National Standard for Commercial Vessels

Part F Special vessels
Section 2 Leisure craft

Edition 2.6

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- Amendment No.2, 2018 that was approved by the National Marine Safety Regulator on 23 July 2018 to commence on 24 July 2018; and
- Amendment No.3, 2018 that was approved by the National Marine Safety Regulator on 16 July 2018 to commence on 1 January 2019, and
- Amendment No.1, 2020 being edition 2.6, that was approved by the National Marine Safety Regulator, and adopted by the Infrastructure and Transport Ministers on 20 November 2020, to commence on 1 January 2021.

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Chapter 1 Preliminary

1.1 Scope

This Section provides safety standards for the design, construction, equipping and operation of a domestic commercial vessel that is a leisure craft.

1.2 Application

(1) This Section applies to a leisure craft that is:

(a) ≤24 m long; and

(b) certified to carry ≤12 persons.

Note See the definition of leisure craft in section 1.4.

1.3 Reference documents

(1) Each document mentioned in the following table:

(a) is referenced in this Section; and

(b) is the latest revision of the document, including amendments, unless stated otherwise.

Note Section 1.7 in NSCV Part B provides that national, regional or international standards adopted or incorporated by reference in the NSCV are adopted or incorporated by reference as in force from time to time.

(2) However, where an International Standards Organisation (ISO) standard is referenced in this Section, a version other than the latest revision of the standard may be used provided that the version remains in force under the Recreational Craft Directive (RCD) issued by the European Parliament and the Council of the European Union, as in force from time to time.

Publisher	Document	Available
American Boat and Yacht Council	ABYC *Standards and Technical Information Reports for Small Craft*, H-3 (ANS): July 2008 *Exterior Windows, Windshields, Hatches, Doors, Port Lights, and Glazing* (ABYC H-3) ABYC *Standards and Technical Information Reports for Small Craft,* H-4 (ANS): July 2008 *Cockpit Drainage Systems* (ABYC H-4) *ABYC Standards and Technical Information Reports for Small Craft, H-8 Buoyancy in the Event of Flooding/Swamping* (ABYC H-8) *ABYC Standards and Technical Information Reports for Small Craft H-26 — Powering of boats* (ABYC H-26) *ABYC Standards and Technical Information Reports for Small Craft H-*	ABYC website at http://www.abycinc.org

Publisher	Document	Available
	35 — Powering and load capacity of pontoon boats (ABYC H-35) ABYC *Standards and Technical Information Reports for Small Craft,* H-27 (ANS): July 2008 *Seacocks, Thru-hull Fittings, and Drain Plug* (ABYC H-27) *ABYC Standards and Technical Information Reports for Small Craft*, P-1 (ANS): July 2009 *Installation of exhaust systems for propulsion and auxiliary engines* (ABYC P-1) *ABYC Standard for Technical Information Reports for Small Craft*, P-6 *Propelled Shafting Systems* (ABYC P-6)	
Standards Australia	AS 1499:1996 *Personal flotation devices – Type 2* (AS 1499) AS 2260: 1996 *Personal flotation devices – Type 3* (AS 2260) AS 4758.1:2015 *Lifejackets,* Part 1: *General requirements* (AS 4758.1) AS 1799.1-2009/Amdt 3-2014 *Small craft-General requirements for power boats* (AS 1799.1) AS 2092-2004 *Pyrotechnic marine distress flares and signals for pleasure craft* (AS 2092) AS 4132.1-1993 *Boat and ship design and construction - Design loadings* (AS 4132.1) AS 4132.2-1993 *Boat and ship design and construction - Aluminium construction* (AS 4132.2 AS 4132.3-1993/Amdt 1-1993 *Boat and ship design and construction - Fibre-reinforced plastics construction* (AS 4132.3) AS 1926.1-2012 *Swimming pool safety - Safety barriers for swimming pools* (AS 1926.1) AS 3786-2014 *Smoke alarms using scattered light, transmitted light or ionisation* (AS 3786)	SAI Global website at http://www.saiglobal.org

Publisher	Document	Available
Australian and New Zealand Standards	AS/NZS 2906:2001 *Fuel containers – Portable − Plastic and metal* (AS/NZS 2906) AS/NZS 1841.1:2007 *Portable fire extinguishers - General requirements* (AS/NZS 1841.1) AS/NZS 1841.2:2007 *Portable fire extinguishers - Specific requirements for water type extinguishers* (AS/NZS 1841.2) AS/NZS 1841.3:2007 *Portable fire extinguishers - Specific requirements for wet chemical type extinguishers* (AS/NZS 1841.3) AS/NZS 1841.4:2007 *Portable fire extinguishers - Specific requirements for foam type extinguishers* (AS/NZS 1841.4) AS/NZS 1841.5:2007 *Portable fire extinguishers - Specific requirements for powder type extinguishers* (AS/NZS 1841.5) AS/NZS 1841.6:2007 *Portable fire extinguishers - Specific requirements for carbon dioxide type extinguishers* (AS/NZS 1841.6) AS/NZS 1841.7:2007 *Portable fire extinguishers - Specific requirements for vaporizing liquid type extinguishers* (AS/NZS 1841.7) AS/NZS 1841.8:2007 *Portable fire extinguishers - Specific requirements for non-rechargeable type extinguishers* (AS/NZS 1841.8) AS/NZS 4280.1:2017 *406 MHz distress beacons – Part 1 – Emergency position-indicating radio beacons (EPIRB) (IEC 61097-3:2008, MOD)* (AS/NZS 4280.1) AS/NZS 3004.2:2014/Amdt 1:2015 *Electrical installations - Marinas and boats - Boat installations* (AS/NZS 3004.1)	SAI Global website at http://www.saiglobal.org
Australian Maritime	*Marine Order 30 (Prevention of collisions) 2016* (Marine Order 30)	AMSA website at http://amsa.gov.au

Publisher	Document	Available
Safety Authority	*Marine Order 503 (Certificates of survey – National Law) 2018* *Marine Order 504 (Certificates of operation and operation requirements – national law) 2018* *Marine Safety (Certificates of Survey) Exemption 2018 (EX02)*	
Australian Maritime Safety Authority	*National Standard for Commercial Vessels* Part B — *General requirements* Part C — *Design and construction* Part C, Section 1 — *Arrangement, accommodation and personal safety* Part C, Section 2 — *Watertight and weathertight integrity* Part C, Section 3 — *Construction* Part C, Section 4 — *Fire Safety* Part C, Section 5A — *Machinery* Part C, Section 6A — *Intact Stability requirements* Part C, Section 6B — *Buoyancy and stability after flooding* Part C, Section 6C — *Intact Stability Tests and Stability Information* Part C, Section 7A — *Safety equipment* Part G — *Non-survey vessels*	AMSA website at http://www.amsa.gov.au
International Maritime Organization	*International Regulations for the Prevention of Collisions at Sea Convention, 1972* (attached to *the Prevention of Collisions Convention*)	IMO website at http://www.imo.org
International Standards Organisation	ISO 6185-1:2001 *Inflatable boats*, Part 1: *Boats with a maximum motor rating of 4,5 kW* (ISO 6185-1) ISO 6185-2:2001 *Inflatable boats, Part 2: Boats with a maximum motor rating of 4,5 kW to 15 kW inclusiv*e (ISO 6185-2) ISO 6185-3:2014 *Inflatable boats*, Part 3: *Boats with a hull length less than 8 m with a motor rating of 15 kW and greater* (ISO 6185-3) ISO 6185-4:*2011 Inflatable boats – Part 4: Boats with a hull length of between 8*	ISO website at http://www.iso.org

Publisher	Document	Available
	and 24 m with a motor power rating of 15 kW or greater (ISO 6185-4) ISO 9094: 2015 *Small craft – Fire protection* (ISO 9094) ISO 8849:2003 *Small craft – Electrically operated direct current bilge pumps* (ISO 8849) ISO 8665:2006 *Small craft – Marine propulsion reciprocating internal combustion engines – Power measurements and declarations* (ISO 8665) ISO 12402-3: 2006 *Personal flotation devices,* Part 3: *Lifejackets, performance level 150 – Safety requirements* (ISO 12402-3) ISO 12402-4:2006 *Personal flotation devices, Part 4: Lifejackets, performance level 100 – Safety requirements* (ISO 12402-4) ISO 10088:2013 *Small craft – Permanently installed petrol and diesel fuel systems* (ISO 10088) ISO 15085:2003 *Small craft – man-overboard prevention and recovery* (ISO 15085) ISO 12215-1:2000 *Small craft - Hull construction and scantlings - Part 1: Materials: Thermosetting resins, glass-fibre reinforcement, reference laminate* (ISO 12215-1) ISO 12215-2:2002 *Small craft - Hull construction and scantlings - Part 2: Materials: Core materials for sandwich construction, embedded materials* (ISO 12215-2) ISO 12215-3:2002 *Small craft - Hull construction and scantlings - Part 3: Materials: Steel, aluminium alloys, wood, other materials* (ISO 12215-3) ISO 12215-4:2002 *Small craft - Hull construction and scantlings - Part 4:*	

Publisher	Document	Available
	Workshop and manufacturing (ISO 12215-4) ISO 12215-5:2008/incl Amdt 1:2014 *Small craft - Hull construction and scantlings - Part 5: Design pressures for monohulls, design stresses, scantlings determination - Amendment 1* (ISO 12215-5) ISO 12215-6:2008 *Small craft - Hull construction and scantlings - Part 6: Structural arrangements and details* (ISO 12215-6) ISO/DIS 12215-7 *Small craft - Hull construction and scantlings - Part 7: Scantling determination of multihulls* (ISO 12215-7) ISO 12215-8:2009/ incl Cor 1:2010 *Small craft - Hull construction and scantlings - Part 8: Rudders - Technical Corrigendum 1* (ISO 12215-8) ISO 12215-9:2012 *Small craft - Hull construction and scantlings - Part 9: Sailing craft appendages* (ISO 12215-9) ISO 12217-1:2015 *Small craft – Stability and buoyancy assessment and categorization,* Part 1: *Non-sailing boats of hull length greater than or equal to 6 m* (ISO 12217-1) ISO 12217-2:2015 *Small craft – Stability and buoyancy assessment and categorization,* Parts 2: *Sailing boats of hull length greater than or equal to 6 m* (ISO 12217-2) ISO 12217-3:2015 *Small craft – Stability and buoyancy assessment and categorization,* Part 3: *Boats of hull length less than 6 m* (ISO 12217-3) ISO 11592-1:2016 *Small craft - Determination of maximum propulsion power rating using manoeuvring speed* - Part 1: *Craft with a length of hull less than 8 m* (ISO 11592-1)	

Publisher	Document	Available
	ISO 21487:2012 *Small craft – Permanently installed petrol and diesel fuel tanks* (ISO 21487) ISO 11105:1997 *Small craft – Ventilation of petrol engine and/or petrol tank compartments* (ISO 11105) ISO 8846:1990 *Small craft – Electrical devices – Protection against ignition of surrounding flammable gases* (ISO 8846) ISO 15584:2001 *Small craft – Inboard petrol engines – Engine-mounted fuel and electrical components* (ISO 15584) ISO 11192:2005 *Small craft – Graphical symbols* (ISO 11192) ISO 9093-1:1994 *Small craft – Seacocks and through-hull fittings* – Part 1: *Metallic* (ISO 9093-1) ISO 9093-2:2002 *Small craft – Seacocks and through-hull fittings* – Part 2: *Non-metallic* (ISO 9093-2) ISO 7840:2013 *Small craft – Fire resistant fuel hoses* (ISO 7840) ISO 8847:2004 *Small craft – Steering gear – Cable and pulley systems* (ISO 8847) ISO 8848:1990 *Small craft – Remote steering systems* (ISO 8848) ISO 9775:1990 *Small craft – Remote steering systems for single outboard motors of 15 kW to 40kW power* (ISO 9775) ISO 10592:1994 *Small craft – Hydraulic steering systems* (ISO 01592) ISO 13929:2001 *Small craft – Steering gear – Geared linked systems* (ISO 13929) ISO 25197:2012/Amdt 1:2014 *Small craft – Electrical/electronic control systems for steering, shift and throttle* (ISO 25197) ISO 12216:2002 *Small craft — Windows, portlights, hatches, deadlights and doors — Strength and watertightness requirements* (ISO 12216)	

Publisher	Document	Available
	ISO 11812:2001 *Small craft – Watertight cockpits and quick-draining cockpits* (ISO 11812) ISO 11547:1994 *Small craft – Start-in-gear protection* (ISO 11547) ISO 13363:2004/incl Corrigendum 1:2008 *Rubber and plastic hoses for marine-engine wet-exhaust systems – Specification* (ISO 13363) ISO 16180: 2013 *Small Craft – Navigation Lights – installation, placement and visibility* (ISO 16180)	
National Standards Authority of Ireland	I.S. EN 28848:1993 *Small craft – Remote steering systems* (I.S. EN 28848)	SAI Global website at http://www.saiglobal.org
European Parliament And The Council Of The European Union	Directive 2013/53/EU of the European Parliament and of the Council of 20 November 2013 on recreational craft and personal watercraft and repealing Directive 94/25/EC	EUR-LEX website at http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1428928761545&uri=CELEX:32013L0053
SAE International	J1527 *Marine Fuel Hoses* (J1527)	SAE International website at http://www.sae.org
UL	UL 1180 *Standard for Fully Inflatable Recreational Personal Flotation Devices* (UL1180)	UL website at http://www.ulstandards.ul.com

1.4 Definitions

(1) In this Section:

ABYC means the American Boat and Yacht Council.

float-free bracket means an auto-release bracket for a water-activated EPIRB, fitted with a Hydrostatic Release Unit (HRU), which is designed to automatically deploy the EPIRB when submerged at depth. Also known as "category 1 bracket" by beacon manufacturers.

