

Chapter 2 of the RCD Guidelines – Conformity Assessment

Chapter 2: Conformity assessment

Article 8: Modular choice

Article 8

Before producing and placing on the market products referred to in Article 1(1), the manufacturer or his authorised representative established in the Community shall apply the following procedures for boat design categories A, B, C and D as referred to in section 1 of Annex I.

1. For categories A and B:

- for boats of less than 12 m hull length: the internal production control plus tests (module Aa) referred to in Annex VI,
- for boats from 12 m to 24 m hull length: the EC type-examination (module B) referred to in Annex VII supplemented by module C (type conformity) referred to in Annex VIII, or any of the following modules: B + D, or B + F, or G or H.

2. For category C:

(a) for boats from 2.5 m to 12 m hull length:

- where the harmonised standards relating to sections 3.2 and 3.3 of Annex I are complied with: the internal production control (module A), referred to in Annex V,
- where the harmonised standards relating [to] sections 3.2 and 3.3 of Annex I are not complied with: the internal production control plus tests (module Aa) referred to in Annex VI.

(b) for boats from 12 m to 24 m hull length: the EC type-examination (module B) referred to in Annex VII followed by module C (type conformity) referred to in Annex VIII, or any of the following modules: B + D, or B + F, or G or H.

3. For category D:

For boats from 2.5 m to 24 m hull length: the internal production control (module A) referred to in Annex V.

4. For components referred to in Annex II: any of the following modules: B + C, or B + D, or B + F, or G or H.

The choice of the modules was the subject of difficult negotiation between the Member States and the outcome is a compromise. The modular framework does not permit a manufacturer the freedom to choose another module other than A or Aa, where these are specified, thus involving a notified body, and still remain in the regulatory modular system.

The conformity assessment procedures according to the required module and, in particular, the affixing of the CE marking must take place prior to placing on the market.

As the scope of the modules is defined in Annexes V to XII to the directive, the following is a reminder of the characteristics of the modules.

If a manufacturer chooses for commercial reasons additional assessment or certification following, for example, the procedures laid down in another module than that required, such a decision lies in the voluntary domain. The certification body involved may then undertake certification under its own name and not under an EC certification heading.

Until such time as the choice of modules available within the directive may be amended, the modular choice for manufacturers, within the regulatory sector, remains that shown on the following page.

Design category	Available modular choice	
	$2.5\text{ m} \leq \text{hull length} < 12\text{ m}$	$12\text{ m} \leq \text{hull length} \leq 24\text{ m}$
A 'Ocean'	Aa	
B 'Offshore'		
C 'Inshore'	If harmonised standards for stability and buoyancy are complied with	A
	If harmonised standards for stability and buoyancy are not complied with	Aa
D 'Sheltered waters'	A	
'Components'	B + C, or B + D, or B + F, or G or H	

Module	Title	Description
A	Internal production control	Internal conformity assessment and production control by the manufacturer himself who draws up a written declaration of conformity containing the information given in Annex XV.
Aa	Internal production control plus tests	This is module A, plus tests of stability and buoyancy carried out on the responsibility of the notified body, which issues an examination report.
B	EC type-examination	Covers EC type-examination; the notified body issues an EC type-examination certificate for a representative production sample which it has assessed in accordance with the essential safety requirements. This module applies only to the design phase and must be followed up by the manufacturer applying a module providing for assessment in the production phase.
C	Conformity to type	Covers the manufacturer's declaration on the basis of conformity to type, approved by the notified body (module B above).
D	Production quality assurance	Generally supplements module B. Derives from quality assurance standard EN ISO 9002 with the notified body responsible for approving and controlling the quality system set up by the manufacturer.
F	Product verification	Supplements module B. Covers product verification at the production phase, with the involvement of a notified body, which controls conformity to type and issues the certificate of conformity.
G	Unit verification	Covers unit verification of the design and production of each product controlled by a notified body, which issues a certificate of conformity.
H	Full quality assurance	Derives from the quality assurance standard EN ISO 9001 with the intervention of a notified body responsible for approving and controlling the quality system set up by the manufacturer.

