Uniform Shipping Laws Code
2008

Section 10: Life-Saving Appliances

(SA)

SECTION 10

Life-Saving Appliances

1. This Section is divided into five Parts as follows:

Part 1 Preliminary

Part 2 General Provisions

Part 3 Scales of life-saving appliances

Part 4 Types of life-saving appliances

PART 1 – PRELIMINARY

2. This Section should be read in conjunction with the Introduction, Definitions and General Requirements Section.

3. In this Section the definitions in the Introduction, Definitions and General Requirements Section of these uniform requirements shall apply and, unless the contrary intention appears:

'Highly visible colour' means one of the following colours defined in Australian Standard 2700-1985 *Colour Standards for General Purposes:*

X 15-Orange

R 11-International Orange

R 12-Scarlet

PART 2-GENERAL PROVISIONS

4. Scales of Life-Saving Appliances

The scale of equipment to be provided in each class of vessel shall comply with the requirements detailed in Part 3 of this Section.

5. Types of Life-Saving Appliances

Vessels must comply with the *National Standard for Commercial Vessels* (NSCV) Part C Design and Construction, Section 7 Equipment, Subsection 7A Safety Equipment - Chapters 3 and 5.

With the following notes added to Clause 3.1, *Scope*, of the referenced NSCV Part C Section 7, Subsection 7A:

NOTES:

1. Part C Section 7 Subsection 7A of the NSCV includes the requirements to cover both:
   - Section 10, *Life Saving Appliances*, and
   - those parts of Section 13 which also impose safety equipment obligations.
2. In South Australia, the relevant parts of the NSCV Part C Section 7 Subsection 7A Chapter 4 apply in the replacement of the USL Code Section 13, but do not apply in the replacement of Section 10.
3. In South Australia, Section 10 Part 3 has not been replaced by the NSCV, however the requirements previously contained in Section 10 Part 3 relating to Emergency Electrical Installations have been deleted from Section 10 Part 3 and are now covered by the amended Section 9.
4. The Chapters, Clauses and Annexes of the NSCV Part C Section 7 Subsection 7A applicable in South Australia shall be interpreted in accordance with the NSCV Part C Section 7 Subsection 7A, Chapter 1.
5. Where the referenced NSCV Part C Section 7 Subsection 7A refers to the NSCV Part C Section 6, this is taken to be a reference to Section 10 Appendix N of the USL Code.

(Amendment dated 1 October 2008)

PART 3-SCALES OF LIFE-SAVING APPLIANCES

CLASS 1A

PASSENGER VESSELS-UNLIMITED SEAGOING

Reference should be made to Part 2 for marking, stowage, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
All lengths	The requirements for provision of LIFEBOATS, RESCUE BOATS, FAST RESCUE BOATS, LIFERAFTS, MARINE EVACUATION SYSTEMS, LAUNCHING AND RECOVERY APPLIANCES, BUOYANT APPARATUS, TWO WAY VHF RADIO EQUIPMENT, RADAR TRANSPONDERS, DISTRESS SIGNALS, LIFEBUOYS, LIFEJACKETS, LINE THROWING APPLIANCES, IMMERSION SUITS, THERMAL PROTECTIVE AIDS, GENERAL EMERGENCY ALARM SYSTEMS, and EMERGENCY COMMUNICATIONS SYSTEMS are contained in Marine Orders Part 25. The requirements for EMERGENCY ELECTRICAL INSTALLATIONS are contained in Marine Orders Part 20. The requirements for MUSTER STATIONS are contained in Marine Orders Parts 25 and 29.

(Amendment dated 15 August 1995)

CLASS IB

PASSNEGER VESEL-LIMITED SEAGOING

Note:

Consistent with the type of vessel and the area of operations, a suitable scaling down of equipment may be permitted by the Authority.