NOTE: These were previously referred to in the NSCV as "category 1 bracket".

float-free EPIRB means a water-activated EPIRB fitted in a float-free bracket.

freeing port means an opening in the lower part of the bulwarks to allow deck water to run overboard.

GNSS means global navigation satellite system, such as GPS.

GNSS equipped EPIRB means an EPIRB provided with a navigation device, which can determine and transmit its position. The EPIRB may be a Class 2 (manual and water activated) or Class 3 (manual activated) as defined in AS/NZS 4280.1.

GPS means global positioning system.

hirer has the same meaning as hirer of a hire and drive vessel in section 6 of the national law.

land means a part of the earth's surface (other than a reef) above the ordinary high water line at spring tides.

leisure craft means a Class 4 vessel.

Note 1 Vessel class definitions are contained in the NSCV Part B. A Class 4 vessel is a hire and drive vessel used by the hirer only for recreational purposes. A hire and drive vessel is a vessel let for hire or reward or for any other consideration, including a vessel provided in conjunction with a holiday establishment or hotel for the use of guests or tenants – see section 6 of the *national law*.

Note 2 Class 4 non-survey vessels must comply with NSCV Part G and are not required to comply with the design, construction or equipment requirements of this Section.

non-survey vessel means a vessel that is:

(a) listed in *Schedule 1, Division 2 of the Marine Safety (Certificates of survey) Exemption 2018* and which does not have a certificate of survey issued under the national law; or

(b) required by a National Law instrument to comply with NSCV Part G.

Note It is a condition of *Marine Safety (Certificates of Survey) Exemption 2018* that non-survey vessels, and some other domestic commercial vessels that are not required to hold a certificate of survey, must comply with NSCV Part G. Other National Law instruments, including exemptions, may also require domestic commercial vessels to comply with NSCV Part G.

Examples of non-survey leisure craft include, but are not limited to:

(1) Class 4 vessel that:

(a) is <12 m long; and

(b) operates only in sheltered (D or E) waters; and

(c) does not have an inboard petrol engine, other than a personal watercraft; and

(d) is not an overnight hire and drive vessel;

(2) A human powered vessel

(3) A sailing vessel that:

(a) is <7.5 m long; and

(b) has no auxiliary engine, or an auxiliary engine of ≤3.5 kW propulsion power

(4) A personal watercraft

(5) A tender

notified body means a conformity assessment body that meets the requirements of Article 30 of the RCD.

RCD means the Recreational Craft Directive issued by the European Parliament and the Council of the European Union, as in force from time to time.

remote enclosed waters means waterways where assistance from shore based facilities or other vessels is not readily available and where rescue services would likely be required in the event of an emergency.

safety equipment means appliances for saving or protecting life, including communications equipment, navigation equipment, fire equipment and anchoring systems.

Note Examples include lifejackets, life rafts, buoyant appliances, lifebuoys, first aid or medical equipment, emergency beacons, distress signals, compass, radio etc.

side deck means an open deck that runs along the side of the vessel.

standard houseboat means a houseboat that:

(a) is in service category Class 4E; and

(b) is ≤24 m length overall (LOA); and

(c) is ≤8.5 m in beam; and

(d) has a profile area of ≤130 m2; and

(e) has a loaded displacement of ≤75 tonnes; and

(f) has a maximum potential speed of ≤10 knots; and

(g) is comprised of a house structure built on a cross deck that is supported by pontoons.

Note The National Regulator will use the standard houseboat requirements provided throughout this Section as the basis for determining suitable requirements for houseboats that have a monohull. The stability and compartment subdivision requirements would be considered on a case by case basis.

water-activated EPIRB means an EPIRB with manual and water activation switch (with an operating temperature of either -40°C to +55°C or -20°C to +55°C).

Also known as "class 1 EPIRB" or "class 2 EPIRB", which are defined in AS/NZS 4280.1.

NOTE: These were previously referred to in the NSCV as "class 2 EPIRB"s.

(2) In this Section, the following terms have the meaning given by the Dictionary in NSCV Part B:

AMSA	Class 1 vessel	Class 2 vessel
Class 3 vessel	Class 4 vessel	collared vessel
domestic commercial vessel	EPIRB	hire and drive vessel
inflatable boat	inland waters	ISO
Long	measured length	national law
open vessel	National Regulator	novel vessel
NSCV	operational area	owner
Part B	recognised organisation	rigid inflatable boat (RIB)
sailing vessel	service category	shore base

Chapter 2 Requirements for leisure craft

2.1 General requirements

The vessel must be designed, constructed, equipped and operated so that the required outcomes mentioned in Schedule 1 are met.

2.2 Meeting the required outcomes

The vessel is taken to meet the required outcomes mentioned in Schedule 1 Division A to Schedule 1 Division I, if the National Regulator considers that it is designed, constructed and equipped in accordance with:

(a) the deemed to satisfy solutions in Chapters 3 to 10; or

(b) for a vessel that complies with the RCD — the deemed to satisfy solutions in Chapter 11; or

(c) NSCV Part C, as a Class 1 or Class 2 vessel, where:

(i) the number of persons is greater than or equal to the intended limit for Class 4 operations; and

(ii) the operational area is greater than or equal to the intended limit for Class 4 operations; or

(d) for a standard houseboat — the deemed to satisfy solutions in Chapter 12; or

(e) for a leisure craft that is a non-survey vessel — NSCV Part G.

Note for paragraph (c) NSCV Part C includes all the design, construction and equipment standards within NSCV Part C, from Section C1 to Subsection C7D.

Note for paragraph (e) It is a condition of *Marine Safety (Certificates of Survey) Exemption 2018* that non-survey vessels comply with the design, construction and equipment standards mentioned in NSCV Part G and are not required to comply with the design, construction or equipment requirements of this Section.

Note If the owner of the vessel wishes to meet the required outcomes by another equivalent means, he or she must apply to the National Regulator for approval of the equivalent means of compliance in accordance with *Marine Order 503 (Certificates of survey — national law) 2018*.

Chapter 3 Safety equipment

(Required outcomes: Schedule 1 Division B)

3.1 Kind and quantity of safety equipment

(1) A new or transitional vessel, as defined in *Marine Order 503 (Certificate of survey) 2018,* must carry at minimum the kind and quantity of safety equipment mentioned in tables 1 – 4 for the type of vessel.

Note 1 Section 2.6 of NSCV Part B provides that a vessel that has been assigned more than 1 service category must comply with the requirements of the highest of those service categories and any additional requirements of the other service categories to which it is assigned.

Note 2 Safety equipment mentioned in tables 1 to 4 must meet the standards for its design, manufacture and performance mentioned for the equipment in Schedule 2– see section 3.2.

(2) An existing vessel, as defined in *Marine Order 503 (Certificate of survey) 2018,* must carry at minimum the kind and quantity of safety equipment mentioned in tables 1 – 4 for the type of vessel in accordance with the following transitional timeframes:

(a) for lifejackets:

(i) the quantity of lifejackets mentioned in tables 1 – 4 —within 48 months from 1 January 2018; and

(ii) the kind, standard, installation, servicing and other requirements for life jackets mentioned in tables 1 – 4 and Schedule 2 —as lifejackets are acquired or replaced; and

(b) for all other kinds of safety equipment—the equipment must comply with the kind, quantity, standard, installation, servicing and other requirements mentioned in tables 1 – 4 and Schedule 2 when one of the following occurs (whichever occurs first):

(i) the safety equipment is replaced or new equipment is acquired; or

(ii) 12 months from the next periodic or renewal survey for the vessel; or

(iii) 24 months from 1 January 2018.

(3) The owner of the vessel must consider whether the vessel requires any equipment in addition to the equipment mentioned in tables 1 – 4, taking into account the location, number of persons permitted on board and the kind of activities intended for the vessel.

Note Part 3 of the national law places duties on owners to ensure, so far as reasonably practicable, the safety of the vessel, of marine safety equipment that relates to the vessel and of the operation of the vessel. Tables 1 – 4 contain the minimum equipment requirements for the vessel, and owners must consider what additional safety equipment may be required for the safe operation of the vessel.

Table 1 Standard houseboat – safety equipment

Type of vessel	Kind of safety equipment	Quantity / Requirement
Standard houseboat	Anchor with chain and rope	1 where required to ensure the safety of the vessel in the applicable area of operation
	Buoyant appliance with 30 m of 8 mm buoyant rope attached	1 with a self-igniting light
	Communication equipment for contacting a shore base or other vessels	1 See Schedule 2 for design requirements
	Distress signal – orange smoke hand-held	1 if vessel in remote enclosed sheltered waters or operating >2 nm from land
	Distress signal – red hand-held distress flare	2 if vessel in remote enclosed sheltered waters or operating >2 nm from land
	Fire blanket	1 for each galley space on the vessel, located in the galley space
	Fire bucket with lanyard	1
	Fire extinguisher	Either: (a) 2 dry powder fire extinguishers of 4.5 kg; or (b) the quantity and type of fire extinguisher mentioned in AS 1799.1
	First aid kit	1
	Gangway or gangplank	1 if necessary for safe access and egress
	Lifejacket	For each person on board, 1 lifejacket that meets level 100 (type 1) standard
	Map or chart of operational area	1
	Navigation lights	As required by the *International Regulations for the Prevention of Collisions at Sea Convention, 1972* where the vessel is operating from

Type of vessel	Kind of safety equipment	Quantity / Requirement
		sunset to sunrise or in restricted visibility *Note* Where a vessel is at anchor overnight (and not on a mooring), the COLREGS require a 360 degree white anchor light to be displayed.
	Smoke detectors	Smoke detectors are to be self-contained photoelectric smoke alarms complying with AS 3786. *Note* to comply with AS 3786 using a non-removable battery type smoke alarm, the operating life of the battery in the smoke alarm must be 10 years or greater. Detectors are to be located outside each sleeping cabin (one detector may serve multiple cabins where they are grouped together) and within internal stairwells
	Waterproof buoyant torch	1

Table 2 Vessels in operational area E other than standard houseboats

Type of vessel	Kind of safety equipment	Quantity
All vessels other than standard houseboats that are operating in operational area E	Anchor with chain and rope	1 where required to ensure safety of the vessel in the applicable area of operation
	Bailer	1 if the vessel is not self-draining
	Bilge pump	Vessel must comply with clause 3.7
	Buoyant appliance with 30 m of 8 mm buoyant rope attached	(a) 1 with a self-igniting light if the vessel is <12 m; and (b) 2, including 1 with a self-igniting light, if the vessel is ≥12 m to ≤24 m
	Communication equipment for contacting a shore base or other vessels	1 See Schedule 2 for design requirements
	Distress signal – orange smoke hand-held	1 if vessel in remote enclosed sheltered waters or operating >2 nm from land

Type of vessel	Kind of safety equipment	Quantity
	Distress signal – red hand-held distress flare	2 if vessel in remote enclosed sheltered waters or operating >2 nm from land
	First aid kit	1
	Fire blanket	1 for any each galley space on the vessel, located in the galley space
	Fire extinguisher	Either: (a) 2 dry powder fire extinguishers of 4.5 kg; or (b) the quantity and type of fire extinguisher mentioned in AS 1799.1
	Gangway or gangplank	1 if necessary for safe access and egress on vessels >7.5 m
	Lifejacket	For each person on board, 1 lifejacket that meets Level 100 (Type 1) standard
	Map or chart of operational area	1
	Navigation lights	If operating at night or in restricted visibility the vessel must exhibit the lights required by the standards mentioned in Schedule 2 for navigation lights. *Note* Generally the following arrangements of navigation lights will satisfy these requirements: (a) for a vessel <12m — 360 degree white light with port and starboard sidelights; and (b) for a vessel ≥12m — 360 degree white light with port and starboard sidelights, and masthead light and stern light
	Waterproof/buoyant torch	1

Table 3 Vessels in operational area D

Type of vessel	Kind of safety equipment	Quantity
Vessels that are operating in operational area D	Anchor with chain and rope	1 where required to ensure safety of the vessel in the applicable area of operation
	Bailer	1 if the vessel is not self-draining
	Bilge pump	Vessel must comply with clause 3.7
	Buoyant appliance with 30 m of 8 mm buoyant rope attached	(a) 1 with a self-igniting light if the vessel is <12 m; and (b) 2, including 1 with a self-igniting light, if the vessel is ≥12 m to ≤24 m
	Communication equipment for contacting a shore base or other vessels	1 See Schedule 2 for design requirements
	Distress signal – orange smoke handheld	1 if vessel in remote enclosed sheltered waters or operating >2 nm from land
	Distress signal – red handheld distress flare	2 if vessel in remote enclosed sheltered waters or operating >2 nm from land
	Distress signal – red star parachute rocket	3 if vessel in remote enclosed sheltered waters or operating >2 nm from land
	EPIRB – registered with AMSA	1 if vessel in remote enclosed sheltered waters or operating >2 nm from land
	Fire blanket	1 located in the galley space
	Fire extinguisher	Either: (a) 2 dry powder extinguishers of 4.5 kg; or (b) the quantity and type of fire extinguisher mentioned in AS 1799.1
	First aid kit	1
	Gangway or gangplank	1 if necessary for safe access and egress on vessels >7.5 m