<i>Directive/regulatory domain</i>	<i>Private domain</i>
Conformity assessment according to the appropriate module	Conformity assessment according to the agreement between the manufacturer and the certification body (the principles laid down in a module may be used)
Notified body	Certification body (which may be a notified body)
CE marking	Private logos and markings
Always COMPULSORY	Always VOLUNTARY

Article 9: Notified bodies

Article 9(1)

1. Member States shall notify the Commission and other Member States of the bodies which they have appointed to carry out the tasks pertaining to the conformity assessment procedures referred to in Article 8, together with the specific tasks which these bodies have been appointed to carry out and the identification numbers assigned to them beforehand by the Commission.

The Commission shall publish a list of the notified bodies, together with the identification numbers it has allocated to them and the tasks for which they have been notified, in the Official Journal of the European Communities. It shall ensure that the list is kept up to date.

Paragraph 1 stipulates that the Member States are responsible for informing the Commission of the bodies which they have appointed to carry out conformity assessment. The notification must indicate the specific field for which the body has been notified.

Appendix 4 provides a non-exhaustive list of notified bodies under the recreational craft directive and the conformity assessment modules they are entitled to apply. This list was updated at the time of going to press;

however, Member States may promote or withdraw a notified body at any time.

For more information on the principles of notification, the notification procedure and general responsibilities of notified bodies, see the *Guide to the implementation of directives based on the new approach and the global approach* ('blue book'). This guide is downloadable from the Enterprise DG's website on the Europa server at the following address: <http://europa.eu.int/comm/enterprise/newapproach/legislation/guide/legislation.htm>.

Article 9(2)

2. Member States shall apply the criteria laid down in Annex XIV in assessing the bodies to be indicated in such notification. Bodies meeting the assessment criteria laid down in the relevant harmonised standards shall be presumed to fulfil those criteria.

Article 9(3)

3. A Member State shall withdraw its approval from such a body if it is established that the latter no longer satisfies the criteria referred to in Annex XIV. It shall inform the Commission and the other Member States of its action forthwith.

Paragraphs 2 and 3 refer to the criteria for assessing the bodies to be notified (Annex XIV) and the possible withdrawal of approval.

Annex I of the RCD Guidelines

Annex I

Essential safety requirements for the design and construction of recreational craft

Article 3 of the directive (Essential requirements) requires that products referred to in Article 1(1) shall meet the essential safety, health, environmental protection and consumer protection requirements set out in Annex I.

1. Boat design categories

Design category	Wind force (Beaufort scale)	Significant wave height ($H^{1/3}$, metres)
A— 'Ocean'	exceeding 8	exceeding 4
B— 'Offshore'	up to, and including, 8	up to, and including, 4
C— 'Inshore'	up to, and including, 6	up to, and including, 2
D— 'Sheltered waters'	up to, and including, 4	up to, and including, 0.5

Definitions:

A. OCEAN: Designed for extended voyages where conditions may exceed wind force 8 (Beaufort scale) and significant wave heights of 4 m and above, and vessels largely self-sufficient.

B. OFFSHORE: Designed for offshore voyages where conditions up to, and including, wind force 8 and significant wave heights up to, and including, 4 m may be experienced.

C. INSHORE: Designed for voyages in coastal waters, large bays, estuaries, lakes and rivers where conditions up to, and including, wind force 6 and significant wave heights up to, and including, 2 m may be experienced.

D. SHELTERED WATERS: Designed for voyages on small lakes, rivers, and canals where condi-

tions up to, and including, wind force 4 and significant wave heights up to, and including, 0.5 m may be experienced.

Boats in each category must be designed and constructed to withstand these parameters in respect of stability, buoyancy, and other relevant essential requirements listed in Annex I, and to have good handling characteristics.

Notes on boat design categories

The main purpose for having boat design categories is to differentiate between the various levels of risks related to the construction of boats and to choose from among the various conformity assessment modules the adequate modules for each design category, also taking into account the hull length.

The 'significant wave height' is considered to be the primary factor and other parameters (e.g. meteorological) are descriptions of when these wave heights may be expected to occur.

NB:

The design category parameters are intended to define the physical conditions that might arise in any category for design evaluation, and should not be used to limit the geographical areas of operation due to the variety of physical conditions likely to be met in different geographical areas.

The directive does not include any navigation or usage rules and there is no link between the design categories and any such rules; taking into account construction safety, the user is only clearly informed of what the boat was designed and built for in relation to certain parameters of significant wave heights and wind speeds.