Reference should be made to Part 2 for marking, stowage, etc, and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
25 metres and over	LIFEBOATS AND LIFERAFTS (1) Coastal lifeboat(s) for 100% compliment on each side, or (2) A coastal lifeboat for 100% complement capable of being launched from either side of vessel, or (3) Coastal liferaft(s) for 100% complement plus rescue boat *Note*: Coastal lifeboat(s) for 50% complement on each side may be permitted by the Authority in vessels that are subdivided in accordance with the Construction Section of the Code.
Less than 25 metres	Coastal liferaft(s) for 100% complement
60 metres and over 45 metres and over but less than 60 metres 25 metres and over but less than 45 metres 10 metres and over but less than 25 metres	LIFEBUOYS 12 lifebuoys 8 lifebuoys 6 lifebuoys At least 50% with self-igniting lights, including 2 with smoke signals. 2 of remainder fitted with buoyant lines.
Less than 10 metres	2 lifebuoys, one with light and one with line 1 lifebuoy with light
All lengths	LIFEJACKETS (1) A SOLAS lifejacket fitted with a light and whistle for each person of mass 32 kg and over that the vessel is certified to carry, plus (2) A SOLAS lifejacket suitable for each person aboard the vessel of mass of less than 32 kg, plus (3) 5% of (1) and 5% of (2) above stowed in a conspicuous place on deck.
45 metres and over 25 metres and over but less than 45 metres	DISTRESS SIGNALS 12 parachute distress rockets 6 parachute distress rockets 4 red hand flares 2 hand held orange smoke signals
Less than 25 metres	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal
45 metres and over	LINE THROWING APPLIANCES Line throwing appliance with 4 rockets and lines
25 metres and over	ELECTRICAL ALARM SIGNAL Electrical alarm signal for mustering crew and passengers (where efficient mustering cannot be carried out by voice).
All lengths	EMERGENCY ELECTRICAL INSTALLATION **Refer to amended Section 9**

(Amendment dated 1 October 2008)

CLASS IC

PASSNEGER VESEL-RESTRICTED SEAGOING

Reference should be made to Part 2 for marking, stowage, etc, and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
	LIFEBOATS AND LIFERAFTS
25 metres and over	(1) Coastal lifeboat(s) for 100% complement on each side, or (2) A coastal lifeboat for 100% complement capable of being launched from either side, or (3) Coastal liferaft(s) for 100% complement plus rescue boat *Note:* Coastal lifeboat(s) for 50% complement on each side may be permitted by the Authority in vessels that are subdivided in accordance with the Construction Section.
Less than 25 metres	Coastal liferaft(s) for 100% complement
	LIFEBUOYS
60 metres and over	8 lifebuoys
45 metres and over but less than 60 metres	6 lifebuoys
25 metres and over but less than 45 metres	4 lifebuoys
	At least 50% to have self-igniting lights, including 2 with smoke signals. 2 of remaining lifebuoys fitted with buoyant lines
10 metres and over but less than 25 metres	2 lifebuoys, one with light and one with buoyant line
Less than 10 metres	1 lifebuoy with light
	LIFEJACKETS
All lengths	A Coastal lifejacket with whistle for each adult or child aboard the vessel (each crew lifejacket shall be fitted with a light and a whistle)
	LINE THROWING APPLIANCE
45 metres and over	Line throwing appliance with 4 rockets and lines
	DISTRESS SIGNALS
25 metres and over	6 parachute distress rockets 4 red hand flares 2 hand held orange smoke signals
Less than 25 metres	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal
	ELECTRIC ALARM SIGNAL
25 metres and over	Electric alarm signal for mustering crew and passengers (where efficient mustering cannot be carried out by voice)
	EMERGENCY ELECTRICAL INSTALLATION/EQUIPMENT
All lengths	(1) A number of electric torches or hand lamps as determined by the Authority **Refer also to amended Section 9**

(Amendment dated 1 October 2008)

CLASS 1D

PASSENGER VESSELS-PARTLALLY SMOOTH WATERS

Note:

In the tables following-

1. in vessels fitted with internal buoyancy as prescribed by Appendix N, or
2. in vessels that are subdivided in accordance with the Construction Section the buoyant appliances and/or lifebuoys listed below may be reduced by a percentage not exceeding 40% as approved by the Authority.
3. Reference should be made to Part 2 for marking, stowage, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
	BUOYANT APPLIANCES
25 metres and over	(1) A dinghy, plus (2) sufficient buoyant appliances and/or lifebuoys to provide float-off buoyancy for 100% complement, provided that- (a) each lifebuoy is assumed to provide support for two persons, (b) the following minimum number of lifebuoys shall be included in the above appliances:
60 metres and over	6 lifebuoys
45 metres and over but less than 60 metres	4 lifebuoys
25 metres and over but less than 45 metres	2 lifebuoys
Less than 25 metres	Sufficient buoyant appliances and/or lifebuoys to provide float-off buoyancy for 100% complement, provided that- (a) each lifebuoy is assumed to provide support for 2 persons, (b) a dinghy may be included in the above appliances
	LIFEBUOYS Additional to any lifebuoys included in 100% buoyancy and above
10 metres and over	2 lifebuoys, one with light and one with buoyant line
Less than 10 metres	1 lifebuoy with light
	LIFEJACKETS
All lengths	A Coastal lifejacket for each adult and child aboard vessel
All lengths	DISTRESS SIGNALS 3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal (A reduction in distress signal may be permitted by the Authority consistent with the area of operations allocated to the vessel)
	ELECTRIC ALARM SIGNAL
25 metres and over	Electric alarm signal for mustering crew and passengers (where efficient mustering cannot be carried out by voice)
	EMERGENCY ELECTRICAL INSTALLATION/EQUIPMENT
All lengths	A number of electric torches or hand lamps as determined by the Authority