Type of vessel	Kind of safety equipment	Quantity
	Lifejacket	For each person on board, 1 lifejacket that meets Level 100 (Type 1) standard
	Map or chart of operational area	1
	Navigation lights	If operating at night or in restricted visibility the vessel must exhibit the lights required by the standards mentioned in Schedule 2 for navigation lights. *Note* Generally the following arrangements of navigation lights will satisfy these requirements: (a) For a vessel <12m — 360 degree white light with port and starboard sidelights (b) For a vessel ≥12m — 360 degree white light with port and starboard sidelights, masthead light and stern light
	Waterproof buoyant torch	1

Table 4 Vessels in operational area C

Type of vessel	Kind of safety equipment	Quantity
Vessels that are operating in operational area C	Anchor with chain and rope	1
	Bailer	1 if vessel is not self-draining
	Bilge pump	Vessel must comply with clause 3.7
	Buoyant appliance with 30 m of 8 mm buoyant rope attached	(a) 1 with a self-igniting light if the vessel is <12 m; and (b) 2, including 1 with a self-igniting light, if the vessel is ≥12 m to ≤24 m
	Communication equipment for contacting a shore base or other vessels	1: (a) if within coverage area of VHF service — a VHF marine radio; and (b) if outside the coverage of VHF service:

Type of vessel	Kind of safety equipment	Quantity
		(i) a MF/HF transceiver approved by ACMA for maritime use; or (iii) a satellite phone
	Compass or GNSS *Note* GPS is a type of GNSS	1
	Distress signal – orange smoke handheld	1
	Distress signal – red handheld distress flare	2
	Distress signal – red star parachute rocket	3
	Distress signal — V sheet marine	1
	EPIRB – registered with AMSA	1 if operating >2 nm from land
	Fire blanket	1 for each galley space on the vessel, located in the galley space
	Fire extinguisher	Either: (a) 2 dry powder extinguishers of 4.5 kg; or (b) the quantity and type of fire extinguisher mentioned in AS 1799.1:2009
	First aid kit	1
	Gangway or gangplank	1 if necessary for safe access and egress on vessels >7.5 m
	Lifejacket	For each person on board, at least 1 lifejacket that meets Level 150 (coastal lifejacket) standard
	Life raft or dinghy	If required by table 6 (see clause 10.3)
	Map or chart of operational area	1
	Navigation lights	If operating at night or in restricted visibility the vessel must exhibit the lights required by the standards

Type of vessel	Kind of safety equipment	Quantity
		mentioned in Schedule 2 for navigation lights. *Note* Generally the following arrangements of navigation lights will satisfy these requirements: (a) For a vessel <12m — 360 degree white light with port and starboard sidelights (b) For a vessel ≥12m — 360 degree white light with port and starboard sidelights, masthead light and stern light
	Waterproof buoyant torch	1

3.2 Safety equipment design, manufacture and performance standards

Safety equipment mentioned in tables 1 to 4 must meet the standards for its design, manufacture and performance mentioned for the equipment in Schedule 2.

3.3 Operation

Safety equipment carried on board a vessel must operate effectively and be fit for purpose.

Example A lifejacket must be the correct size for the person who must wear it.

3.4 Accessibility

(1) Safety equipment carried on board a vessel must be quickly accessible to persons on board at all times.

(2) There must be at least 1 set of pictorial instructions for the use of lifejackets displayed in a prominent place near their storage and clearly readable by all persons on board the vessel.

(3) For first aid kits, their location on the vessel must be clearly marked with a sign or sticker.

3.5 Servicing

(1) If there are manufacturer instructions for a vessel's safety equipment, the equipment must be maintained and serviced in accordance with those instructions.

(2) Safety equipment carried on board a vessel must be replaced if it exceeds the manufacturer's specified expiry date.

3.6 Safety equipment belonging to parent vessel

(1) The following safety equipment must be marked to identify the vessel to which it belongs:

(a) lifejackets;

(b) life rafts;

(c) buoyant appliances;

(d) lifebuoys;

(e) dinghies.

(2) Markings must include either the parent vessel's name or the parent vessel's unique identifier.

3.7 Bilge systems

(1) This section applies to a vessel required by tables 1 to 4 to comply with clause 3.7.

(2) The following vessels must have the kind and number of bilge pumps mentioned in table 5:

(a) an open vessel; and

(b) a vessel with covered bilges; and

(c) a vessel with under-floor compartments, other than airtight void spaces filled with foam to over 90% of the void volume.

(3) Each bilge pump must:

(a) have a strainer fitted to the suction pipe to prevent the pump choking; and

(b) if an extra low voltage electric motor powers the bilge pump — the pump must meet ISO 8849.

(4) The bilge system must be arranged so that every compartment on the vessel can be pumped by at least one bilge pump, with a capacity as specified in table 5. However, underdeck voids filled with foam to over 90% of the void volume are not required to have a bilge pump.

(5) A vessel ≥13m long and ≤24m long must carry pumps that are both manual and powered in accordance with columns 2 and 3 of table 5.

Table 5 – Bilge pumping capacity requirements of vessels

Length of vessel	Manual pump or Extra low voltage (ELV) pumps		Engine or electric powered pumps (low voltage and higher)	
	Number	Capacity per pump	Number	Capacity per pump
<7.5 m	1	4.0 kL/hr		
≥7.5 m to ≤13 m	2	4.0 kL/hr		
>13 m to <24 m	1 or 2	5.5 kL/hr	1	If 1 manual or ELV pump of 5.5 kL/hr is used — 11 kL/hr If 2 manual or ELV pumps of 5.5 kL/hr are used — 5.5 kL/hr

Chapter 4 Arrangement, accommodation and personal safety

(Required outcomes: Schedule 1 Division C)

4.1 Sleeping berths

A suitable sleeping berth must be provided for each person staying on board overnight.

Note Temporary arrangements including hammocks, mattresses, swags and sleeping mats are not considered suitable sleeping berths. Settee berths may be suitable if they are an appropriate size.

4.2 Seating

(1) Seating must be provided for each person on the vessel.

(2) Seating must be in a location:

(a) that is protected from the force of the sea; and

(b) where the likelihood of falling overboard or injury is minimal.

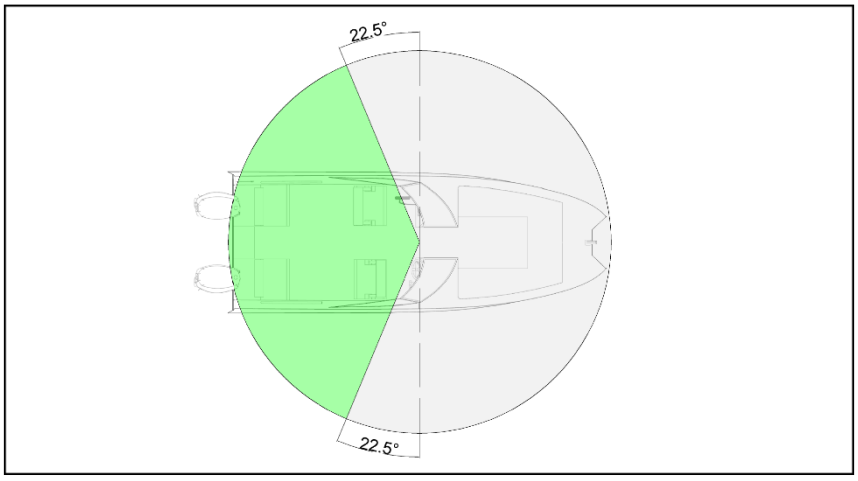
(3) If continuous seating is used, there must be at least a 475mm width of seating for each person.

4.3 Vision from helm

(1) Windshields and side windows that cannot be seen over and which are located in the grey sector shown in figure 1, must not be colour tinted and must have a light transmission of not less than 70%.

Note Generally grey tints are the most suitable tints to fulfil this criterion.

Figure 1 Vision from helm



(2) Tinting must not interfere with the recognition of the colour of lights seen through the window.

(3) Every windshield or forward window at a steering position must be:

(a) arranged so that in heavy rain it can be seen over, opened, or part opened, so that visibility can be maintained; or

(b) provided with windscreen wipers or Clearview screens.

4.4 Strength of glazing

(1) The windshield and windows must comply with either:

(a) AS/NZS 2080; or

(b) ISO 12216; or

(c) ABYC H-3.

4.5 Weather deck arrangement

(1) This section applies to bulwarks, guardrails, slip resistant surfaces, foot stops, toe rails, handholds and reboarding on a vessel.

(2) The vessel must comply with one of the following standards that applies to the vessel:

(a) ISO 15085; or

(b) ISO 6185 Parts 1 - 4 as applicable.

(c) NSCV Part C, Section 1; or

(d) the requirements set out in 4.5.2 to 4.5.7.

4.5.2 Bulwarks and guardrails

(1) An exposed deck that may be accessed by a person must have bulwarks or guardrails fitted to the deck near its outside edge which:

(a) are at least 600 mm high; and

(b) are not angled outboard more than 10 º from the vertical, at any point greater than 50mm above the deck.

(2) For a guardrail fitted in accordance with (1):

(a) the courses must be horizontal or at an angle of no more than 30º from horizontal;

(b) the courses must be spaced no more than 230 mm apart;

(3) A bulwark or guardrail made of rigid material, must be designed and constructed to withstand:

(a) a point load of 600 N applied at any point in any direction; and

(b) a uniform load of 350 N/m applied to the top rail in any direction.

(4) A rails constructed using courses of flexible wire or similar material must be designed and constructed so that:

(a) the horizontal courses have a ultimate tensile strength of no less than 9kN; and

(b) the components used to make the horizontal courses are readily visible for inspection.

Examples of similar material: nylon, rope, stainless steel wire rope.

(5) If a bulwark or guardrail has a built in gate;

(a) the gate must not open outwards; and

(b) the bulwark or guardrail must comply with the applicable design and construction requirements mentioned in (3) or (4) with the gate open.

(6) Stanchions for guardrails must meet the following requirements:

(a) the maximum spacing between stanchions must be no more than 2150 mm; and

(b) when tested without courses attached, and with the force directed outboard at the point of intersection of the uppermost course and the stanchion:

(i) the deflection in the direction of the applied force must be no more than 50 mm at the point of application of the force when a horizontal force of 280 N is applied; and

(ii) there must be no permanent deformation of the stanchion after the force mentioned in paragraph (iii) is applied; and

(iii) the stanchion must withstand a horizontal force of 560 N without breaking.

4.5.3 Small side decks

On a side-deck that is intended to be used for occasional access only, the bulwark or guardrail mentioned 4.5.2 may be omitted, provided the deck is no less than 100mm wide, has a non-slip finish and is provided with suitable grab rails.

Example of occasional use a deck used to access a foredeck for anchoring or retrieval of an anchor.

4.5.4 Foot stops and toe rails

(1) A vessel fitted with guardrails must have a foot stop or toe rail that:

(a) runs along, and is located as close as possible to, the outboard edge of the accessible portion of the deck; and

(b) at its upper edge perpendicular to the deck, measures at least 25 mm.

(2) A foot stop or toe rail may have gaps in it for stanchions, pulpit feet, cleats and other similar fittings and also for water drainage.

(3) A gap in a foot stop or toe rail must be no more than 100 mm measured from one edge of the fitting, foot stop or toe rail to the adjacent edge.

4.5.5 Slip resistant surfaces

(1) Deck areas of a vessel must have a slip resistant surface which, if not continuous, must have a maximum spacing between slip resistant patches of no more than:

(a) for a glazed area — 500 mm; and

(b) for any other area — 75 mm.

4.5.6 Handholds

(1) A vessel must have enough handholds to ensure safe movement of people around the vessel while it is underway.

Note Handholds include handrails, overhead rails, handles on fixed seats, pillars, and cleated handrails on coach houses.

(2) Handholds must be:

(a) designed to allow a secure grip; and

(b) installed in a location that takes into account the physical characteristics of an average person; and

(c) spaced no more than 1.5 m apart; and

(d) able to withstand a horizontal force of 1500 N without any permanent yield or rupture.

4.5.7 Means of reboarding

(1) There must be a means of reboarding a vessel that:

(a) is accessible to a person in the water:

(i) without the assistance of another person; and

(ii) without the use of tools or aids; and

(b) if the means of reboarding is a ladder or stair — has its lowest rung or step at least 300 mm below the lightest loaded waterline.

4.6 Arrangements for embarkation

(1) The means of embarking a vessel must take into account:

(a) variations in height of the landing surface (this may include a structure or another vessel); and

(b) tidal range; and

(c) movement of the vessel due wind, wave or current; and

(d) the surfaces that a person boarding or disembarking is likely to walk on; and

(e) the likely competence and physical characteristic of the persons likely to be boarding or disembarking the vessel.