The physical conditions shall be determined from the maximum wind force and wave profiles, where wave profiles are consistent with waves generated by wind blowing at the maximum stated force for a prolonged period

subject to the limits of the implied fetch and of the maximum stated wave heights, and excluding abnormal factors such as sudden change in depth or tidal races.

For **category A**, extreme conditions apply as they reflect that a vessel engaged on a long voyage might be subject to any conditions and should be designed accordingly, excluding abnormal weather conditions, for example 'hurricanes'.

For **category D**, allowance should be made for waves of passing vessels up to a maximum wave height of 0.5 m.

As the design categories define physical conditions that may arise in any category for design evaluation, category D need not be considered, exclusively, as a 'freshwater only' category.

It is possible for a boat to be simultaneously assigned more than one design category with different maximum capacities corresponding to each design category assigned (number of persons, engine power, maximum weight), if all relevant essential requirements are satisfied. The assigned design categories and their corresponding data concerning number of persons, engine power and maximum load should be clearly and consistently indicated on the builder's plate, in the manual and on the relevant certificates.

2. General requirements

Recreational craft and components as referred to in Annex II shall comply with the essential requirements in so far as they apply to them.

A number of harmonised standards, the references of which have been published in the Official Journal, can be used to demonstrate conformity with the essential requirements of the directive in accordance with the provisions of Article 5. A list of standards harmonised under this directive can be found in Appendix 3. See also the comments related to Article 5.

2.1. Hull identification

Each craft shall be marked with a hull identification number including the following information:

- *manufacturer's code,*
- *country of manufacture,*
- *unique serial number,*
- *year of production,*
- *model year.*

The relevant harmonised standard gives details of these requirements.

The hull identification number identifies the craft and gives details of the abovementioned subjects. The two-digit code for the country of manufacture refers to the original place of manufacture of the craft, not necessarily the hull, as the construction of the latter may have been subcontracted within or outside the EEA. The three-digit code for the identification of the manufacturer is not designed to refer to the 'nationality' of the person who places the boat on the EEA market or puts it into service.

Relevant harmonised standard

EN ISO 10087:1996/A1:2000: Small craft — Hull identification — Coding system (ISO 10087:1995)

2.2. Builder's plate

Each craft shall carry a permanently affixed plate mounted separately from the boat hull identification number, containing the following information:

- *manufacturer's name,*
- *CE marking (see Annex IV),*
- *boat design category according to section 1,*
- *manufacturer's maximum recommended load according to section 3.6,*
- *number of persons recommended by the manufacturer for which the boat was designed to carry when under way.*

Some boat builders may wish to add the maximum rated engine power to the builder's

plate. This information is already contained in the owner's manual: such a practice is considered acceptable, provided the information in the owner's manual and on the builder's plate is fully consistent.

The builder's plate refers to the manufacturer of the boat and not, in the context of second-hand boats, the person who places the boat on the EEA market.

In the case of second-hand boats that are extensively modified to be considered 'new', here, again, the person carrying out the modification becomes the manufacturer. As the rebuilding or modification could change the information on the original builder's plate (load capacity, number of persons and even builder's name) a new builder's plate should be provided in addition to the remaining requirements of the directive.

2.3. Protection from falling overboard and means of reboarding

Depending on the design category, craft shall be designed to minimise the risks of falling overboard and to facilitate reboarding.

The basic principle indicating that essential requirements shall be complied with, 'in so far as they apply' to the craft to be certified, shall be taken into account. Therefore, as far as this essential requirement is concerned, the reduction in the possibility of falling overboard and the provision of 'means of reboarding' should be considered for all craft to be certified.

Relevant harmonised standard

EN ISO 15085:2003: Small craft — Man-overboard prevention and recovery (ISO 15085:2003)

2.4. Visibility from the main steering position

For motor boats, the main steering position shall give the operator, under normal conditions of use (speed and load), good all-round visibility.

Relevant harmonised standard

EN ISO 11591:2000: Small craft, engine-driven — Field of vision from helm position (ISO 11591:2000)

2.5. Owner's manual

Each craft shall be provided with an owner's manual in the official Community language or languages which may be determined by the Member State in which it is marketed in accordance with the Treaty. This manual should draw particular attention to risks of fire and flooding and shall contain the information listed in sections 2.2, 3.6 and 4 as well as the unladen weight of the craft in kilograms.