CLASS 1E

PASSNEGER VESSELS-SMOOTH WATERS

Reference should be made to Part 2 for marking, stowage, etc, and Part 4 for specifications of equipment.

Measured Length	*L.S.A Requirements*
All lengths	BUOYANT APPLIANCES, LIFEBUOYS AND LIFEJACKETS Sufficient buoyant appliances, lifebuoys and coastal lifejackets to provide for 115% of complement. It is assumed a lifebuoy will support two persons. An approved dinghy may be included in the above appliances.
	LIFEBUOYS
$60 \leq L$	6 lifebuoys, one with light and one with line
$45 \leq L < 60$ m	4 lifebuoys, one with light and one with line
$10 \leq L < 45$ m	2 lifebuoys, one with light and one with line
$L < 10$ m	1 lifebuoy, with light
	LIFEJACKETS
All lengths	Consistent with the area of operation allocated, and for reasons of safety, the Authority may determine the percentage of lifejackets to be included under the heading BUOYANT APPLIANCES, LIFEBUOYS AND LIFEJACKETS.
	DISTRESS SIGNALS
All lengths	Distress signals as determined by the Authority
	EMERGENCY ELECTRICAL EQUIPMENT
All lengths	Electric torches or hand lamps – number to be determined by the Authority

(Amendment dated 23 August 1996)

CLASS 2A

NON-PASSENGER VESSELS-UNLIMITED SEAGOING

Reference should be made to Part 2 for marking, stowage, etc. and Part 4 for specifications of equipment.

Measured length	*L.S.A Requirements*
All lengths	Refer to Table for Class 1A Vessels

CLASS 2B

NON-PASSENGER VESSELS-LIMITED SEAGOING

Note:
Consistent with type of vessel and the area of operations, a suitable scaling down of equipment may be permitted by the Authority. Reference should be made to Part 2 for stowage, marking, etc., and to Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
25 metres and over	LIFEBOATS AND LIFERAFTS (1) Coastal lifeboat(s) for 100% compliment on each side of vessel, or (2) A coastal lifeboat for 100% complement capable of being launched from either side of vessel, or (3) Coastal liferaft(s) for 100% complement plus rescue boat
Less than 25 metres	Coastal liferaft(s) for 100% complement
60 metres and over	LIFEBUOYS 8 lifebuoys
45 metres and over but less than 60 metres	6 lifebuoys
25 metres and over but less than 45 metres	4 lifebuoys At least 50% with self-igniting lights, including 2 with smoke signals. 2 of remainder fitted with buoyant lines.
15 metres and over but less than 25 metres	2 lifebuoys, one with light and one with line
Less than 15 metres	1 lifebuoy with light *Note*: All self-igniting lights in tankers to be electric battery type
All lengths	LIFEJACKETS (1) A SOLAS lifejacket fitted with a light and whistle for each person of mass 32 kg and over that the vessel is certified to carry, plus (2) A SOLAS lifejacket suitable for each person aboard the vessel of mass of less than 32 kg
45 metres and over	DISTRESS SIGNALS 12 parachute distress rockets
25 metres and over but less than 45 metres	6 parachute distress rockets 4 red hand flares 2 hand held orange smoke signals
Less than 25 metres	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal
45 metres and over	LINE THROWING APPLIANCES Line throwing appliance with 4 rockets and lines
25 metres and over	ELECTRICAL ALARM SIGNAL Electrical alarm signal for mustering crew (where efficient mustering cannot be carried out by voice).
Less than 50 metres and less than 500 tons	EMERGENCY ELECTRICAL INSTALLATION/EQUIPMENT (1) A number of electrical torches or hand lamps as determined by the Authority **Refer also to amended Section 9**

(Amendment dated 1 October 2008)

