b>	<b>Test method .....</b>	<b>51</b>
<b>B.4</b>	<b>Finger and toe entrapment.....</b>	<b>51</b>
<b>B.4.1</b>	<b>Apparatus.....</b>	<b>51</b>
<b>B.4.2</b>	<b>Test method .....</b>	<b>52</b>
<b>B.5</b>	<b>Foot and hand entrapment.....</b>	<b>52</b>
<b>B.5.1</b>	<b>Apparatus.....</b>	<b>52</b>
<b>B.5.2</b>	<b>Test method .....</b>	<b>52</b>
<b>Annex C (informative)</b>	<b>Domestic spas used in rented settings .....</b>	<b>54</b>
<b>Annex D (informative)</b>	<b>Energy consumption test.....</b>	<b>56</b>
<b>D.1</b>	<b>General.....</b>	<b>56</b>
<b>D.2</b>	<b>Test equipment.....</b>	<b>56</b>
<b>D.3</b>	<b>Test conditions.....</b>	<b>56</b>
<b>D.4</b>	<b>Test procedure .....</b>	<b>57</b>
<b>D.5</b>	<b>Formulae .....</b>	<b>58</b>
<b>Annex E (informative)</b>	<b>Examples where a safety protection device can be installed.....</b>	<b>60</b>
<b>Annex F (normative)</b>	<b>Test method for safety cover .....</b>	<b>61</b>
<b>Bibliography.....</b>		<b>65</b>

## European foreword

This document (EN 17125:2018) has been prepared by Technical Committee CEN/TC 402 "Domestic Pools and Spas", the secretariat of which is held by AFNOR.

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 June 2019 and conflicting national standards shall be withdrawn at the latest by June 2019.

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

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

This European Standard outlines the technical items of associated equipment necessary for a properly equipped spa or hot tub to ensure it is clean, healthy and safe to use.

This European Standard is a recommendation that supports a variety of legal Regulations and Codes of Practice in each country. This standard is designed to complement the required rules and regulations contained in European Regulations such as:

- Building Regulations;
- Health and Safety/Health Protection Regulations;
- Regulation (EC) No 1907/2006 (REACH);
- Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, see Directive 2011/65/EU;
- Water Supply Regulation(s) (e.g. Commission Directive (EU) 2015/1787);
- Waste Electrical and Electronic Equipment Regulations (WEEE), see Directive 2012/19/EU;
- or in European Standards, such as EN 60335-2-60.

It is recommended that the design of all domestic spas is based on the parameters indicated in this standard, to ensure they are manufactured and installed correctly and the end user is aware of the correct operation and maintenance to ensure they are safe and healthy to use.

It is recommended that manufacturers, distributors, importers and retailers have a clear working knowledge of the requirements contained within this standard.

During the production of this standard, it was found that in certain areas and for certain formulae, several quite valid variations were possible. Therefore, the standard does not preclude the use of alternative formulae or procedures, where a specialist design may require such. It should also be acknowledged that with advances in technology, new products and design innovations will of necessity be introduced and procedures are in place to provide for consideration of these within future amendments to this standard.

Irrespective of anything contained in this standard, responsibility for specific Health and Safety issues and compliance with relevant National legislation shall be taken into consideration in relation to any contract during design, construction and operation and will remain the responsibility of the parties involved.

## 1 Scope

This document specifies safety requirements and test methods for domestic spas/whirlpool spas/hot tubs (see 3.2) for indoor and/or outdoor use, covering the following:

- portable spas including inflatable spas;
- exercise spas (factory-built or field-engineered);
- Scandinavian hot tubs;
- field-engineered spas;
- any associated equipment.

This document also provides advice and guidance for installers and maintainers of domestic spas/whirlpool spas/hot tubs.

This document is not applicable to:

- any type of swimming pool (domestic or public);
- mini-pools according to EN 16927;
- public spas (public use according to EN 15288);
- paddling pools according to EN 71-8;
- spas specifically intended for physical/medical therapy;
- spas specifically intended for beauty therapy;
- flotation tanks and flotation pools;
- bath tubs (including whirlpool baths);
- natural spas (name used to describe a bathing area, which is filled with untreated geothermally heated water);
- birthing pools.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 335, Durability of wood and wood-based products — Use classes: definitions, application to solid wood and wood-based products*

*EN 16582-1:2015, Domestic swimming pools — Part 1: General requirements including safety and test methods*

*EN 16713-2:2016, Domestic swimming pools — Water systems — Part 2: Circulation systems — Requirements and test methods*

*EN 16713-3:2016, Domestic swimming pools — Water systems — Part 3: Water treatment - Requirements*

*EN 60335-1, Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1)*

EN 60335-2-60:2003, *Household and similar electrical appliances — Safety — Part 2-60: Particular requirements for whirlpool baths and whirlpool spas (IEC 60335-2-60:2002)<sup>1)</sup>*

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)*

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)*

EN ISO 9227:2017, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2017)*

EN ISO 13732-1, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1)*

CEN/TS 16165:2016, *Determination of slip resistance of pedestrian surfaces — Methods of evaluation*

ISO 20712-1, *Water safety signs and beach safety flags — Part 1: Specifications for water safety signs used in workplaces and public areas*

### 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **domestic use**

use of a pool/spa/hot tub designated solely for the owner's/proprietor's/operator's family and guests including the use connected with renting dwellings for family use

Note 1 to entry: This definition is taken from the Business Plan of CEN/TC 402.

#### 3.2

##### **spa**

##### **hot tub**

##### **whirlpool**

vessel containing temperature-controlled water in a closed system not integrated with a swimming pool, which is designated for sitting in or lying on a supported structure with water treatment

Note 1 to entry: In different parts of the World, the terms "spa", "hot tub" and "whirlpool" can be used interchangeably or in combination to describe the wide range of products in the market place such as spas listed in the scope of this standard.

Note 2 to entry: Some spas may include hydro-massage jets (see 3.20).

---

1) This document is impacted by the amendments EN 60335-2-60:2003/A1:2005, EN 60335-2-60:2003/A2:2008, EN 60335-2-60:2003/A11:2010 and EN 60335-2-60:2003/A12:2010.