4.7 Potable water tanks

A potable water tank fitted on a vessel must:

(a) have no common boundary with any other tank containing a liquid other than potable water; and

(b) be labelled as a potable water tank at the filler point; and

(c) be able to be drained completely from the bottom of the tank.

Note A vessel may be subject to State and territory wastewater management requirements.

4.8 Swimming pools and spas

(1) This section applies to a swimming pool, spa or any other open cavity on a vessel that:

(a) can be filled to a depth of at least 300mm; and

(b) can hold at least 100 litres.

(2) A swimming pool, spa or other open cavity mentioned in subsection (1) must be fenced in accordance with AS 1926.1.

Note Subsections (1) and (2) are not intend to apply to a bathtub.

Chapter 5 Watertight and weathertight integrity

(Required outcomes: Schedule 1 Division D)

5.1 Standards for watertight and weathertight integrity

(1) This section applies to weatherdeck drainage, portlights, hatches, deadlights and doors on a vessel.

(2) The items mentioned in subsection (1) must comply with all the standards that apply to them in accordance with one of the following:

(a) NSCV Part C, Section 2; or

(b) AS 1799.1; or

(c) both ISO 12216 and ISO 11812; or

(d) each of:

(i) ABYC H-3; and

(ii) ABYC H-4; and

(iii) ABYC H-27.

Chapter 6 Construction

(Required outcomes: Schedule 1 Division E)

6.1 Structure of vessels

(1) The structure of a vessel must meet the applicable requirements of one of the following standards that applies to the vessel:

(a) NSCV Part C, Section 3; or

(b) ISO 12215 Parts 1 to 9 as applicable; or

Note Not all Parts 1 to 9 of ISO 12215 will apply to a vessel. The vessel must comply with those Parts of ISO 12215 relevant to the vessel.

(c) ISO 6185 Parts 1 to 4 as applicable; or

Note Not all Parts 1 to 4 of ISO 6185 will apply to a vessel. The vessel must comply with the part of ISO 6185 for the type of vessel.

(d) AS 4132.1; and either

(i) AS 4132.2; or

(ii) AS 4132.3.

Note Depending on the vessel type, the vessel must comply with either Parts 1 and 2, or Parts 1 and 3, of AS 4132.2.

(2) For 6.1(1)(b) & (c) the design category applied to the vessel must be in accordance with table 7.

Chapter 7 Fire safety

(Required outcomes: Schedule 1 Division F)

7.1 Standards for fire safety

(1) Excluding the section relating to portable fire extinguishers, a vessel must comply with either:

(a) the applicable standards specified for Class 2 vessels in NSCV Part C, Section 4; or

(b) both:

(i) ISO 9094; and

(ii) ISO 21487.

Note The requirements for the kind and quantity of portable fire extinguishers are mentioned in Chapter 3 and the standards for extinguishers are mentioned in Schedule 2.

Chapter 8 Machinery, propulsion, exhaust, steering and fuel

(Required outcomes: Schedule 1 Division G)

8.1 Powering

(1) For a vessel, other than a sailing vessel, the maximum powering of the vessel must not exceed the limit set out in any one of the following standards that applies to the vessel:

(a) ABYC H-26;

(b) ABYC H-35

(c) AS 1799.1;

(d) ISO 8665;

(e) ISO 6185 Parts 1 – 4 as applicable;

(2) A vessel with a shaft must meet either:

(a) ABYC P-6; or

(b) Chapter 3 of NSCV Part C, Subsection 5A.

8.2 Engine controls

(1) An engine must be fitted with start-in-gear protection.

(2) If there is more than 1 helm position, the controls at each helm position must be lockable when not in use.

8.3 Arrangements for engine monitoring

(1) An engine that is used to operate a vessel must be fitted with instrumentation to enable critical engine parameters to be monitored. Subject to the requirements of the engine manufacturer the following instrumentation should be provided:

(a) engine lubricating oil pressure;

(b) engine jacket cooling water outlet temperature;

(c) engine gearbox lubricating oil pressure;

(d) charging rate of generator or state of battery charge;

(e) rotational speed.

8.4 Engine exhaust

(1) An exhaust system for a vessel must comply the requirements for exhaust systems contained within either:

(a) NSCV Part C, Subsection 5A; or

(b) ABYC P-1.

(2) If an exhaust system discharges exhaust near the waterline, the system must be designed to prevent water from:

(a) being syphoned back to the engine; or

(b) flooding the engine space.

(3) An exhaust system must be arranged to prevent exhaust gases from entering the following:

(a) air conditioning systems;

(b) air intakes;

(c) spaces where people are likely to be present.

(4) Exhaust system piping must:

(a) be constructed of material resistant to heat and exhaust products and suited to the application;

(b) be of corrosion-resistant material or of heavy-gauge construction where exhaust pipes come into contact with seawater or sea spray;

(c) only use reinforced rubber hose exhaust pipes on engines having water-cooled exhausts.

(i) reinforced rubber hose must be secured at each end by at least two corrosion-resistant clips.

Note Only certain grades of stainless steel are suitable for use in exhaust systems. Examples of suitable stainless steels are UNS S31254 and DIN 24856.

8.5 Alternative means of starting the propulsion engine - vessels in operational area C

A vessel operating in operational area C must have an alternative means of starting the propulsion engine.

Examples of alternative means pull start mechanism, hand crank, a second battery with cross over or paralleling switch.

8.6 Remote shutdown of main propulsion engines

A vessel's engine must be able to be shut down quickly:

(a) from outside the engine space; and

(b) by a means that is able to operate if exposed to heat and flame from a fire in the engine enclosure.

8.7 Protection from moving parts

Guards must be placed around any moving machinery parts to protect people from injury.

8.8 Fuel systems

(1) The fuel system of a vessel must comply with:

(a) Chapter 4 of NSCV Part C, Subsection 5A; or

(b) all of the following standards:

(i) ISO 21487; and

(ii) ISO 10088; and

(iii) ISO 11105; or

(c) where a portable fuel tank is used on a vessel:

(i) it must meet AS/NZS 2906; and

(ii) the flexible fuel line connecting the portable tank must be supplied as part of the outboard engine installation (OEM).

(2) If the fuel system complies with subclause (1)(b):

(a) the installation of the fuel system must comply with ISO 10088; and

(b) a fuel shut off valve must be fitted to the tank, unless the tank is underdeck, sealed

and in a cofferdam with no potential source of ignition, in which case the fuel shut off valve can be located at the filter instead of fitted at the tank; and

(c) fuel lines between the fuel filter and outboard engines may be as supplied as part of the outboard engine installation (OEM) otherwise flexible fuel lines installed as part of the fuel system must comply with either:

(i) ISO 7840; or

(ii) J1527.

Note for 8.11(2)(b) Examples of sources of ignition are underdeck 12 volt wiring or 12 volt bilge pumps.

8.9 Steering systems

(1) A vessel's rudder must be designed and constructed in accordance with either:

(a) Chapter 6 of NSCV Part C, Subsection 5A; or

(b) ISO 12215-8.

(2) The steering system of a vessel must meet one of the following standards that applies to the vessel:

(a) ISO 8847; or

(b) ISO 8848; or

(c) ISO 9775; or

(d) ISO 10592; or

(e) ISO 13929; or

(f) ISO 25197; or

(g) Chapter 6 of NSCV Part C, Subsection 5A.

8.10 Hull penetration fittings

(1) A penetration fitting through the hull of a vessel must meet one of the following standards that applies to the vessel:

(a) NSCV Part C, Subsection 5A; or

(b) ISO 9093-1; or

(c) ISO 9093-2.

8.11 Limitations on inboard petrol engines

(1) A vessel may have an inboard petrol engine only if:

(a) the vessel is ≤ 7.5 m long: and

(b) the power of the engine is ≤ 300 kw.

(2) An inboard petrol engine fitted with a carburettor is not permitted.

(3) A vessel fitted with an inboard petrol engine must meet all of the following standards:

(a) ISO 11105; and

(b) ISO 8846; and

(c) ISO 15584.

(4) A powered ventilation system must be fitted to any compartment containing an inboard petrol engine. The airflow capacity and intake duct location for the blower or combination of blowers must comply with ISO 11105.

(5) The vessel must be provided with a notice to the operator:

(a) located as close as practicable to each ignition switch; and

(b) clearly visible to the operator.

(6) The notice mentioned in (5) must state:

(a) WARNING;

(b) petrol vapours can explode, resulting in injury or death;

(c) operate blower for 4 min before starting engine;

(d) run blower when boat is operating below cruising speed.

Example of notice for (5) and (6)



(7) A vessel with an inboard petrol engine must have a detector fitted in both:

(a) the engine compartment; and

(b) the vessel's bilge.

(8) The detector mentioned in (7) must:

(a) be able to:

(i) analyse a gaseous mixture of petrol at the sensing element to determine the level of gas; and

(ii) indicate visually and audibly if any gas is detected; and

(iii) provide an alert if the gas level reaches 20% of the lower explosive limit of the gas; and

(b) contain an indicator that shows whether it is working; and

(c) be periodically inspected and tested in accordance with the manufacturer's instructions.

(9) A vessel with an inboard petrol engine must prominently display 'no smoking' signs.

(10) An inboard petrol engine must incorporate measures, including all of the following, to ensure that the engine's starting circuit is spark arrested:

(a) a spark arrested starter motor; and

(b) spark plug leads with sealed boots; and

(c) wiring that has rubber boots, sealed lug ends and terminals encased in sheathed

tubing to prevent rubbing; and

(d) Fuel piping made of rigid metallic seamless tube or pipe, or flexible hose incorporating a braided metal sheath with crimped end fitting; and

(e) a circuit breaker, outside the fuel or engine compartment, that protects the electrical system; and

(f) batteries located outside the engine space.

(11) On a vessel with an inboard petrol engine, electrical connections, devices and wiring in spaces that are vulnerable to vapour must be intrinsically safe and comply with AS/NZS 3004.2.

(12) The electrical equipment and wiring within the bilge and engine compartments are to undergo yearly inspection for evidence of deterioration. Where deterioration is detected in any of the electrical systems or wiring, it must be repaired, replaced or tested to ensure that it remains safe and fit for purpose.

Example of testing insulation resistance testing

(13) Documentary evidence of inspections, repairs, replacements and any testing of the electrical systems are to be kept with the vessels maintenance records.

Chapter 9 Electrical

(Required outcomes: Schedule 1 Division H)

9.1 Electrical requirements

(1) The electrical systems of a vessel must comply with AS/NZS 3004.2.

Note State or territory requirements for electrical installations may also apply to the vessel.

(2) If a vessel has an alternator charged single battery DC system to which the standard mentioned in subsection (1) does not apply, the system must:

(a) be no more than 24v; and

(b) have its battery:

(i) as close as practicable to the source of charge; and

(ii) enclosed in a battery box that:

(A) is secure; and

(B) has a lid; and

(C) is well ventilated; and

(D) is in a position where it would not normally be exposed to water; and

(c) have a means to isolate the battery that is remotely located from the battery box; and

(d) have a marine grade, switched distribution panel to which navigation and communication equipment are connected in accordance with the manufacturer's instructions; and

(e) have cabling that is:

(i) marine grade; and

(ii) correctly sized; and

(iii) properly supported; and

(iv) not exposed to water or weather.

(f) If electrical wiring passes through a deck or bulkhead that is required to be constructed in a watertight or fire rated manner, this manner of construction must be maintained.

(g) If a wiring system penetrates a solid surface, the wiring must be protected from damage.

Chapter 10 Buoyancy, stability, loading and flotation

(Required outcomes: Schedule 1 Division I)

10.1 Freeboard and intact stability requirements

(1) A vessel must comply with one of the following standards that applies to the vessel:

(a) NSCV Part C, Subsection 6A;

(b) AS 1799.1;

(c) ISO 12217 Parts 1 to 3 as applicable;

(d) ISO 6185 Parts 1 to 4 as applicable;

10.2 Maximum load capacity

(1) A vessel, other than one which complies with 10.1(1)(a), must not exceed the maximum load capacity specified in any one of the following standards that applies to the vessel:

(a) ABYC H-5;

(b) AS 1799.1;

(c) ISO 14946;

(d) ISO 6185 parts 1 to 4 as applicable.

10.3 Flotation and decking

(1) A vessel must comply with one of the options provided in table 6 that applies to the vessel.

(2) A vessel must not use option 3 of table 6 unless a risk assessment has been conducted and documented in the vessel's safety management system (SMS) and the assessment has to have shown that it is safe to do so.

(3) Option 3 of table 6 is not considered suitable for vessels operating in waters where it is unsafe for persons to be immersed in the water.

Example of the kinds of waters where it is unsafe for persons to be immersed may include those waters where the mean monthly water temperature is <15 degrees or the waters are infested with hazardous flora or fauna such as sharks, crocodiles or Irukandji jellyfish.

(4) The standard for loading and flotation must be consistent, if a standard from one standard-setting organisation is used for determining compliance with clause 10.2 a standard from another standard-setting organisation must not be used for determining compliance with clause 10.3.