CLASS 2C

NON-PASSENGER VESSELS-RESTRICTED SEAGOING

Reference should be made to Part 2 for marking, stowage, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
25 metres and over	LIFEBOATS AND LIFERAFTS AND INTERNAL BUOYANCY (1) Coastal lifeboat(s) for 100% complement on each side of vessel, or (2) A coastal lifeboat for 100% complement capable of being launched from either side of vessel, or (3) Coastal liferaft(s) for 100% complement plus rescue boat
Less than 25 metres	(1) Coastal liferaft(s) for 100% complement, or (2) Coastal liferaft(s) as detailed above for 25 metres and over, or (3) In the case of a vessel of less than 15 metres measured length, internal buoyancy as prescribed by Appendix N
	LIFEBUOYS
60 metres and over	8 lifebuoys
45 metres and over but less than 60 metres	6 lifebuoys
25 metres and over but less than 45 metres	4 lifebuoys
	At least 50% to have self-igniting lights, including 2 with smoke signals. 2 of remaining lifebuoys fitted with buoyant lines
15 metres and over but less than 25 metres	2 lifebuoys, one with light and one with line
Less than 15 metres	1 lifebuoy with light provided that these items are not required in: (1) A vessel under 10 metres length which carries only one person, or (2) A vessel less than 5 metres length which is fitted with internal buoyancy as prescribed by Appendix N
	Note: All self-igniting lights in tankers to be electric battery type
	LIFEJACKETS
All lengths	A Coastal lifejacket with a light and whistle for each person that the vessel is certified to carry
	DISTRESS SIGNALS
25 metres and over	6 parachute distress rockets 4 red hand flares 2 hand held orange smoke signals
Less than 25 metres	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal
	ELECTRIC ALARM SIGNAL
25 metres and over	Electric alarm signal for mustering crew (where efficient mustering cannot be carried out by voice)
	EMERGENCY ELECTRICAL INSTALLATION/EQUIPMENT
All lengths	(1) A number of electrical torches or hand lamps as determined by the Authority **Refer to amended Section 9**

(Amendment dated 1 October 2008)

CLASS 2D

NON-PASSENGER VESSELS-PARTIALLY SMOOTH WATERS

Reference should be made to Part 2 for stowage, marking, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
	BUOYANT APPLIANCES
25 metres and over	Sufficient buoyant appliances and/or lifebuoys to provide a total float-off capacity for 100% complement, provided that - (a) Each lifebuoy is assumed to provide support for two persons (b) A dinghy shall be included in the above appliances
10 metres and over but less than 25 metres	Sufficient buoyant appliances and/or lifebuoys to provide a total float-off capacity for 100% complement, provided that - (a) Each lifebuoy is assumed to provide support for two persons (b) A dinghy may be included in the above appliances
Less than 10 metres	(1) Buoyant appliances and/or lifebuoys for 100% complement, or (2) A dinghy for 100% complement, or (3) Internal buoyancy as prescribed in Appendix N
	LIFEBUOYS
	Additional to any lifebuoys included in 100% buoyancy and above
15 metres and over	2 lifebuoys, one with light and one with buoyant line
Less than 15 metres	1 lifebuoy with light
	LIFEJACKETS
All lengths	A Coastal lifejacket for each person that the vessel is certified to carry
	DISTRESS SIGNALS
All lengths	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal Note: Consistent with the area of operations allocated to the vessel, a reduction in distress signal may be permitted by the Authority
	EMERGENCY ELECTRICAL EQUIPMENT
All lengths	A number of electric torches or hand lamps as determined by the Authority

CLASS 2E

NON-PASSENGER VESSELS-SMOOTH WATERS

Reference should be made to Part 2 for stowage, marking, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A Requirements*
	BUOYANT APPLIANCES AND/OR LIFEBUOYS
15 ≤ L	Sufficient buoyant appliances and/or lifebuoys to provide for 100% of complement. It is assumed a lifebuoy will support two persons. A dinghy may be included in the above appliances.
L < 15 m	***Either*** buoyant appliances and/or lifebuoys as for 15 metres and over, ***or*** the vessel is to be fitted with internal buoyancy as prescribed by Appendix N
	LIFEBUOYS
15 ≤ L	2 lifebuoys, one with light
L < 15 m	1 lifebuoy, with light
	LIFEJACKETS
All lengths	A coastal lifejacket for each person the vessel is certified to carry
	DISTRESS SIGNALS
All lengths	Distress signals as determined by the Authority
	EMERGENCY ELECTRICAL EQUIPMENT
All lengths	Electric torches or hand lamps – number to be determined by the Authority

(Amendment dated 15 August 1995)

CLASS 3A

FISHING VESSELS-UNLIMITED SEAGOING

Reference should be made to Part 2 for stowage, marking, etc. and Part 4 for specifications of equipment.