Relevant harmonised standard

EN ISO 10240:1996: Small craft — Owner's manual (ISO 10240:1995)

The owner's manual is provided as guidance to the owner of the boat, most particularly on safety issues. This manual should be written in the language applicable to the EEA State onto the market of which the product is to be placed.

This manual should cover risks applicable to the type of boat. Information not relevant to the boat model must be deleted to avoid confusion.

The owner's manual does not have to include complete technical service information, but should contain a trouble-shooting part, for example how to change a fuel filter or to get rid of air in the fuel system. Some sections of the manual may be filled in by hand, especially when related to one particular boat design.

3. Integrity and structural requirements

3.1. Structure

The choice and combination of materials and its construction shall ensure that the craft is strong enough in all respects. Special attention shall be paid to the design category according to section 1, and the manufacturer's maximum recommended load in accordance with section 3.6.

Relevant harmonised standards

EN ISO 12215-1:2000: Small craft — Hull construction and scantlings — Part 1: Materials: Thermosetting resins, glass-fibre rein-

forcement, reference laminate (ISO 12215-1:2000)

EN ISO 12215-2:2002: Small craft — Hull construction and scantlings — Part 2: Materials: Core materials for sandwich construction, embedded materials (ISO 12215-2:2002)

EN ISO 12215-3:2002: Small craft — Hull construction and scantlings — Part 3: Materials: Steel, aluminium alloys, wood, other materials (ISO 12215-3:2002)

EN ISO 12215-4:2002: Small craft — Hull construction and scantlings — Part 4: Workshop and manufacturing (ISO 12215-4:2002)

EN ISO 6185-1:2001: Inflatable boats — Part 1: Boats with a maximum motor power rating of 4.5 kW (ISO 6185-1:2001)

EN ISO 6185-2:2001: Inflatable boats — Part 2: Boats with a maximum motor power rating of 4.5 kW to 15 kW inclusive (ISO 6185-2:2001)

EN ISO 6185-3:2001: Inflatable boats — Part 3: Boats with a maximum motor power rating of 15 kW and greater (ISO 6185-3:2001)

3.2. Stability and freeboard

The craft shall have sufficient stability and freeboard considering its design category according to section 1 and the manufacturer's maximum recommended load according to section 3.6.

3.3. Buoyancy and flotation

The craft shall be constructed to ensure that it has buoyancy characteristics appropriate to its design category according to section 1.1, and the manufacturer's maximum recommended load according to section 3.6. All habitable multihull craft shall be so designed as to have sufficient buoyancy to remain afloat in the inverted position.

Boats of less than six metres in length that are susceptible to swamping when used in their design category shall be provided with appropriate means of flotation in the swamped condition.

Relevant harmonised standards

EN ISO 12217-1:2002: Small craft — Stability and buoyancy assessment and categorisation — Part 1: Non-sailing boats of hull length greater than or equal to 6 m (ISO 12217-1:2002)

EN ISO 12217-2:2002: Small craft — Stability and buoyancy assessment and categorisation — Part 2: Sailing boats of hull length greater than or equal to 6 m (ISO 12217-2:2002)

EN ISO 12217-3:2002: Small craft — Stability and buoyancy assessment and categorisation — Part 3: Boats of hull length less than 6 m (ISO 12217-3:2002)

Points 3.2 and 3.3 of the essential requirements are especially referred to in Article 8 ('Modular choice'), paragraph 2: for boats of design category C ('Inshore'), from 2.5 m to 12 m hull length, compliance with the above-mentioned harmonised standards permits the manufacturer to use the internal production control (module A) without third-party intervention.

3.4. Openings in hull, deck and superstructure

Openings in hull, deck(s) and superstructure shall not impair the structural integrity of the craft or its weathertight integrity when closed.

Windows, portlights, doors and hatchcovers shall withstand the water pressure likely to be encountered in their specific position, as well as pointloads applied by the weight of persons moving on deck.

Through hull fittings designed to allow water passage into the hull or out of the hull, below the waterline corresponding to the manufacturer's maximum recommended load according to section 3.6, shall be fitted with shutoff means which shall be readily accessible.