(5) Safety equipment mentioned in table 6, including lifejackets, buoyant appliances, life rafts and dinghies, must meet the standards for its design, manufacture and performance mentioned for the equipment in Schedule 2 as specified in tables 1 to 4 for the vessels operational area.

(6) Lifejackets mentioned in table 6 must be of the type specified for the vessels operational area in accordance with tables 1 to 4 as applicable.

Table 6 – Acceptable flotation and decking standards

Type of vessel	Option 1	Option 2	Option 3 *Note* This option is limited to vessels that have conducted a risk assessment that is documented in the vessel's SMS and the assessment has to have shown that it is safe to use this option. See clauses 10.3 (2) and (3).
Vessel <6 m long	The vessel must meet the criteria for **level** flotation contained in one of the following standards: (a) NSCV Part C, Subsection 6B; (b) AS1799.1; (c) ISO 12217-3; (d) ABYC H-8.	(a) The vessel must carry a life raft or dinghy sufficient to support all persons on board; and (b) The vessel must meet the criteria for **basic** flotation contained in one of the following standards: (i) NSCV Part C, Subsection 6B; (ii) AS1799.1; (iii) ISO 12217-3; (iv) ABYC H-8.	(a) A lifejacket must be worn by each person on board; and (b) The vessel must either: (i) carry buoyant appliances sufficient to support all persons on board if they are not designed to be re-righted if capsized; or (ii) be fitted with grab lines secured to the side of the vessel, and (c) The vessel must meet the criteria for **basic** flotation contained in one of the following standards: (i) NSCV Part C, Subsection 6B; (ii) AS1799.1; (iii) ISO 12217-3; (iv) ABYC H-8. *Example of a vessel designed to be re-righted:* sailing dingy *Note for (a)* see standard for lifejackets mentioned in Schedule 2 for persons wearing diving equipment. *Note for (c)(iii)* a vessel is taken to comply with the requirements of basic flotation if it meets the flotation tests to be applied to sailing boats specified in ISO 12217-3.

Vessel ≥6 m long	The vessel must meet the criteria contained in one of the following standards: (a) NSCV Part C, Subsection 6B — the criteria for **level** flotation; (b) AS1799.1 — the criteria for **level** flotation; (c) ISO 12217-1 — the criteria for flotation contained in clause 6.8.	(a) The vessel must carry a life raft or dinghy sufficient to support all persons on board; and (b) The vessel must meet one of the following: (i) the criteria for **basic** flotation in NSCV Part C, Subsection 6B; (ii) the criteria for decked or well decked vessels, contained in NSCV Part C, Subsection 6B; (iii) the criteria for **basic** flotation in AS1799.1; (iv) the criteria for fully enclosed boats, contained in AS 1799.1; (v) the criteria for any of options 1 to 5 of Table 2 of ISO 12217-1.	Vessels <7.5m — (a) a lifejacket must be worn by each person on board; and (b) the vessel must carry buoyant appliances sufficient to support all persons *Note for (a)* see standard for lifejackets mentioned in Schedule 2 for persons wearing diving equipment. All vessels (including those <7.5m) — the vessel must meet one of the following: (a) the criteria for **basic** flotation in NSCV Part C, Subsection 6B; (b) the criteria specified for decked or well decked vessels, contained in NSCV Part C, Subsection 6B; (c) the criteria for **basic** flotation in AS1799.1; (d) the criteria specified for fully enclosed boats, contained in AS 1799.1; (e) the criteria specified for any of options 1 to 5 of Table 2 of ISO 12217-1.
Collared vessel, RIB or inflatable	The vessel must comply with the criteria of either: (a) ISO 6185 - Parts 1 to 4 as applicable; or (b) NSCV subsection C6B.		
Sailing Vessels ≥ 6m	(a) The vessel must comply with the criteria of ISO 12217-2:2015. (b) For vessels < 7.5m — a lifejacket must be worn by each person on board. (c) For vessels in operational area C — a life raft or dinghy sufficient to support all persons on board.		

Chapter 11 Compliance with the European Recreational Craft Directive

(Chapter 2, subsection 2.2(b))

11.1 Application

This Chapter applies to a vessel that complies with the European Recreational Craft Directive.

Note 1 A vessel that complies with this Chapter is not required to meet the deemed to satisfy solutions of Chapter 3 – Chapter 10, except as set out in this Chapter – see section 2.2.

Note 2 Complying with the ISO standard in force under the RCD allows a vessel to become CE certificated. Compliance with this Section may be determined by referencing the standards mentioned for the vessel on its Declaration of Conformity for CE certification or by directly verifying the vessel against the standards mentioned in this Part.

11.2 Safety equipment

The vessel must be equipped with the safety equipment specified in Chapter 3.

11.3 Vessels with a shaft

Where the vessel has a shaft, the vessel must comply with Chapter 8, section 8.1.

11.4 Inboard petrol engines

The vessel may only have an inboard petrol engine installed where it meets the requirements of Chapter 8, section 8.11.

11.5 Electrical

The electrical systems of a vessel must meet the standard set out in Chapter 9.

11.6 Buoyancy, stability, loading and flotation

The vessel must comply with Chapter 10.

Note A Declaration of Conformity can be used as verification that a vessel has met the criteria and test procedures of the ISO standards mentioned in section 10.3.

11.7 RCD standards

(1) The vessel must:

(a) comply with the European Recreational Craft Directive using the acceptable modules for the operational area indicated in table 7 and described in table 8;

(b) have a CE (Conformité Européene) marking that:

(i) has been affixed to the vessel in accordance with the Recreational Craft Directive that was in force at the time the marking was applied;

(ii) confirms that the vessel meets the essential safety requirements mentioned in the Recreational Craft Directive as in force when the marking was applied.

Table 7 – Acceptable Recreational Craft Directive (RCD) Modules

Operational Area	Measured Length	RCD design category	Minimum CE modules							
			A1	B+C	B+C1	B+D	B+E	B+F	G	H
Inland waters	$L_m \leq 12$	D	✓	✓	✓	✓	✓	✓	✓	✓
E	$L_m \leq 24$	C	✓	✓	✓	✓	✓	✓	✓	✓
D	$L_m \leq 24$	C		✓	✓	✓	✓	✓	✓	✓
C	$L_m \leq 24$	B		✓	✓	✓	✓	✓	✓	✓

Table 8 – Recreational Craft Directive Modules

1994 module	2003 module	2013 module	Title	Description of module
A	A	A	Internal production control	A self-assessment module with no involvement with a notified body or any other third party.
Aa	Aa	A1	Internal production control plus supervised product testing	Stability and buoyancy data tests to be verified by a notified body but all other criteria are self- assessed.
B	B	B	EC type-examination	A type approval procedure under which the responsible person submits a completed vessel and its technical documentation for assessment by a notified body.
C	C	C	Conformity to type based on internal production control	A vessel that is of the same production run as a vessel that was type approved under Module B may use Module C to submit a self-declaration of conformity by the builder based on internal production control.
-	-	C1	Conformity to type based on internal production control plus supervised product testing	A vessel that is of the same production run as a vessel that was type approved under Module B may use Module C1 if it undergoes stability and buoyancy tests supervised by a notified body.

1994 module	2003 module	2013 module	Title	Description of module
D	D	D	Conformity to type based on quality assurance of the production process	A vessel is designed and constructed based on quality assurance of the production process. Compliance with ISO 9001:2008 *Quality management systems – requirements* is not required but the chosen quality assurance procedure must be approved by a notified body.
E	E	E	Conformity to type based on product quality assurance	Approved quality assurance procedure and final product inspection and testing under the oversight of a notified body.
F	F	F	Conformity to type based on product verification	Inspection and testing under the oversight of a notified body of each vessel.
G	G	G	Conformity based on unit verification	Notified body examines each vessel (normally custom built) to assess conformity.
H	H	H	Conformity based on full quality assurance	Equivalent to the quality management approach of ISO 9001:2008 *Quality management systems – requirements*. Approach similar to Module D but with the addition of quality management of the design process using a procedure that must be approved by a notified body.

Note A term that is used in tables 7 or 8 which is not defined in this standard has the meaning given by the Recreational Craft Directive.

11.8 Documentation of CE compliance for the survey process

(1) The following documentation is to be made available to the accredited marine surveyor who will survey the vessel and supplied to the National Regulator as part of the application for a Certificate of Survey:

(a) a copy of the certificate of conformity or declaration from the builder; and

(b) a copy of the type approval certificate from the notified body (where applicable); and

(c) a copy of the notified body certificates (where applicable).

(2) The documentation provided to the accredited marine surveyor must confirm that the CE certification modules provided for the vessel are as specified table 7.

11.9 Alterations

Where a CE marked vessel has been significantly altered after its initial construction, a copy of the following documents must also be provided to the accredited marine surveyor and National Regulator:

(a) vessel drawings that show the alterations; and

(b) written evidence that confirms that further assessment of the vessel has been undertaken to re-verify that that vessel and its stability comply with the applicable ISO standard for the type of vessel; and

(c) where the vessels lines have been altered – line plans.

11.10 Limitations that will be applied to the vessel

The National Regulator will include the limitations mentioned in table 9 on a vessel's Certificate of Survey where it uses this Chapter to meet the required outcomes mentioned in Schedule 1.

Table 9 – Limitations that will be applied to vessel

Operational Area	RCD design category	Limitations
C	B	Not to operate in wave heights >4 m significant or wind force >7 Beaufort
D	C	Wave heights ≤2 m and wind force ≤6 Beaufort
E		Not to operate in wave heights >2 m significant or wind force >6 Beaufort
Inland waters	D	Except for sailing vessels, not to operate in wind force >4 Beaufort

Chapter 12 Standard houseboats

(Chapter 2, subsection 2.2(d))

12.1 Application

This Chapter applies to a standard houseboat.

Note A vessel that complies with this Chapter is not required to meet the deemed to satisfy solutions of Chapter 3 – Chapter 10, except as set out in this Chapter – see section 2.2.

12.2 Safety equipment

A standard houseboat must be equipped with the safety equipment specified in Chapter 3.

12.3 Arrangement, accommodation and personal safety

12.3.1 Sleeping berths

A suitable sleeping berth must be provided for each person staying on board overnight a standard houseboat.

Note Temporary arrangements including hammocks, mattresses, swags and sleeping mats are not considered suitable sleeping berths. Settee berths may be suitable if they are an appropriate size.

12.3.2 Seating

(1) Seating must be provided for each person on a standard houseboat.

(2) Seating must be in a location:

(a) that is protected from the force of the sea; and

(b) where the likelihood of falling overboard or injury is minimal.

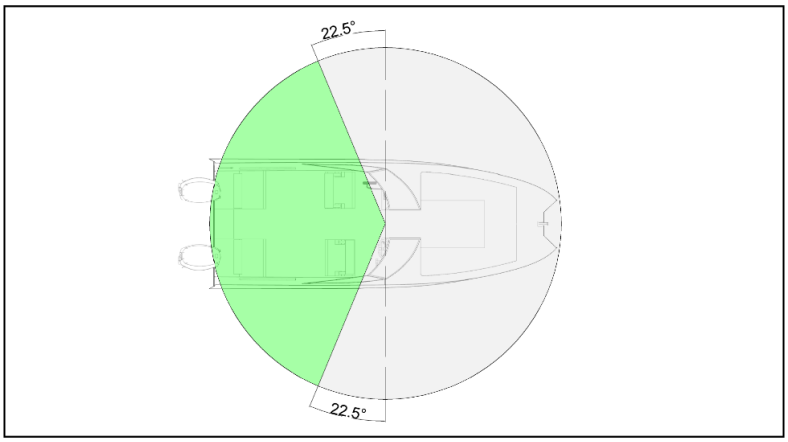
(3) If continuous seating is used, there must be at least a 475mm width of seating for each person.

12.3.3 Vision from helm

(1) Windshields and side windows that cannot be seen over and which are located in the grey sector shown in figure 1, must not be colour tinted and must have a light transmission of not less than 70%.

Note Generally grey tints are the most suitable tints to fulfil this criterion.

Figure 1 Vision from helm



(2) Tinting must not interfere with the recognition of the colour of lights seen through the

window.

(3) Every windshield or forward window at a steering position must be:

(a) arranged so that in heavy rain it can be seen over, opened, or part opened, so that visibility can be maintained; or

(b) provided with windscreen wipers or Clearview screens.

12.3.4 Strength of glazing

A standard houseboat must meet the glazing requirements of the Building Code of Australia for a Class 1 building, taking into account a maximum wind pressure of 375 Pa and other design loadings from AS 4132.1.

Note The human impact considerations of the Building Code of Australia mean that glass doors will normally need to be Grade A safety glazing.

12.3.5 Potable water tanks

A potable water tank fitted on a standard houseboat must:

(1) have no common boundary with any other tank containing a liquid other than potable water; and

(2) be labelled as a potable water tank at the filler point; and

(3) be able to be drained completely from the bottom of the tank.

Note A vessel may be subject to State and territory wastewater management requirements.

12.3.6 Swimming pools and spas

(1) This section applies to a swimming pool, spa or any other open cavity on a standard houseboat that:

(a) can be filled to a depth of at least 300mm; and

(b) can hold at least 100 litres.

(2) A swimming pool, spa or other open cavity mentioned in subsection (1) must be fenced in accordance with AS 1926.1.