Measured length	*L.S.A Requirements*
All lengths	Refer to Table for Class 1A Vessels

CLASS 3B

FISHING VESSELS-LIMITED SEAGOING

Reference should be made to Part 2 for stowage, marking, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
	LIFEBOATS AND LIFERAFTS
25 metres and over	(1) Coastal lifeboat(s) for 100% compliment on each side, or (2) A coastal lifeboat for 100% complement capable of being launched from either side of vessel, or (3) Coastal liferaft(s) for 100% complement plus rescue boat
Less than 25 metres	(1) Coastal liferaft(s) for 100% complement, or (2) Coastal liferaft(s) as detailed above for 25 metres and over
	LIFEBUOYS
60 metres and over	8 lifebuoys
45 metres and over but less than 60 metres	6 lifebuoys
25 metres and over but less than 45 metres	4 lifebuoys
	At least 50% with self-igniting lights, including 2 with smoke signals. 2 of remainder fitted with buoyant lines.
15 metres and over but less than 25 metres	2 lifebuoys, one with light and one with line
Less than 15 metres	1 lifebuoy with light
	LIFEJACKETS
All lengths	(1) A SOLAS lifejacket fitted with a light and whistle for each person of mass 32 kg and over that the vessel is certified to carry, plus (2) A SOLAS lifejacket suitable for each person aboard the vessel of mass of less than 32 kg
	DISTRESS SIGNALS
45 metres and over	12 parachute distress rockets
25 metres and over but less than 45 metres	6 parachute distress rockets 4 red hand flares 2 hand held orange smoke signals
Less than 25 metres	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal
	ELECTRICAL ALARM SIGNAL
25 metres and over	Electrical alarm signal for summoning crew to muster stations (where efficient mustering cannot be carried out by voice).
	EMERGENCY ELECTRICAL INSTALLATION/EQUIPMENT
Less than 50 metres and less than 500 tons	(1) A number of electric torches or hand lamps as determined by the Authority **Refer also to amended Section 9**

(Amendment dated 1 October 2008)

CLASS 3C

FISHING VESSELS-RESTRICTED SEAGOING

Reference should be made to Part 2 for stowage, marking, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
25 metres and over	LIFEBOATS AND INTERNAL BUOYANCY (1) Coastal lifeboat(s) for 100% complement on each side of the vessel, or (2) One coastal lifeboat for 100% complement capable of being launched from either side of vessel, or (3) Coastal liferaft(s) for 100% complement plus rescue boat
Less than 25 metres	(1) Coastal liferaft(s) for 100% complement, or (2) Dinghy for 100 % complement, or (3) In the case of a vessel of less than 15 metres measured length, internal buoyancy as prescribed by Appendix N
	LIFEBUOYS
60 metres and over	8 lifebuoys
45 metres and over but less than 60 metres	6 lifebuoys
25 metres and over but less than 45 metres	4 lifebuoys, 2 with lights and 2 with lines
15 metres and over but less than 25 metres	2 lifebuoys, one with light and one with line
Less than 15 metres	1 lifebuoy with light provided that these items are not required in: (1) A vessel under 10 metres length which carries only one person, or (2) A vessel less than 5 metres length which is fitted with internal buoyancy as prescribed by Appendix N
	At least 50% to have self-igniting lights, including 2 with smoke signals. 2 of remaining lifebuoys fitted with buoyant lines
	LIFEJACKETS
All lengths	A Coastal lifejacket with a light and whistle for each person that the vessel is certified to carry
	DISTRESS SIGNALS
25 metres and over	6 parachute distress rockets 4 red hand flares 2 hand held orange smoke signals
Less than 25 metres	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal
	ELECTRIC ALARM SIGNAL
25 metres and over	Electric alarm signal for mustering crew (where efficient mustering cannot be carried out by voice)
	EMERGENCY ELECTRICAL INSTALLATION/EQUIPMENT
All lengths	(1) A number of electrical torches or hand lamps as determined by the Authority **Refer to amended Section 9**

(Amendment dated 1 October 2008)