Relevant harmonised standards

EN ISO 9093-1:1997: Small craft — Seacocks and through hull fittings — Part 1: Metallic (ISO 9093-1:1994)

EN ISO 9093-2:2002: Small craft — Seacocks and through hull fittings — Part 2: Non-metallic (ISO 9093-2:2002)

EN ISO 12216:2002: Small craft — Windows, portlights, hatches, deadlights and doors — Strength and watertightness requirements (ISO 12216:2002)

The cockpit and windows, portlights and hatches may be included as possible tests, equivalent calculations or controls in the assessment carried out by or on the responsibility of the notified body in the context of a module Aa conformity assessment (Annex VI), as it may be argued that the design and construction of these details are inseparable parts of the issue and therefore should also be assessed.

3.5. Flooding

All craft shall be designed so as to minimise the risk of sinking.

Particular attention should be paid where appropriate to:

- *cockpits and wells, which should be self-draining or have other means of keeping water out of the boat interior,*
- *ventilation fittings,*
- *removal of water by pumps or other means.*

Relevant harmonised standards

EN ISO 11812:2001: Small craft — Watertight cockpits and quick-draining cockpits (ISO 11812:2001)

EN ISO 15083:2003: Small craft — Bilge-pumping systems (ISO 15083:2003)

EN 28849:1993/A1:2000: Small craft — Electrically operated bilge pumps (ISO 8849:1990)

3.6. Manufacturer's maximum recommended load

The manufacturer's maximum recommended load (fuel, water, provisions, miscellaneous equipment and people (in kilograms)) for which

the boat was designed, as marked on the builder's plate, shall be determined according to the design category (section 1), stability and freeboard (section 3.2) and buoyancy and flotation (section 3.3).

Relevant harmonised standard

EN ISO 14946:2001: Small craft — Maximum load capacity (ISO 14946:2001)

This very important indication of the manufacturer's maximum recommended load is to be written in the owner's manual with the relevant load information repeated on the builder's plate.

This paragraph governs the maximum load in relation to design category, stability and freeboard, and buoyancy and flotation. Fixed fuel and water tanks are to be assumed to be full when the recommended load is assigned and excluded from the load specified on the builder's plate.

3.7. Liferaft stowage

All craft of categories A and B, and craft of categories C and D longer than six metres shall be provided with one or more stowage points for a liferaft (liferasts) large enough to hold the number of persons the boat was designed to carry as recommended by the manufacturer. This (these) stowage point(s) shall be readily accessible at all times.

This paragraph refers only to the need to provide a suitable point or space for a liferaft, where appropriate. It does not lay down dimensions for liferaft stowage nor does it specify that any specific fittings, brackets, lockers or tie-down points should be provided.

3.8. Escape

All habitable multihull craft over 12 metres long shall be provided with viable means of escape in the event of inversion.

All habitable craft shall be provided with viable means of escape in the event of fire.

This essential requirement is linked to, but not covered by the essential requirement relating

to stability (3.2), so far as inversion of habitable multihulls is concerned.

Habitable craft are those boats which contain living space designed for sleeping and which are equipped with bunks.

Relevant harmonised standards

EN ISO 9094-1:2003: Small craft — Fire protection — Part 1: Craft with a hull length of up to and including 15 m (ISO 9094-1:2003)

EN ISO 9094-2:2002: Small craft — Fire protection — Part 2: Craft with a hull length of over 15 m (ISO 9094-2:2002)

EN ISO 12216:2002: Small craft — Windows, portlights, hatches, deadlights and doors — Strength and watertightness requirements (ISO 12216:2002)

3.9. Anchoring, mooring and towing

All craft, taking into account their design category and their characteristics, shall be fitted with one or more strong points or other means capable of safely accepting anchoring, mooring and towing loads.

Relevant harmonised standard

EN ISO 15084:2003: Small craft — Anchoring, mooring and towing — Strong points (ISO 15084:2003)

4. Handling characteristics

The manufacturer shall ensure that the handling characteristics of the craft are satisfactory with the most powerful engine for which the boat is designed and constructed. For all recreational marine engines, the maximum rated engine power shall be declared in the owner's manual in accordance with the harmonised standard.

Relevant harmonised standards

EN ISO 8665:1995/A1:2000 Small craft — Marine propulsion engines and systems: power measurements and declarations (ISO 8665:1994)

EN ISO 11592: Small craft with hull length of less than 8 m — Determination of maximum propulsion power rating (ISO 11592:2001)

The meaning of the last sentence of point 4 is to require that the owner's manual for the craft shall state the maximum rated engine power.