Note Subsections (1) and (2) are not intend to apply to a bathtub.

12.3.7 Small side decks

On a side-deck that has no decks below it and is intended to be used for occasional access only, the bulwark or guardrail mentioned in section 12.3.8 may be omitted, provided the deck is no less than 100mm wide, has a non-slip finish and is provided with suitable grab rails.

Example of occasional use a deck used to access a foredeck for anchoring or retrieval of an anchor.

12.3.8 Bulwarks and guardrails

(1) An exposed deck that may be accessed by a person must have bulwarks or guardrails fitted to the deck near its outside edge which meet the following requirements:

(a) are at least 850 mm high; and

(b) are not angled outboard more than 10 º from the vertical, at any point greater than 50mm above the deck.

(2) A standard houseboat must have guardrails with:

(a) vertical courses:

(i) at least 600 mm long; and

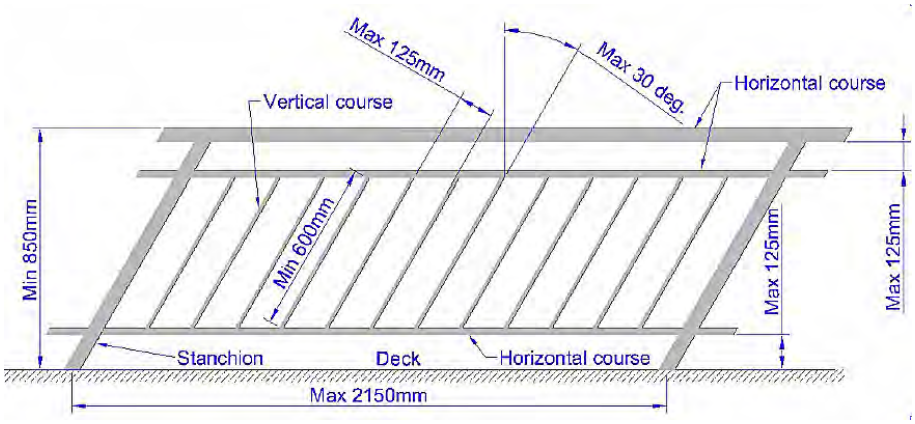
(ii) at an angle of no more than 30º from vertical; and

(iii) spaced no more than 125 mm apart: and

(b) a distance of no more than 125 mm between any horizontal courses located at top or bottom.

Note For a visual representation of these requirements, see Figure 2.

Figure 2 Houseboat guardrail geometry



(3) An opening in a bulwark, including a freeing port, must be protected by palings, bars or other barriers with a gap between them that is not large enough for a 125 mm diameter sphere to pass through.

(4) A bulwark or guard rail, must be designed and constructed to withstand:

(a) a point load of 890 N applied at any point in any direction; and

(b) a uniform load of 725 N/m applied to the top rail in any direction.

(5) If the guard rail has a built in gate, it must

(a) comply with subsection (4) with its gate open; and

(b) any gate in the deck rails must not open outwards.

(6) Stanchions for guardrails must meet the following requirements:

(a) the maximum spacing between stanchions must be no more than 2150 mm; and

(b) when tested without courses attached, and with the force directed outboard at the point of intersection of the uppermost course and the stanchion:

(i) the deflection in the direction of the applied force must be no more than 50 mm at the point of application of the force when a horizontal force of 280 N is applied; and

(ii) there must be no permanent deformation of the stanchion after the force mentioned in paragraph (iii) is applied; and

(iii) the stanchion must withstand a horizontal force of 560 N without breaking.

12.3.9 Slip resistant surfaces

(1) Open deck areas of a vessel must have a slip resistant surface which, if not continuous, must have a maximum spacing between slip resistant patches of no more than:

(a) for a glazed area — 500 mm; and

(b) for any other area — 75 mm.

Note A deck hatch is an example of a glazed area in which the lateral sides of the area are not fitted with foot stops.

12.3.10 Handholds

(1) A standard houseboat must have enough handholds to ensure safe movement of people around the vessel while it is underway.

Note Handholds include handrails, overhead rails, handles on fixed seats, pillars, and cleated handrails on coach houses.

(2) Handholds must be:

(a) designed to allow a secure grip; and

(b) installed in a location that takes into account the physical characteristics of an average person; and

(c) spaced no more than 1.5 m apart; and

(d) able to withstand a horizontal force of 1500 N without any permanent yield or rupture.

12.3.11 Means of reboarding

(1) There must be a means of reboarding a standard houseboat that:

(a) is accessible to a person in the water:

(i) without the assistance of another person; and

(ii) without the use of tools or aids; and

(b) if the means of reboarding is a ladder or stair — has its lowest rung or step at least 300 mm below the lightest loaded waterline; and

(c) is located at least 2 m from the propeller.

12.3.12 Arrangements for embarkation

(1) The means of embarking a standard houseboat must take into account:

(a) variations in height of the landing surface (this may include a structure or another vessel); and

(b) tidal range; and

(c) movement of the vessel due wind, wave or current; and

(d) the surfaces that a person boarding or disembarking is likely to walk on; and

(e) the likely competence and physical characteristic of the persons likely to be boarding or disembarking the vessel.

12.4 Watertight and weathertight integrity

The watertight and weathertight integrity of a standard houseboat must meet the standard set out in Chapter 5.

12.5 Structure of standard houseboats

(1) The hull and scantlings of the standard houseboat must meet the applicable requirements of one of the following standards that applies to the vessel:

(a) AS 4132.1; and either

(i) AS 4132.2; or

(ii) AS 4132.3; or

Note Depending on the vessel type, the vessel must comply with either Parts 1 and 2, or Parts 1 and 3, of AS 4132.2.

(b) ISO 12215:2002 Parts 1 to 9 as applicable; or

Note Not all Parts 1 to 9 of ISO 12215 will apply to a vessel. The vessel must comply with those Parts of ISO 12215 relevant to the vessel.

(c) Lloyds rules as listed in Table 2 of NSCV Part C, Section 3.

(2) The cross structure of a standard houseboat must be designed to withstand a bending moment equal to the product of the fully loaded displacement and the beam between the hull centres.

$$M = \Delta \times D$$

Where

$M =$ the calculated bending moment in kNm

$\Delta =$ the mass displacement of the vessel in the fully loaded condition in tones

$D =$ the distance between the centre of the vessels pontoons

(3) The superstructure of a standard houseboat must comply with the requirements for a Class 1 dwelling under the Building Code of Australia.

12.6 Fire safety

A vessel must comply with either:

(a) NSCV Part C, Section 4; or

(b) both:

(i) ISO 9094, excluding the section relating to Portable Fire Extinguishers (section 7.5 in ISO 9094:2015); and

(ii) ISO 21487:2012.

Note The requirements for the kind and quantity of portable fire extinguishers to be carried on-board a standard houseboat are mentioned in Chapter 3 and the standards for extinguishers are mentioned in Schedule 2.

12.7 Machinery, propulsion and fuel systems

(1) A standard houseboat must have enough manoeuvring power to maintain its course against a 20 knot wind coming from any direction.

(2) The fuel system of a standard houseboat must comply with:

(a) Chapter 4 of NSCV Part C, Subsection 5A; or

(b) all of the following standards:

(i) ISO 21487; and

(ii) ISO 10088; and

(iii) ISO 11105; or

(c) where a portable fuel tank is used:

(i) it must meet AS/NZS 2906; and

(ii) the flexible fuel line connecting the portable tank must be supplied as part of the outboard engine installation (OEM).

(3) If the fuel system complies with subclause (2)(b):

(a) the installation of the fuel system must comply with ISO 10088; and

(b) a fuel shut off valve must be fitted to the tank, unless the tank is underdeck, sealed and in a cofferdam with no potential source of ignition, in which case the fuel shut off valve can be located at the filter instead of fitted at the tank; and

(c) fuel lines between the fuel filter and outboard engines may be as supplied as part of the outboard engine installation (OEM) otherwise flexible fuel lines installed as part of the fuel system must comply with either:

(i) ISO 7840; or

(ii) J1527.

Note for (b) Examples of sources of ignition are underdeck 12 volt wiring or 12 volt bilge pumps.

12.8 Bilge

(1) A standard house boat must have a 4 kL/hr bilge pump located in each:

(a) unsealed compartment;

(b) compartment containing propulsion machinery or sea water pumping systems; and

(c) compartment containing overboard discharges or seawater intakes.

(2) Each bilge pump must:

(a) have a strainer fitted to the suction pipe to prevent the pump choking; and

(b) if an extra low voltage electric motor powers the bilge pump — the pump must meet ISO 8849.

12.9 Electrical

The electrical systems of a standard houseboat must meet the standard set out in Chapter 9.

12.10 Liquefied petroleum gas installations for appliances

Liquefied petroleum gas installations for appliances must comply with NSCV Part C, Subsection 5C.

Note 1 NSCV Part C, Subsection 5C requires gas appliances to be installed in accordance with AS5601.1.

Note 2 Any space used or intended to be used for sleeping including and combined living/sleeping areas are a bedroom for the purpose of AS 5601.1. It should be noted that AS5601.1 prohibits the installation of certain gas appliances such as un-flued gas heaters or heaters without flame safeguards within bedrooms.

12.11 Buoyancy, stability, loading and flotation

12.11.1 Reserve buoyancy

The reserve buoyancy of a standard houseboat must be calculated in accordance with Schedule 3.

12.11.2 Intact stability

(1) When a standard houseboat has a mass equal to the maximum number of persons to be carried on board the houseboat, loaded on its uppermost deck in the worst possible location for heel and trim, the houseboat must meet the following requirements:

(a) the angle of heel must be $\leq 7°$ from the upright; and

(b) the minimum freeboard of the hull on the heeled or immersed side, measured from

the inclined waterline to the intersection of the edge of the main deck line and sheerline of the main hull at its lowest point, must be ≥25% of the freeboard in the upright condition when fully loaded.

(2) For calculating the maximum number of persons to be carried on board — the weight to be attributed to each person is 80 kg.

12.11.3 Stability after flooding

(1) Pontoons must be subdivided by watertight bulkheads spaced at intervals of no more than 1200 mm along the length of the houseboat.

(2) A standard houseboat must not heel or trim so that the waterline crosses a line taken at 75 mm below the top of the pontoon.

(3) The line mentioned in subsection (2) (the margin line) must be at least 75 mm below the highest point of the enclosed buoyant volume at any point along the length of the hull.

Chapter 13 Deleted as part of Amendment 1, 2018

Schedule 1 Required outcomes

(Chapter 2, section 2.1)

Division A General

A.1 Materials, fittings and equipment

(1) All materials and fittings on a vessel used in the construction or fit-out of the vessel must be of a quality and maintained so that the vessel may be operated safely.

(2) All equipment on the vessel must work reliably and be maintained so that it may be operated safely.

A.2 Vessel design and construction

The vessel must be designed and constructed to ensure that it can be operated safely by persons without national law certificates of competency or seafarer qualifications or experience.

Division B Safety equipment

B.1 Kind and quantity

The vessel must be equipped with safety equipment of a kind and quantity that controls to an acceptable level the risks associated with the operation of the vessel, taking into account its operational area and the number of people who are permitted to be on board the vessel.

Note It is an offence for an owner or master of a vessel to operate, or cause or allow to be operated, an unsafe vessel — see Division 3 of Part 3 of the national law. This may include a vessel that does not carry the required safety equipment.

B.2 Design, construction, arrangement, care and maintenance

The vessel must have safety equipment on board that is designed, constructed, arranged and maintained so that it functions effectively and reliably when needed.

Note It is an offence for a person who designs or commissions marine safety equipment for a vessel not to ensure it is safe if used for its purpose — see Division 2 of Part 3 of the national law.

B.3 Operating instructions

Each person on board the vessel must be given enough information about the safety equipment on board for the person to be able to use it effectively when needed.

Division C Arrangement, accommodation and personal safety

C.1 Perception and situational awareness

The vessel must be arranged to ensure that the person operating the vessel has sufficient information to identify navigational hazards, assess the risks and take appropriate measures to control the risks in both normal and abnormal conditions of operation.

C.2 Prevention of collisions

The vessel must be arranged to enable the person operating the vessel to comply with the person's obligations under Marine Order 30.

C.3 Human factors

The vessel must be arranged to eliminate or reduce to an acceptable level the risk of operator error or fatigue arising from the design and arrangement of the operating station.

C.4 Facilitation of rapid movement

The space between deck and deck head on the vessel must allow the rapid movement of persons along escape and evacuation routes if there is an emergency.

C.5 Prevention of people falling over a bulwark or guardrail

The arrangements of the vessel must eliminate or reduce to an acceptable level the risk of a person falling overboard, including by falling over a bulwark or guardrail, taking into account the competence and physical characteristics of the people on board.

Example of arrangements

- the layout of the vessel
- the bulwarks and guardrails of a vessel in relation to the fixed seating.

C.6 Prevention of people falling overboard

The vessel must have arrangements that eliminate or reduce to an acceptable level the risk of a person falling from elevated locations on the vessel, taking into account the competence and physical characteristics of the people on board.

