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National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 13451-8:2001

ICS 97.220.10

SWIMMING POOL EQUIPMENT - PART 8: ADDITIONAL SPECIFIC SAFETY REQUIREMENTS AND TEST METHODS FOR LEISURE WATER FEATURES

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This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on. August 11. 2001

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13451-8

February 2001

ICS 97.220.10

English version

Swimming pool equipment - Part 8: Additional specific safety requirements and test methods for leisure water features

Equipement de piscine - Partie 8: Exigences de sécurité et méthodes d'essai complémentaires spécifiques aux équipements de loisirs aquatiques

Schwimmbadgeräte - Teil 8: Zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren für Freitzeiteinrichtungen, Geräte und Effekte in Verbindung mit Wasser

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational equipment", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by August 2001, and conflicting national standards shall be withdrawn at the latest by August 2001.

The European Standard EN 13451 "Swimming pool equipment" consists of

– Part 1: General safety requirements and test methods

– Part 2: Additional specific safety requirements and test methods for ladders, stepladders and handle bends

– Part 3: Additional specific safety requirements and test methods for equipment for water treatment purposes

– Part 4: Additional specific safety requirements and test methods for starting platforms

– Part 5. Additional specific safety requirements and test methods for lane lines

– Part 6: Additional specific safety requirements and test methods for turning boards

– Part 7: Additional specific safety requirements and test methods for water polo goals

– Part 8: Additional specific safety requirements and test methods for leisure water features

– Part 9: Safety signs

– Part 10: Additional specific safety requirements and test methods for diving platforms, diving springboards and associated equipment

– Part 11: Additional specific safety requirements and test methods for moveable pool floors and moveable bulkheads

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This part of EN 13451 specifies safety requirements for leisure water features in addition to the general safety requirements of EN 13451-1:2001.

The requirements of this specific standard take priority over those in EN 13451-1:2001.

This part of EN 13451:2001 is applicable to leisure water features created by the action of water, air or by a combination of water and air which can be under pressure.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 1069-1
Water slides over 2 m height – Part 1: Safety requirements and test methods

EN 13451-1:2001
Swimming pool equipment – Part 1: General safety requirements and test methods

3 Terms and definitions

For the purposes of this standard the following terms and definitions apply:

3.1 water operated features: A feature formed as a result of water, being emitted either into or from a swimming pool.

NOTE: Examples are waves, water cannons, rain sprays, waterfalls, mushrooms and rapid rivers.

3.2 air operated features: A feature formed as a result of air, being emitted into swimming pool water.

NOTE: Examples are geysers and bubble seats.

3.3 air and water operated features: A feature formed as a result of air and water, being emitted into or from a swimming pool.

NOTE: Examples are hydromassages.

3.4 vortex pools: pools with a circular stream action, used in connection with rapids.

NOTE: Examples are intermediate pools.

4 Safety requirements

4.1 General

Where leisure water features are created by the introduction of air and/or water under pressure into the swimming pool water, the safety of the users shall be provided by means of the most appropriate method, including design, location, method of operation, warning signals and supervision.

Features should not operate at full pressure immediately, they should build up to their full pressure over a period of time, sufficient for the users to become aware.

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4.2 Siting

4.2.1 General

The siting of leisure water features should be obvious to every user (e.g. by design, signs, marking the area by colour, general notification).

They shall be installed that their effects cannot cause interference with the effects of other features or with different uses of the pool.

Where features involving the introduction of water into the swimming pool are installed outside the pool, they shall be obvious and visible.

Where a feature incorporates a change of depth (e.g. a submerged step) it shall be marked by contrasting colour.

4.2.2 Introduction of water and/or air from the bottom

Features incorporating the introduction of water and/or air under pressure into the swimming pool shall not be installed in depths of less than 700 mm unless:

a) the water speed at the pool outlet is ≤ 2 m/s;

b) the difference between the pressures measured in the system near the outlet and at the outlet shall not exceed 3 kPa.

4.2.3 Action of features on the users

Features utilising the introduction of water and/or air under pressure should not be located where their action can push users against obstacles or the pool wall.

4.3 Ride patterns/stopper effects

The effect of a feature involving high speed movement of water shall not make exit or entry to the feature difficult. The feature shall not be designed to cause deliberate collisions by users when being used correctly.

NOTE: The different body masses and buoyancy of users may affect the action of any particular feature.

The maximum speed of the water stream at any point of a stream channel (e.g. a crazy river) where the users have access shall be 3,5 m/s.

4.4 Ventilation

Features producing a curtain of water (e.g waterfalls, rain sprays and mushrooms) should provide sufficient ventilation behind the curtain.

4.5 Additional requirements for specific items

4.5.1 Waves

4.5.1.1 Wave chamber grill

If the waves are generated by wave producing chambers, grills shall be fitted to segregate the chambers from the pool. The grills shall be constructed, except for the perimetral frame, only by vertical bars.

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