5. Installation requirements

5.1. Engines and engine spaces

5.1.1. Inboard engine

All inboard-mounted engines shall be placed within an enclosure separated from living quarters and installed so as to minimise the risk of fires or spread of fires as well as hazards from toxic fumes, heat, noise or vibrations in the living quarters.

Engine parts and accessories that require frequent inspection and/or servicing shall be readily accessible.

The insulating materials inside engine spaces shall be non-combustible

Relevant harmonised standards

EN 28846:1993/A1:2000: Small craft — Electrical devices — Protection against ignition of surrounding flammable gases (ISO 8846:1990)

EN ISO 9094-1:2003: Small craft — Fire protection — Part 1: Craft with a hull length of up to and including 15 m (ISO 9094-1:2003)

EN ISO 9094-2:2002: Small craft — Fire protection — Part 2: Craft with a hull length of over 15 m (ISO 9094-2:2002)

EN ISO 7840:1995/A1:2000: Small craft — Fire-resistant fuel hoses (ISO 7840:1994)

EN ISO 10088:2001: Small craft — Permanently installed fuel systems and fixed fuel tanks (ISO 10088:2001)

EN ISO 10133:2000: Small craft — Electrical equipment — Extra-low-voltage DC installations (ISO 10133:2000)

EN ISO 11105:1997: Small craft — Ventilation of petrol engines and/or petrol tank compartments (ISO 11105:1997)

EN ISO 15584:2001: Small craft — Inboard petrol engines — Engine-mounted fuel and electrical components (ISO 15584:2001)

EN ISO 16147:2002: Small craft — Inboard diesel engines — Engine-mounted fuel and electrical components (ISO 16147:2002)

Non-combustible materials refer to materials not sustaining combustion.

Materials are considered to be non-combustible if the oxygen index is at least 21 when measured in accordance with ISO 4589, Part 3, as referred to in EN ISO 9094-1:2003.

5.1.2. Ventilation

The engine compartment shall be ventilated. The dangerous ingress of water into the engine compartment through all inlets must be prevented.

Relevant harmonised standards

EN ISO 11105:1997: Small craft — Ventilation of petrol engines and/or petrol tank compartments (ISO 11105:1997)

EN ISO 12217-1:2002: Small craft — Stability and buoyancy assessment and categorisation — Part 1: Non-sailing boats of hull length greater than or equal to 6 m (ISO 12217-1:2002)

EN ISO 12217-2:2002: Small craft — Stability and buoyancy assessment and categorisation — Part 2: Sailing boats of hull length greater than or equal to 6 m (ISO 12217-2:2002)

EN ISO 12217-3:2002: Small craft — Stability and buoyancy assessment and categorisation — Part 3: Boats of hull length less than 6 m (ISO 12217-3:2002)

5.1.3. Exposed parts

Unless the engine is protected by a cover or its own enclosure, exposed moving or hot parts of the engine that could cause personal injury shall be effectively shielded.

5.1.4. Outboard engines starting

All boats with outboard engines shall have a device to prevent starting the engine in gear, except:

- (a) *when the engine produces less than 500 newtons (N) of static thrust;*
- (b) *when the engine has a throttle limiting device to limit thrust to 500 N at the time of starting the engine.*

Relevant harmonised standard

EN ISO 11547:1995/A1:2000: Small craft — Start-in-gear protection (ISO 11547:1994)

5.2. Fuel system

5.2.1. General

The filling, storage, venting and fuel-supply arrangements and installations shall be designed and installed so as to minimise the risk of fire and explosion.

Relevant harmonised standards

EN ISO 7840:1995/A1:2000: Small craft — Fire-resistant fuel hoses (ISO 7840:1994)

EN ISO 8469:1995/A1:2000: Small craft — Non-fire-resistant fuel hoses (ISO 8469:1994)

EN ISO 9094-1:2003: Small craft — Fire protection — Part 1: Craft with a hull length of up to and including 15 m (ISO 9094-1:2003)

EN ISO 9094-2:2002: Small craft — Fire protection — Part 2: Craft with a hull length of over 15 m (ISO 9094-2:2002)

EN ISO 10088:2001: Small craft — Permanently installed fuel systems and fuel tanks (ISO 10088:2001)