C.7 Prevention of people on deck from falling

The vessel must have arrangements that are capable of preventing a person on the deck from falling (either overboard or from elevated locations) due to water on deck, excessive deck angles or excessive accelerations.

C.8 General requirements for means of access

A means of access to the vessel must be designed and constructed so that it:

(a) is landed clear of the edge of the wharf and any potential hazards such as mooring lines; and

(b) is positioned at an angle that will allow safe access; and

(c) is strong enough to withstand loads in normal and abnormal conditions; and

(d) is adequately secured to prevent accidental displacement; and

(e) allows for likely variations in quay levels, tidal levels and vessel freeboard; and

(f) adjusts to allow for changing tidal levels and vessel freeboard if the access is to be deployed for extended periods; and

(g) is illuminated throughout its length if used in darkness; and

(h) protects persons from falling from the means of access, either from a height onto the wharf or between the vessel and the quayside.

C.9 Safe access to and from vessels

There must be a safe means for a person to board or disembark from the vessel to a wharf, pier or other landing structure, taking into account:

(a) variations in height of the landing structure; and
(b) tidal range; and
(c) movement of the vessel due to waves, wind or current; and
(d) the surfaces on which a person boarding or disembarking is likely to walk; and
(e) the likely competence and physical characteristics of the people likely to board or disembark from the vessel.

C.10 Access between a vessel and another vessel

If it is planned or likely that a person will need to be transferred on or off the vessel from or to another vessel, there must be safe means for transferring the person.

C.11 Recovery of persons who fall overboard

The vessel must have the means to enable a person overboard to be recovered on board without the person being exposed to additional risks.

C.12 Escape from hazards within spaces on the vessel

For each enclosed space on the vessel, there must be enough escape routes to eliminate or reduce to acceptable levels the exposure of persons on board the vessel to hazards such as fire, smoke, and flooding.

C.13 Facilitate movement for evacuation

The vessel must be designed, constructed and furnished so that in an emergency the people on board can move in an orderly and timely way to:

(a) places of assembly; and
(b) disembarkation points for evacuation into survival craft.

C.14 Facilitate movement between decks

Means of access between different deck levels on the vessel must be designed and constructed so that in an emergency the people on board can move quickly and avoid tripping hazards.

C.15 Safe conduct of operations — lighting

The vessel must be lit so that all operations can be conducted safely.

C.16 Protection from the sea

The vessel must be arranged to eliminate or reduce to acceptable levels the risk to persons from being physically injured because of exposure to seas that might come onto the deck of the vessel.

C.17 Protection from the weather

The vessel must be arranged to minimise the adverse health and fatigue effects on persons that arise from being exposed for extended periods to extremes of weather.

C.18 Protection from slip and fall hazards

The vessel must have measures to eliminate or reduce to acceptable levels the risks associated with fall and slip hazards.

Division D Watertight and weathertight integrity

D.1 Control of likelihood of excessive water on deck

The vessel must be designed and constructed to prevent or limit to an acceptable level the quantity of water encroaching on deck in normal and abnormal conditions arising from wave action, operational heeling moments, pitching motions or loading.

D.2 Control of risk of capsize or foundering by flooding through penetrations

The vessel must be designed and constructed so that penetrations through the effective watertight envelope must prevent or control to an acceptable level the unintentional entry of water into the vessel's enclosed buoyant volume that, in both normal and abnormal conditions, might increase the risk of the vessel capsizing or sinking.

D.3 Preservation of function

The vessel must have arrangements to prevent or control to an acceptable level the risk that systems or spaces necessary for the safety of the vessel could become inoperative by exposure to or entry of water in normal or abnormal conditions.

D.4 Rapid drainage of water on deck

The vessel must have arrangements to prevent or control to an acceptable level the likelihood that, in both normal and abnormal conditions, water that encroaches on the vessel deck will stay on the deck and in recesses.

D.5 Conditions of loading to be safe

The loading and operation of the vessel must be controlled to prevent or to minimise to an acceptable level the consequences from the uncontrolled encroachment of water in or on the vessel, in normal or abnormal conditions.

D.6 Access to information

Any person responsible for the safety of the vessel must have access to accurate and quickly assessable information needed to identify hazards, to control loading and to undertake other essential actions needed to secure the vessel's watertight and weathertight integrity.

Division E Construction

E.1 Strength for loading

The vessel must be designed and constructed to withstand the following at any time:

(a) any load that may arise in the course of its intended operations; and

(b) static loading;

(c) dynamic loading;

(d) concentrated loading.

E.2 Structure of vessels

The structure of the vessel must be designed and constructed:

(a) to avoid deformations that compromise the safety of the vessel or damage any adjacent structure; and

(b) to incorporate a measure of redundancy so that serviceability of the vessel is maintained in the event of structural degradation that may be expected over a period of time in normal operation; and

(c) to avoid, or reduce the risk of, structural failure or loss of watertight integrity caused by the sudden application of a load; and

(d) if subject to repetitive loading or repeated stress — to avoid, or reduce the risk of, fatigue failure; and

(e) to avoid, or reduce the risk of, discontinuities, abrupt changes in the section of structural members, misalignments and penetrations.

Note for paragraph (c) This kind of loading is also known as impact loading.

Note for paragraph (d) This kind of loading is also known as cyclical loading.

Division F Fire safety

F.1 Prevention of explosive combustion

The vessel must be designed, constructed and operated to reduce to an acceptable level or, if practicable, to eliminate the risks of an uncontrolled explosive combustion of vapours, gases, liquids or other substances on board the vessel.

F.2 Control risks of spillage of flammable liquids

The vessel must be designed, constructed and operated to reduce to an acceptable level or, if practicable, to eliminate the risks associated with the spillage of flammable liquids on board the vessel.

F.3 Prevention of exposure to the smoke and heat of fire

The vessel must be designed, constructed and operated to reduce to an acceptable level or, if practicable, to eliminate the risk of exposure of people to smoke and heat of a fire that might occur on board the vessel.

F.4 Prevent or delay the spread of fire

The vessel must be designed, constructed and operated to reduce to an acceptable level or, if practicable, to eliminate the risks of rapid spread of fire on board the vessel.

F.5 Protection of essential systems

The vessel must be designed, constructed and operated to reduce to an acceptable level or, if practicable, to eliminate the risks of possible disruption or destruction by fire of the navigation, communication and lighting safety systems on board the vessel.

F.6 Redundancy of fire safety measures

The vessel must have a combination of different and independent fire safety measures on board that reduce to an acceptable level the vulnerability of the vessel from fire due to an over-reliance on a single measure.

Division G Machinery, propulsion, exhaust, steering and fuel

G.1 Operation maintenance and safety

All machinery and machinery systems must be installed or arranged on the vessel:

(a) to ensure that they can be operated and maintained properly; and

(b) to protect the health and safety of people on, or in the vicinity of, the vessel.

Note Vessels are also subject to Commonwealth, State and Territory laws on occupational health and safety and marine pollution. Advice should be sought from appropriate agencies.

G.2 Reliability and safety

An engine for the vessel must be designed, constructed and arranged:

(a) to operate reliably; and

(b) to minimise the risk of fire or explosion; and

(c) so that the primary means of starting the engine does not rely on something external to the vessel.

G.3 Securing machinery

(1) An item of machinery must be secured to the vessel's structure to prevent:

(a) injury to people; or

(b) damage to components; or

(c) excessive vibration.

(2) Main and auxiliary engines in motor and auxiliary sailing craft must be secured to the hull structure by seatings and scantlings that can resist forces of gravitation, thrust, torque and vibration.

G.4 Propulsion

Propulsion machinery and controls must be organised so that control over the vessel's motion is maintained in all conditions of operation.

G.5 Arrangements for engine monitoring

An engine that is required for the safe operation of the vessel must have a means to Engine exhaust

The exhaust system of an engine must be constructed and arranged in a way that:

(a) protects the health and safety of people; and

(b) maintains the watertight integrity of the vessel.

G.6 Combustion air

If an engine draws air from the machinery space, the space must have sufficient air for the engine to operate at maximum power without depressurising the space.

G.7 Dissipation of heat

Temperature in the machinery space must be maintained at a level that ensures comfort for people on board and prevents machinery, equipment and structures from overheating.

G.8 Engine to be designed for marine use

An engine used for propulsion must be:

(a) designed and manufactured specifically for marine use; or

(b) adapted to make it suitable for the requirements of marine use.

G.9 Astern power

If the shaft power available for propulsion is >5 kW, the vessel must have sufficient astern power to ensure manoeuvrability in all likely weather conditions.

G.10 Remote shutdown of main propulsion engines

(1) Manual mechanical means must be provided to enable the engine to be shut down quickly from outside the engine space.

(2) The remote shutdown must be able to operate when exposed to heat and flame from a fire in the engine enclosure.

(3) Cables with or without casings, casings and pulley systems must be fire-resistant.

Note Fail-safe arrangements may not be suitable if an electrical or other fault could cause an uncontrolled shutdown of the engine.

G.11 Steering system reliability

The vessel's steering system must:

(a) be capable of reliably altering the vessel's heading at a rate appropriate for the navigational hazards that might be expected in normal and abnormal conditions; and

(b) be capable of reliably holding or returning the vessel's head to a given course to counteract the effects of wind, current and waves.

G.12 Steering system strength

The vessel's rudder, steering nozzle or other directional control device must:

(a) have sufficient strength to meet the demands of service in both ahead and astern operation, and in normal and emergency situations, taking into account peak, fatigue and shock loading; and

(b) be designed and constructed to avoid or reduce the effects of corrosion and erosion.

G.13 Containment of fuel

The fuel system and each fuel tank must be designed, constructed and installed to prevent the spillage of fuel in both normal and abnormal conditions of operation.

G.14 Minimising the risk of ignition

The fuel system and each fuel tank must be designed, constructed and installed to avoid the risk of ignition by machinery or other sources.

G.15 Minimising the risk of explosion

The fuel system and each fuel tank, for fuel of flashpoint less than 60º C, must be designed, constructed and installed to prevent the build-up of explosive fumes and to avoid potential sources of ignition that might ignite the fumes.

G.16 Draining of spaces within the vessel

The vessel must have means for draining the watertight spaces in it in normal and abnormal conditions:

(a) to maintain the vessel's reserve buoyancy and stability; and

(b) to prolong the time before the reserve buoyancy or stability is lost; and

(c) to maintain the function of equipment essential to the safety of persons on board the vessel, or to prolong the time before the equipment no longer functions; and

(d) to prevent corrosion and degradation caused by moisture lying in the vessel.

G.17 Bilge system reliability

The bilge and seawater systems essential to the safety of the vessel must be designed, constructed, arranged and maintained so that they function effectively and reliably when needed.

Division H Electrical

H.1 Functionality and reliability

(1) The vessel's electrical installation must be designed, and its electrical equipment selected and installed:

(a) to ensure the safe operation of the vessel; and

(b) to facilitate the identification, inspection and maintenance of the system.

(2) Electrical services that are essential for the safety of people, the vessel or navigation must be capable of operating in emergency conditions.

(3) The vessel's electrical installation must be capable of withstanding the extreme conditions of a marine environment.

H.2 Safety protection

The vessel's electrical installation must be arranged to prevent accidental contact with parts of it that are live in normal service or that may become live if a fault occurs.

H.3 Minimisation of risk

(1) Electrical equipment and installations must be designed, constructed and operated to minimise the risk of fire, damage and injury to people.

(2) Minimisation measures must include the following:

(a) overcurrent protection;

(b) appropriate insulation;

(c) fault indication;

(d) safety trips;

(e) maintenance procedures;

(f) notification of operational procedures.

H.4 Isolation devices

Isolation devices must be fitted to electrical installations and parts of installations:

(a) to prevent hazards that might result from abnormal operation; and

(b) to allow maintenance of electrical equipment.

H.5 Battery installations

A battery installation must be designed, and batteries installed, to minimise risks associated with the following:

(a) emission of gases or corrosive fluids;

(b) electrochemical corrosion;

(c) movement;

(d) mechanical damage;

(e) exposed terminals.

Division I Buoyancy, stability, loading and flotation

I.1 Vessel stability — loading conditions and heeling moments

The vessel must have stability characteristics over the range of foreseeable loading conditions and when exposed to the effects of 1 or more heeling moments that:

(a) minimise the risk of the vessel capsizing; and

(b) avoid excessive angles of heel that could threaten the safety of people on board the vessel; and

(c) return the vessel to an upright position.

I.2 Risk of flooding — capsizing or foundering

The vessel must have arrangements to prevent or control to an acceptable level the likelihood that flooding will:

(a) capsize the vessel; or

(b) cause the vessel to founder.

I.3 Risk of flooding — essential safety systems

(1) The vessel must have arrangements to prevent or control to an acceptable level the risk that the vessel's essential safety systems will be made ineffective because of:

(a) immersion of the vessel by flooding; or

(b) excessive angles of heel or trim caused by flooding.

(2) For paragraph (1)(b), the following are hazards that pose an unacceptable level of risk to the vessel's essential safety systems:

(a) the vessel's heel is greater than the maximum allowable angle for operation of the vessel's emergency machinery;

(b) the vessel's heel is greater than the maximum allowable angle for operation of the vessel's survival craft launching apparatus;

(c) the vessel's deck angles caused by excessive angles of heel or trim impedes the rapid assembly of people on the deck and their evacuation into survival craft.