CLASS 3D

FISHING VESSELS-PARTIALLY SMOOTH WATERS

Reference should be made to Part 2 for marking, stowage, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
	BUOYANT APPLIANCES
25 metres and over	Sufficient buoyant appliances and/or lifebuoys to provide a total float-off capacity for 100% complement, provided that – (a) Each lifebuoy is assumed to provide support for two persons (b) A dinghy shall be included in the above appliances
10 metres and over but less than 25 metres	Sufficient buoyant appliances and/or lifebuoys to provide a total float-off capacity for 100% complement, provided that – (a) Each lifebuoy is assumed to provide support for two persons (b) A dinghy may be included in the above appliances
Less than 10 metres	(1) Buoyant appliances and/or lifebuoys for 100% complement, or (2) A dinghy for 100% complement, or (3) Internal buoyancy as prescribed in Appendix N
	LIFEBUOYS
	Included in 100% buoyancy above
15 metres and over	2 lifebuoys, at least one with light
Less than 15 metres	1 lifebuoy with light
	LIFEJACKETS
All lengths	A Coastal lifejacket for each person that the vessel is certified to carry
	DISTRESS SIGNALS
All lengths	3 parachute distress rockets 2 red hand flares 1 hand held orange smoke signal Note: Consistent with the area of operations allocated to the vessel, a reduction in distress signal may be permitted by the Authority
	EMERGENCY ELECTRICAL EQUIPMENT
All lengths	A number of electric torches or hand lamps as determined by the Authority

CLASS 3E

FISHING VESSELS-SMOOTH WATERS

Reference should be made to Part 2 for stowage, marking, etc., and Part 4 for specifications of equipment.

Measured Length	*L.S.A. Requirements*
	BUOYANT APPLIANCES AND/OR LIFEBUOYS
15 ≤ L	Sufficient buoyant appliances and/or lifebuoys to provide for 100% complement. It is assumed a lifebuoy will support two persons. A dinghy shall be included in the above appliances.
L < 15 m	***Either*** buoyant appliances and/or lifebuoys as for 15 metres and over, ***or*** the vessel is to be fitted with internal buoyancy as prescribed by Appendix N.
	LIFEBUOYS
15 ≤ L	2 lifebuoys, one with light
L < 15 m	1 lifebuoy, with light
	LIFEJACKETS
All lengths	A Coastal lifejacket for each person that the vessel is certified to carry
	DISTRESS SIGNALS
All lengths	Distress signals as determined by the Authority
	EMERGENCY ELECTRICAL EQUIPMENT
All lengths	Electric torches or hand lamps – number to be determined by the Authority

(Amendment dated 15 August 1995)

PART 4 – TYPES OF LIFE-SAVING APPLIANCES

The safety equipment a vessel is required to carry under this Section 10 must comply with the requirements contained in the Part C Design and Construction, Section 7 Equipment, Subsection 7A Safety Equipment, Chapter 2 Safety Equipment Design and Construction – Clause 2.12, including Table 1 and the Annexes and standards mentioned therein

With the following specific provisions to apply:

(Amendment dated 1 October 2008)

APPENDIX N

INTERNAL BUOYANCY IN SMALL VESSELS

1. The material shall have the following properties:

1.1 Density – 32kg/m^3 minimum

1.2 Compressive Strength (at 10 per cent strain) - 235 kPa minimum

1.3 Closed Cell Content - 92 per cent minimum

1.4 Water Uptake – 400 cc/m^3 maximum

1.5 Dimensional Stability-(original linear dimension = 100)

1.5.1 Temperature Cycling - -15°C to + 70°C

1.5.2 14 days under 100 mm head of kerosene, toluene (conforming to ASTM/D84l/l977), xylene (conforming to ASTM/D843/1977) or distillate (90 minimum).

1.6 Self-extinguishing to A.S.T.M. D-1692/68 - Burning rate maximum 10 cm per minute.

1.7 High resistance to kerosene, petrol, distillate and oils.

2. Tests to confirm the above properties shall be carried out as described in Appendix 0.

3. The required quantity of material in cubic metres shall be calculated by:

3.1 Wooden Vessels

$$\frac{1.2 \times F}{1000 - D}$$

3.2 Other Vessels

$$\frac{1.2\,(MK + F)}{1000 - D}$$

where

M = dry mass of hull material in kgs

$$K = \frac{\text{density of hull material - density of fresh water}}{\text{density of hull material}}$$

F = total dry mass of fittings and equipment, and machinery installation if fitted, in kgs

D = density of buoyancy material in kg/m^3

Note:

Unless otherwise determined by the Authority K may be taken as:

Aluminium 0.62

G.R.P. 0.375

Steel 0.87

4. The material shall not be sprayed in, in situ, but shall be manufactured in slab form under controlled conditions, cut into the required size and fitted into the vessel.