EN ISO 11105:1997: Small craft — Ventilation of petrol engines and/or petrol tank compartments (ISO 11105:1997)

EN ISO 14895:2003: Small craft — Liquid-fuelled galley stoves (ISO 14895:2000)

EN ISO 15584:2001: Small craft — Inboard petrol engines — Engine-mounted fuel and electrical components (ISO 15584:2001)

EN ISO 16147:2002: Small craft — Inboard diesel engines — Engine-mounted fuel and electrical components (ISO 16147:2002)

All fuel system components from the fuel filling opening to the point of connection with the propulsion or auxiliary engine, such as filters, non-metallic and metallic, shall be in compliance with EN ISO 10088:2001 as applicable. All engine-mounted fuel and electrical components on diesel and petrol inboard-mounted engines shall be in compliance with EN ISO 16147:2002 (diesel) and EN ISO 15584:2001 (petrol).

NB: Portable fuel tanks and their portable hoses are considered to lie outside the scope of the directive.

5.2.2. Fuel tanks

Fuel tanks, lines and hoses shall be secured and separated or protected from any source of significant heat. The material the tanks are made of and their method of construction shall be according to their capacity and the type of fuel. All tank spaces shall be ventilated.

Liquid fuel with a flashpoint below 55 °C shall be kept in tanks which do not form part of the hull and are:

- (a) insulated from the engine compartment and from all other source of ignition;*
- (b) separated from living quarters.*

Liquid fuel with a flashpoint equal to or above 55 °C may be kept in tanks that are integral with the hull.

All fuel tanks shall be provided with a means of preventing over- or under-pressure during filling or draining by adjoining combustion machinery.

The definition of petrol fuel as having a flashpoint lower than 55 °C and diesel fuel as having a flashpoint higher than 55 °C is now obsolete.

Petrol is defined in EN ISO 10088:2001 as hydrocarbon fuel or blends thereof which are liquid at atmospheric pressure and are used in spark ignition engines.

Petrol fuel tanks can be installed in engine compartments according to EN ISO 10088:2001, as this will satisfy the requirements of point 5.2.2(a).

Annex I, points 5.2.1 and 5.3 also apply to fuel-supply arrangements and installations on the engine.

5.3. Electrical system

Electrical systems shall be designed and installed so as to ensure proper operation of the craft under normal conditions of use and shall be such as to minimise risk of fire and electric shock.

Attention shall be paid to the provision of overload and short-circuit protection of all circuits, except engine starting circuits, supplied from batteries.

Ventilation shall be provided to prevent the accumulation of gases, which might be emitted from batteries. Batteries shall be firmly secured and protected from ingress of water.

Relevant harmonised standards

EN ISO 10133:2000: Small craft — Electrical systems— Extra-low-voltage DC installations (ISO 10133:2000)

EN ISO 13297:2000: Small craft — Electrical systems— Alternating current installations (ISO 13297:2000)

EN ISO 28846:1993/A1:2000: Small craft — Electrical devices — Protection against ignition of surrounding flammable gases (ISO 8846:1990)

EN ISO 15584:2001: Small craft — Inboard petrol engines — Engine-mounted fuel and electrical components (ISO 15584:2001)

EN ISO 16147:2002: Small craft — Inboard diesel engines — Engine-mounted fuel and electrical components (ISO 16147:2002)

EN 60092-507:2000: Electrical installations in ships — Part 507: Pleasure craft (IEC 60092-507:2000) (This standard is applicable only to craft with three-phase electrical systems)

In so far as electrical safety is concerned, the low voltage directive (LVD) remains applicable. This is Council Directive 73/23/EEC of 19 February 1973 on the harmonisation of laws of Member States relating to electrical equipment for use within certain voltage limits, as amended by Directive 93/68/EEC (Article 13) of 22 July 1993 on the affixing and use of the CE marking.

Low voltage with regard to the low voltage directive refers to 75 to 1 500 volts DC or 50 to 1 000 volts AC.

Annex I, points 5.2.1 and 5.3 also apply to fuel-supply arrangements and installations on the engine.

5.4. Steering system

5.4.1. General

Steering systems shall be designed, constructed and installed in order to allow the transmission of steering loads under foreseeable operating conditions.

