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I.S. EN ISO 14509-3:2009

Small craft - Airborne sound emitted by powered recreational craft - Part 3: Sound assessment using calculation and measurement procedures (ISO 14509 -3:2009

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I.S. EN ISO 14509-3:2009

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14509-3

August 2009

ICS 17.140.30; 47.080

English Version

Small craft - Airborne sound emitted by powered recreational craft - Part 3: Sound assessment using calculation and measurement procedures (ISO 14509-3:2009)

Petits navires - Bruit aérien émis par les bateaux de plaisance motorisés - Partie 3: Évaluation du bruit à l'aide de procédures de calcul et de mesure (ISO 14509-3:2009)

Kleine Wasserfahrzeuge - Von motorgetriebenen Sportbooten abgestrahlter Luftschall - Teil 3: Beurteilung der Schallemission mittels Rechen- und Messverfahren (ISO 14509-3:2009)

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Foreword

This document (EN ISO 14509-3:2009) has been prepared by Technical Committee ISO/TC 188 "Small craft".

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of an identical text or by endorsement, at the latest by February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this document.

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, 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.

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The text of ISO 14509-3:2009 has been approved by CEN as a EN ISO 14509-3:2009 without any modification.

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Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 94/25/EC, as amended by Directive 2003/44/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive 94/25/EC, as amended by Directive 2003/44/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Directive 94/25/EC, as amended by Directive 2003/44/EC

Clause(s)/sub-clause(s) of this European Standard	Essential requirements (ERs) of EU Directive 94/25/EC, as amended by Directive 2003/44/EC	Qualifying remarks/Notes
All clauses	Annex 1.C, Essential requirements for noise emissions Clause 1.1	This European Standard defines a test for the assessment of noise emissions of recreational craft using calculation and measurement. It is applicable for powered mono hull craft with a Froude number greater than 1,1.

WARNING — Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

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I.S. EN ISO 14509-3:2009

INTERNATIONAL STANDARD

ISO 14509-3

First edition
2009-08-01

Small craft — Airborne sound emitted by powered recreational craft —

Part 3: Sound assessment using calculation and measurement procedures

Petits navires — Bruit aérien émis par les bateaux de plaisance motorisés —

Partie 3: Évaluation du bruit à l'aide de procédures de calcul et de mesure

Reference number
ISO 14509-3:2009(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 14509-3 was prepared by Technical Committee ISO/TC 188, *Small craft*.

ISO 14509 consists of the following parts, under the general title *Small craft — Airborne sound emitted by powered recreational craft*:

— *Part 1: Pass-by measurement procedures*

— *Part 2: Sound assessment using reference craft*

— *Part 3: Sound assessment using calculation and measurement procedures*

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Introduction

The European Union Directive 2003/44/EC (Amendment to Directive 94/25/EC) introduces limits for sound emission from recreational craft and requires conformity for certain types of craft to be shown by using the ISO 14509 series. ISO 14509-1 provides a practical measurement method, ISO 14509-2 provides an assessment method using reference craft and this part of ISO 14509 provides a predictive measurement method based on the work of the SoundBoat project. SoundBoat was funded by the European Commission and various European Marine Industry Associations and industrial partners to develop alternative methods of testing sound emission from recreational craft. Over the two years of the project, more than 65 craft have been tested according to the ISO 14509-1 pass-by test. From this an algorithm has been developed that uses a combination of hull–water sound, derived from hull parameters, and exhaust outlet sound, derived by direct measurement on board the craft under test, to predict the sound pressure level that would be observed at 25 m had the craft undergone pass-by testing according to ISO 14509-1. The method specified in this part of ISO 14509 does not require a measurement platform to be established and testing can be carried out independently of location and weather restrictions. This method does not require a list of reference craft to be established and provides a reproducible assessment procedure comparable to ISO 14509-1 pass-by testing to within 2 dB.

The SoundBoat project has concentrated on specific craft types and has only tested craft with the following characteristics:

— bottom type configuration of not more than two chines;

— square transom configuration;

— length of hull 11 m or greater.

The SoundBoat project was successfully completed in early 2005, but industry continues to gather data from on-water testing and, as the data model is refined with further validation of the concept, the parameters above will be revised appropriately. The SoundBoat project team do not believe that craft outside the above characteristics are unsuitable for assessment using this part of ISO 14509; however, where a significantly different craft is to be assessed, it might be beneficial to test according to ISO 14509-1.

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Small craft — Airborne sound emitted by powered recreational craft —

Part 3: Sound assessment using calculation and measurement procedures

1 Scope

This part of ISO 14509 specifies the procedures for assessing sound emission of powered monohull recreational craft of length up to 24 m with a Froude number greater than 1,1. It is not applicable for personal watercraft (PWC).

This part of ISO 14509 specifies the determination of the A-weighted sound pressure level by combining a calculation method and a measurement method.

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.

ISO 8665, *Small craft — Marine propulsion reciprocating internal combustion engines — Power measurements and declarations*

ISO 8666, *Small craft — Principal data*

ISO 10087, *Small craft — Craft identification — Coding system*

ISO 14509-1, *Small craft — Airborne sound emitted by powered recreational craft — Part 1: Pass-by measurement procedures*

IEC 60942, *Electroacoustics — Sound calibrators*

IEC 61672-1, *Electroacoustics — Sound level meters — Part 1: Specifications*

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