5. Before fitting into position, each slab of the material shall be coated on all surfaces with an approved fire retardant paint or fire retardant resin.

6. The material shall be fitted into the vessel so that:

6.1 the centre of mass of the material is above the flooded centre of gravity of the vessel;

6.2 it is protected from physical damage;

6.3 it is protected from direct sunlight;

6.4 it is at least 0.5 metres away from any dry exhaust line or other source of heat;

6.5 it is secured to the satisfaction of the Surveyor.

APPENDIX O

TESTING OF FOAM BUOYANCY MATERIALS FOR LIFE-SAVING APPLIANCES

1. General

1.1 The tests detailed in 2, 3 and 4 of this appendix are to be carried out on foam buoyancy materials intended for use in lifeboats, rigid rescue boats, rigid liferafts, buoyant appliances, lifejackets and lifebuoys.

1.1.1 The tests need not be carried out on foam buoyancy material intended for use in SOLAS lifeboats, rescue boats, liferafts, lifejackets or lifebuoys where the prototype articles have satisfactorily completed the tests required by Marine Orders Part 25.

(Amendment dated 15 August 1995)

1.2 A foam buoyancy material shall be used solely in connection with the buoyancy of those types of life-saving appliances for which the material has been satisfactorily tested.

1.3 Other inherent properties, not mentioned in this appendix, may render a material unsuitable for use in certain appliances or for particular applications. For example, a material acceptable for use as buoyancy material in lifeboats may be too brittle for other applications, e.g. in lifejackets. The suitability of a material will also depend on the way in which it is to be used in relation to the appliance under consideration.

1.4 Except for the fire resistance test and bonding test and for those tests carried out on completed lifebuoys the tests are to be carried out on specimens (without skin or coverings) measuring initially 150 mm x 150 mm x 150 mm. However, where the standard thickness of the material as manufactured is less than 150 mm, sufficient layers of material should be bonded together with an adhesive compatible with the foam and any materials used in the tests to obtain the required test thickness.

1.5 The density, in kg/m^3 of each specimen is to be determined before test and included in the test report.

1.6 The tests are to be carried out by an independent testing authority, acceptable to the Authority and their report forwarded for consideration to the Authority. Wherever possible details of the precise way in which the material is intended to be used in the appliance should be included with the report.

2. Lifeboats, rigid liferafts, buoyant apparatus

2.1 The following tests should be carried out on specimens of buoyancy materials intended for use in lifebuoys, rigid liferafts and buoyant apparatus and appliances.

2.1.1 Test for Stability under Temperature Cycling

(a) Six specimens are to be alternately submitted to surrounding air temperatures of - 40° ± 5°C and 66°C ± 5°C for periods of 8 hours each. Ten complete cycles of cooling and warming are to be carried out.

(b) For the convenience of the testing authority, these alternating cycles need not follow immediately after each other and the following procedure is acceptable:

(i) An 8 hour cycle at 66°C ± 1°C to be completed in one day.

(ii) The specimens removed from the warming chamber that same day and left exposed under ordinary room conditions until the next day.

(iii) An 8 hour cycle at - 40° ± 1°C to be completed the next day.

(iv) The specimens removed from the cold chamber that same day and left exposed under ordinary room conditions until the next day.

(v) Repeated for ten cycles.

(c) The dimensions of the specimens are to be recorded at the beginning and end of the ten cycle period. At the end of the tests the specimens are to be carefully examined externally for signs of cracking, and two of the specimens are to be cut open and examined for change of internal structure.

(d) The remaining four specimens are to be submitted to further tests as follows:

(i) two specimens shall undergo the tests for water absorption; and

(ii) two specimens shall undergo the test for oil resistance with toluene (conforming to ASTM/D841/1977) or xylene (conforming to ASTM/D843/1977) and shall then undergo the tests for water absorption.

(e) The test report shall include a reference to any loss of rigidity under high temperature.