Relevant harmonised standards

EN 28847:1989: Small craft — Steering gear — Wire rope and pulley systems (ISO 8847:1987)

EN 28848:1993/A1:2000: Small craft — Remote steering systems (ISO 8848:1990)

EN ISO 10592:1995/A1:2000: Small craft — Hydraulic steering systems (ISO 10592:1994)

EN 29775:1993/A1:2000: Small craft — Remote steering systems for single outboard motors of 15 kW to 40 kW power (ISO 9775:1990)

EN ISO 13929:2001: Small craft — Steering gear — Geared link systems (ISO 13929:2001)

5.4.2. Emergency arrangements

Sailboat and single-engined inboard powered motor boats with remote-controlled rudder

steering systems shall be provided with emergency means of steering the craft at reduced speed.

In case of failure of the remote-control system for the rudder steering, the emergency means of steering should enable a manual control of the rudder, for example by means of an emergency tiller or similar equipment.

5.5. Gas system

Gas systems for domestic use shall be of the vapour-withdrawal type and shall be designed and installed so as to avoid leaks and the risk of explosion and be capable of being tested for leaks. Materials and components shall be suitable for the specific gas used to withstand the stresses and exposures found in the marine environment.

Each appliance shall be equipped with a flame failure device effective on all burners. Each gas-consuming appliance must be supplied by a separate branch of the distribution system, and each appliance must be controlled by a separate closing device. Adequate ventilation must be provided to prevent hazards from leaks and products of combustion.

All craft with a permanently installed gas system shall be fitted with an enclosure to contain all gas cylinders. The enclosure shall be separated from the living quarters, accessible only from the outside and ventilated to the outside so that any escaping gas drains overboard. Any permanent gas system shall be tested after installation.

Relevant harmonised standard

EN ISO 10239:2000: Small craft — Liquefied petroleum gas (LPG) systems (ISO 10239:2000)

5.6. Fire protection

5.6.1. General

The type of equipment installed and the layout of the craft shall take account of the risk and spread of fire. Special attention shall be paid to the surroundings of open flame devices, hot areas or engines and auxiliary machines, oil and fuel overflows, uncovered oil and fuel

pipes and avoiding electrical wiring above hot areas of machines.

5.6.2. Fire-fighting equipment

Craft shall be supplied with fire-fighting equipment appropriate to the fire hazard. Petrol engine enclosures shall be protected by a fire extinguishing system that avoids the need to open the enclosure in the event of fire. Where fitted, portable fire extinguishers shall be readily accessible and one shall be so positioned that it can easily be reached from the main steering position of the craft.

Relevant harmonised standards

EN ISO 9094-1:2003: Small craft — Fire protection — Part 1: Craft with a hull length of up to and including 15 m (ISO 9094-1:2003)

EN ISO 9094-2:2002: Small craft — Fire protection — Part 2: Craft with a hull length of over 15 m (ISO 9094-2:2002)

Due to differing national regulations regarding fire-fighting equipment, this paragraph only requires the position for and capacity of the fire-fighting equipment to be designated.

5.7. Navigation lights

Where navigation lights are fitted, they shall comply with the 1972 Colreg or CEVNI regulations, as appropriate.

Navigation lights have to comply with the 1972 Colreg or CEVNI rules. Rule 1b of Colreg 1972, however, allows different national

requirements for local use. Moreover, Colreg 1972, Annex I, point 13, specifies that the construction of light and shapes and the installation on board the vessel shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly.

5.8. Discharge prevention

Craft shall be constructed so as to prevent the accidental discharge of pollutants (oil, fuel, etc.) overboard. Craft fitted with toilets shall have either:

(a) *holding tanks; or*

(b) *provision to fit holding tanks on a temporary basis in areas of use where the discharge of human waste is restricted.*

In addition, any through-the-hull pipes for human waste shall be fitted with valves, which are capable of being sealed shut.

The directive states that pipes penetrating the hull and carrying human waste shall be fitted with valves capable of being sealed shut. The concept of sealed shut in this case is to prevent inadvertent or accidental discharge. To this end, these valves shall be provided with the means of being sealed shut, thus preventing the valves being inadvertently opened. If the seal is broken, then there is clear indication that the valve has been operated, whether intentionally or in error.

Relevant harmonised standard

EN ISO 8099:2000: Small craft — Waste water retention and treatment — Toilet waste retention systems (ISO 8099:2000)