I.4 Sufficient time to respond to flooding

The vessel must have arrangements that, on the flooding of the vessel, extend the time available:

(a) for the person operating the vessel to attempt damage control measures to prevent further flooding of the vessel; and

(b) to permit people to escape from enclosed spaces and evacuate the vessel before the vessel capsizes or submerges.

I.5 Vessel stability analysis

(1) In deciding which method to use to analyse the vessel's stability, the following must be taken into account:

(a) the vessel's operation and form;

(b) the nature and likelihood of potential hazards;

(c) the likely consequences of inadequate stability.

(2) Data and calculations used to verify the vessel's compliance with the stability criteria must be sufficiently accurate to ensure that a person can reliably determine whether or not the vessel complies with this Division.

Division J Deleted as part of Amendment 1, 2018

Schedule 2 Standards for design, manufacture and performance of safety equipment

(Chapter 3, section 3.2)

Table 11 Design, manufacture and performance of safety equipment

Item	Kind of safety equipment	Standards
1	Anchor with chain or line	(1) An anchor must have sufficient holding strength for seabed conditions and vessel's size and weight (2) The chain or line must have sufficient strength and durability to securely attach the anchor
2	Bailer	Must be a suitable receptacle for bailing water with a secure lanyard rope for attachment to the vessel
3	Buoyant appliance with 30 m of 8 mm buoyant rope attached	(1) Must be designed and constructed to: (a) have a yellow or red safety colour; and (b) have marine grade reflective material fitted; and (c) be capable of supporting not less than 143 newtons of iron in fresh water for 24 hours *Note* 143 newtons of iron in fresh water weighs approximately 14.5kg. (2) Must not be permanently secured (3) Must be capable of easy deployment *Note* Horse shoe life rings, rescue buoys, rescue tubes etc. may be used as buoyant appliances provided they satisfy the above requirements.
4	Communication Equipment	Must be able to operate in the operational area(s) and geographic location of the vessel and provide the ability for persons on board the vessel to communicate with shore based facilities and other vessels An EPIRB does not meet the communication equipment requirement *Note* A marine radio meets this standard. The Australian Communications and Media Authority (ACMA) may be able to assist with recommendations for marine radios or communication equipment that is appropriate for types of vessels and their operational areas. For contact details for ACMA — see the ACMA website at http://www.acma.gov.au/.
5	Compass	(1) Must be liquid damped with at least a 75 mm diameter compass card showing the cardinal points (2) Must not deviate from the true heading by more than 5 degrees on any heading
6	Distress signals	(1) Must be designed and manufactured in accordance with AS 2092:2004 *Pyrotechnic marine distress flares and signals for pleasure craft*

Item	Kind of safety equipment	Standards
	(a) orange smoke hand-held (b) red hand-held flare (c) red star parachute rocket flare	(2) Must not exceed the manufacturer's expiry date (3) In areas where distress signals are prohibited an EPIRB is to be carried in place of the distress signal *Example* The areas around some inland waterways prohibit the use of flares due to bush fire risk.
7	Distress signals – V Sheet	Must be a fluorescent orange-red coloured sheet of dimensions not less than 1.8 metres × 1.2 metres with a black letter 'V' superimposed on the middle of the sheet. The letter "V" on the sheet must be no more than 150 millimetres wide
8	EPIRB	(1) Must meet AS/NZS 4280.1 (2) Must be registered with AMSA (3) Must be stowed so that it may not be activated inadvertently (4) For the following vessels in operational area C >2nm from land, the EPIRB must be a float-free EPIRB: (a) vessels ≥12 m long; (b) vessels ≥7.5 m to <12 m long that do not meet the level flotation criteria mentioned in Table 6; (c) vessels <7.5 m that do not meet the level flotation criteria mentioned in Table 6, unless all persons on the vessel are wearing a lifejacket and the EPIRB is GNSS equipped.
9	Fire bucket	Must be 4L in capacity, of robust construction and have a lanyard attached *Note* A fire bucket that is carried may be used as a bailer if it satisfies the bailer standard.
10	Fire extinguisher	Must comply with AS/NZS 1841.1 to AS 1841.8 as applicable *Note* The fire extinguisher must comply with the standards in the series AS/NZS 1841.1 to 1841.8 that are applicable to fire extinguishers of its type.
11	First aid kit	(1) Must be stored in a weathertight and portable case of non-corrosive and strong material (2) Must have secure fasteners capable of quick release (3) Must contain medical supplies that are: (a) within their expiry date; and (b) accompanied with instructions for use in English including advisory information from the Australian Pharmaceutical Formulary; and

Item	Kind of safety equipment	Standards
		(c) sufficient for the nature of the vessel's operations taking into account: (i) length of voyage; and (ii) number and age profile of person on board *Note 1* For first aid supplies and equipment, storage, disposal, labelling, and training — requirements in Commonwealth, State and Territory legislation may apply. *Note 2* The kind and quantity of supplies contained in a first aid kit should also be informed by an assessment that takes into account the following: (1) distance/time to access medical aid; (2) communication capability to access medical assistance and advice; (3) type of operation and activities being undertaken (e.g. types and level of hazards likely to be encountered); (4) length of the voyage; (5) number of persons on board; (6) the profile of persons on board (e.g. children, elderly, level of experience, gender etc.); (7) the level of first aid training of the crew, personnel and persons on board including the first aid procedures and drills carried out on board the vessel; (8) prevailing or expected environmental conditions likely to be encountered on the voyage; (9) Incidents and accidents that have occurred in the operation and in the wider industry sector.
12	GNSS	May be a hard wired or portable unit with a reliable power source
13	Grab lines	(1) Grab-lines must not be secured more than 150 mm or less than 100 mm below the gunwale. (2) The securing points must be spaced ≤460 mm or >300 mm centres and interlaced to prevent movement. (3) The depth of the loop when at right angles to the vessel must be not more than 200 mm or less than 150 mm.
14	Lifejacket	(1) For Level 100 (Type 1) lifejacket standard — must be designed and manufactured in accordance with: (a) AS 4758.1; or (b) ISO 12402-4; or (c) UL 1180 (2) For Level 150 (coastal lifejacket) standard — must be designed and manufactured in accordance with: (a) AS 4758.1; or

Item	Kind of safety equipment	Standards
		(b) ISO 12402-3 However, inflatable lifejackets that rely solely on oral inflation for buoyancy are not acceptable. (3) If the State or Territory where a Class 4 vessel is operating has recreational boating requirements for the wearing of lifejackets on equivalent recreational boats — the owner must ensure that each hirer and all other persons on the vessel wear a lifejacket. (4) A person that is wearing, or in the process of donning or removing, diving equipment on board the vessel is taken to satisfy the requirement of wearing a lifejacket.
15	Life raft or dinghy	(1) Life rafts and dinghy's must be designed, constructed and maintained in accordance with requirements mentioned in NSCV Part C, Subsection 7A
16	Map or chart	(1) A map must be geographical representation of a marine area that identifies prominent shore marks and offshore islands, reefs and shoals (2) A chart must be geographical representation of a marine area produced from hydrographic survey for the provision of navigational aid that identifies any navigation markers and lights, prominent geographical features, reefs, shoals and other known dangers to navigation
17	Navigation lights	(1) Must comply with the design, performance and positioning requirements mentioned in: (a) Marine Order 30; or (b) ISO 16180 *Note* Marine Order 30 gives effect to the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS).
18	VHF marine radio	(1) The VHF transceiver must be approved by ACMA for maritime use (2) If Digital Selective Calling (DSC) is fitted — the DSC must be operational and programmed with an AMSA assigned MMSI
19	Waterproof buoyant torch	(1) Must be designed and constructed to: (a) be waterproof; and (b) be able to float; and (c) be capable of being a used to signal for help (2) Must be stored with spare batteries

Schedule 3 Standard houseboat — calculation of reserve buoyancy

(Chapter 12, section 12.11)

1 Reserve buoyancy of pontoons

The pontoons of a standard houseboat must have a reserve buoyancy (Rb) of at least 25% of their total volume when the houseboat is fully loaded, including its full capacity of fuel and water.

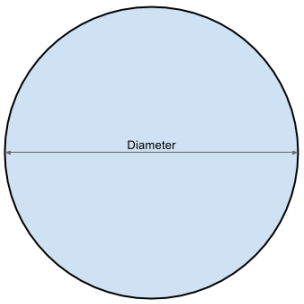
2 Calculations of reserve buoyancy for pontoon types

The following diagram describes the method for calculating the reserve buoyancy of different shaped pontoons.

Circular - Reserve Buoyancy

Key: *D* *Pontoon diameter (m)*

T *draft (m)*



Circular pontoon.

$$Rb = \left(1 - \frac{\left(\frac{D}{2}\right)^2 * \cos^{-1}\left(1 - \frac{T}{\frac{D}{2}}\right) - \left(\frac{D}{2} - T\right) * \sqrt{2 * \frac{D}{2} * T - T^2}}{\pi * \left(\frac{D}{2}\right)^2} \right) * 100$$

5 sided – Reserve Buoyancy

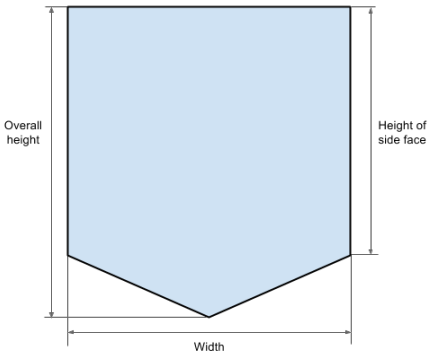
Key: *h* *Overall Height of pontoon (m)*

w *Width of pontoon (m)*

s *Height of pontoon side face (m)*

T *Draft (m)*

$$Rb = \left(\frac{(h - T) * w}{(s * w) + \frac{(h - s) * w}{2}} \right) * 100$$



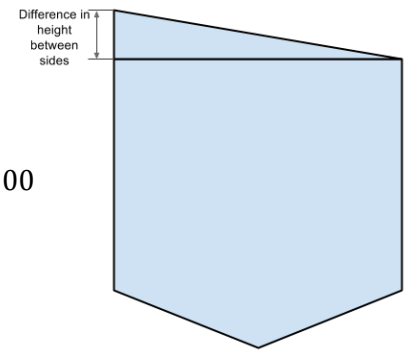
5 Sided pontoon.

It should be noted that it is known to be common practice to offset one side of the pontoon higher than the other for water runoff. If this is done, the calculation is able to be amended to:

Key: *x* *Difference in height between sides*

h *Overall height to shortest top side*

$$Rb = \left(\frac{w\left((h-T)+\frac{x}{2}\right)}{(s*w)+\frac{(h-s)*w}{2}+\frac{w*x}{2}} \right) * 100$$



5 Sided offset pontoon.

6 side, wall sided – Reserve Buoyancy

Key: *h* *Overall Height of pontoon (m)*

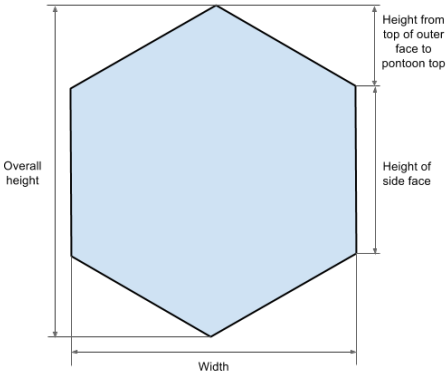
w *Width of pontoon (m)*

s *Height of pontoon side face (m)*

a *Height from top of side face to pontoon top (m)*

T *Draft (m)*

$$Rb = \left(\frac{\left((h-T)*w\right)+\frac{a*w}{2}}{(s*w)+\frac{(h-s)*w}{2}} \right) * 100$$



6 Side, wall sided pontoon.

Note Waterline must be along the wall of the pontoon

6 side, flat top – Reserve Buoyancy

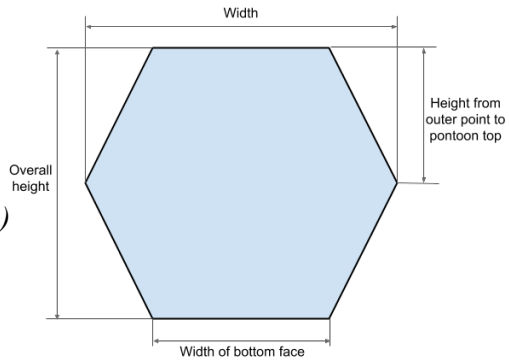
Key: *h* *Overall Height of pontoon (m)*

w *Width of pontoon (m)*

s *Width of pontoon bottom face (m)*

a *Height from outer point to pontoon top (m)*

T *Draft (m)*



6 Side, flat topped pontoon.

If waterline is below the most outer point:

$$Rb = \left(\frac{2s(h-T) + a(w-s) + \left[\frac{(w-s)\big((h*a)+T\big)(h-a-T)}{(h-a)} \right]}{h\big(s+(w-s)\big)} \right) * 100$$

If waterline is above, or at the most outer point:

$$Rb = \left(\frac{(h-T)\big(2s+(w-s)(h-T)\big)}{h\big(2s+(w-s)\big)} \right) * 100$$