2.1.2 Test for Petrol and Oil Resistance

(a) Ten additional specimens not previously subjected to any other tests are to be tested as follows:

(i) two specimens are to be immersed for a period of 14 days under a 100 mm head of Crude Oil;

(ii) two specimens are to be immersed for a period of 14 days under a 100 mm head of Fuel Oil;

(iii) two specimens are to be immersed for a period of 14 days under a 100 mm head of Diesel Oil;

(iv) two specimens are to be immersed for a period of 14 days under a 100mm head of toluene (conforming to ASTM/D841/1977) or xylene (conforming to ASTM/ D843/1977);

(v) two specimens are to be immersed for a period of 14 days under a 100 mm head of Kerosene.

(b) The tests shall be carried out at normal room temperature (approximately 20°C).

(c) The dimensions of the specimens are to be recorded at the beginning and end of these tests.

(d) The results should state the mass in kilograms which each specimen could support out of the liquid after 1, 7 and 14 days immersion.

(e) The specimens should be examined on completion of the tests for evidence of attack by solvents and a report included in the final test report.

(f) Two additional specimens which have already been subjected to the temperature cycling tests are to be tested against toluene (conforming to ASTM/D841/1977) or xylene (conforming to ASTM/D843/1977) and afterwards subjected to the water absorption test.

2.1.3 Test for Water Absorption

(a) The tests are to be carried out in fresh water and the specimens are to be immersed for a period of 14 days under a 1.2 m head of water.

(b) The following tests are required:

(i) On two specimens not previously subjected to any other tests;

(ii) On two specimens which have been subjected to the temperature cycling test.

(iii) On two specimens which have been subjected to the temperature cycling test followed by the toluene or xylene test.

(c) The dimensions of the specimens are to be recorded at the beginning and end of these tests.

(d) The results should state the mass in kilograms which each specimen could support out of the water after 1, 7 and 14 days immersion (the selection of a test method suitable for obtaining this form of result directly or indirectly is left to the discretion of the testing authority).

2.1.4 Fire Resistance

(a) Tests should be carried out in accordance with American Standard for Testing Materials (ASTM) D 1692/68.

2.1.5 Combustion Products

(a) The test report shall include details of any gases given off on combustion, and the concentration of such gases.

2.1.6 Chemical and Physical Effects

(a) Manufacturers shall guarantee that the material does not contain any elements which would have an adverse effect on, or be adversely affected by, wood, steel, aluminium alloy, polyester/epoxide glass fibre laminates, paints or varnishes. Additionally, manufacturers shall confirm that the material contains no water soluble elements which on leaching out would adversely affect the above materials.

2.1.7 Bonding Tests

(a) The following adhesives shall be used to bond specimens of the buoyancy material 25 mm x 50 mm x 50 mm to form cubes 50 mm x 50 mm x 50 mm. Three such cubes shall be formed for each adhesive to be used in the test:

(i) an epoxy-resin adhesive,

(ii) a synthetic rubber adhesive, solvent based.

(iii) any adhesive recommended by the manufacturer.

(b) When the adhesive has cured, the test specimens are to be cut open perpendicular to glue line and the buoyancy material examined for any deterioration due to the adhesive.

3. Lifejackets

3.1 For buoyancy material intended for use in lifejackets the requirements of the tests in 2 are to be applied, except that:

3.1.1 In 2.1.1 (d) the reference to 'toluene (conforming to ASTM/D841/1977) or xylene (conforming to ASTM/ D843/1977)' should be to 'diesel oil' and 'fuel oil';

3.1.2 In 2.1.2 (a) (ii) and (iii) the test shall be for 24 hours and not 14 days; and

3.1.3 In 2.1.3 (a) the tests shall be for 7 days and not 14 days.

3.2 Manufacturers of lifejackets shall guarantee to the Authority that the buoyancy material of the lifejacket is compatible with the covering material.

4. Lifebuoys

(Amendment dated 15 August 1995)

APPENDIX R

COASTAL LIFEJACKETS AND LIFEJACKET LIGHTS AND WHISTLES

The requirements for life-saving appliances are replaced by those requirements contained in the NSCV Part C Section 7 Subsection 7A, Chapter 2, Clause 2.12, including Table 1 and the Annexes and standards mentioned therein (which in part replaces Section 10 Parts 1, 2 and 4 of the USL Code).

(Amendment dated 1 October 2008)

APPENDIX V

PYROTECHNIC DISTRESS SIGNALS

The requirements for life-saving appliances are replaced by those requirements contained in the NSCV Part C Section 7 Subsection 7A, Chapter 2, Clause 2.12, including Table 1 and the Annexes and standards mentioned therein (which in part replaces Section 10 Parts 1, 2 and 4 of the USL Code).

(Amendment dated 1 October 2008)