

## APBA LIFE JACKET BASIC MANUFACTURING SPECIFICATIONS

### **NEW FOR 2013 RACE SEASON**

#### 1. SCOPE

1.1 These requirements cover buoyant devices which are used in power boat racing under the authority of the American Power Boat Association. The devices include life jackets used with both open and closed cockpit boats and restrained and unrestrained cockpits. Closed cockpit with unrestrained occupant is not considered.

1.2 Buoyant devices are called by many different names. Within the boat racing community the term "life jacket" is most common. Personal Floatation Device (PFD), life vest, boating vest and buoyant devices are other terms having the same meaning for the purposes of this document.

#### 2. GENERAL

2.1 The life jackets covered by this document must be provided with inherently buoyant material and shall not depend upon granulated or loose materials or use air/gas as a primary means of obtaining buoyancy.

2.2 The boat racing life jacket may or may not comply with specifications written by other organizations or agencies. This specification states minimum requirements. This specification is not intended to limit design innovations nor the use of new and or better materials. This specification is intended to try to eliminate the use of unsatisfactory materials and unsafe designs and provide minimum levels of performance.

### 3. DEFINITIONS

3.1 For the purpose of this specification, the following terms shall apply:

3.2 BUOYANT DEVICES (Life Jackets) The following defines life jackets covered by these requirements:

A. Type A. A device intended to turn an unconscious person from face down position to a position where the wearer's respiration is not impaired. A Type A Life Jacket is designed to be used in an open and unrestrained cockpit.

B. Type B. A device intended to be worn by a person in a racing cockpit where the wearer is restrained in the cockpit and other supplemental life support systems are not necessarily present.

C. Type C. A device intended to be worn by a person in a racing cockpit where the wearer is restrained in the cockpit and other supplemental life support systems requiring life jackets accommodations are present.

3.3 BUOANCY: The amount of buoyant material required to be available to the wearer. Any part of the life jacket or attachments which will not float must have additional buoyant material added to the life jacket to compensate for the loss of buoyancy.

3.4 CLOSURES

A. Primary: A means of securing the device on the body that causes the device to function in its intended manner without employing any other means of fastening the device to the body.

B. Secondary: A closure that, when used on the device by itself, does not make the device appear to be donned as intended and is not required to be closed to comply with the requirements of this document.

3.5 FOAM: A closed cell foamed polymeric material.

3.6 LOCK TYPE STITCH: A stitch that will not unravel when a force is applied in the direction of the seam on any of the threads forming the stitch.

3.7 SEAM: A joint consisting of a sequence or series of stitches uniting two or more pieces of material.

3.8 SKID COLLAR: A device which is an integral part of a Type A Life Jacket which deflects water from the base of a helmet upon a feet first entry by the wearer.

#### 4. COMMON FACTORS

4.1 All racing life jackets shall be designed for the purpose of racing and shall possess the following:

4.2 No “fungus nutrient” materials (cotton, linen, silk, hemp, sisal, cork etc.) may be used.

4.3 Metals shall be used in combinations which are galvanically compatible.

4.4 All fabrics shall be Cordura Nylon (brand name), polyurethane, backed or equal and made with a minimum 400 denier fabric with the following exception:

A. Type A Life Jackets to be used on boats whose top speed exceeds 100 mph **must have an outer cover made of 1000 denier nylon minimum and an inner cover of 410 denier nylon minimum.** These jackets will be called Type A-100.

4.5 No monofilament thread shall be used.

4.6 No materials shall be used which will be degraded more than 2% by prolonged exposure to either fresh or salt water.

4.7 All structural seams shall use a lock type stitch, type 301, as defined in Federal Standard 751 or better and as illustrated below:

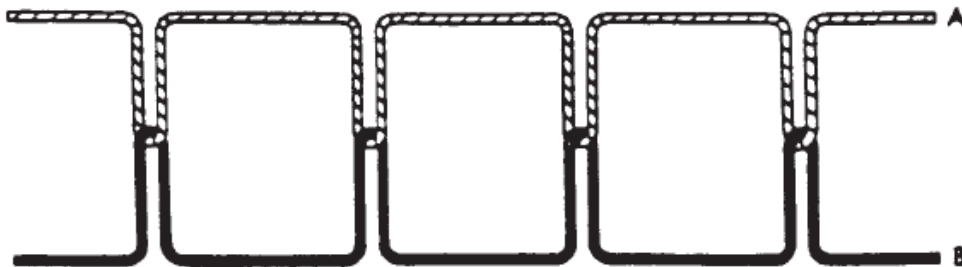


FIG. 11 Stitch Type 301

NOTE 1—This type of stitch shall be formed with two threads: one needle thread, A, and one bobbin thread, B. A loop of thread A shall be passed through the material and interlaced with thread B. Thread A shall be pulled back so that the interlacing shall be midway between surfaces of the material or materials being sewn.

4.8 All materials used in the fabrication of racing life jackets shall withstand storage temperatures from -30 degrees F to +130 degrees F without degradation.

4.9 The manufacturer or recertifier's name, the life jacket Type (A, A-100, B or C) and the date of manufacture or recertification shall be permanently marked on the life jacket.

The marking must be visible by looking on either the inside or outside of the jacket. The marking letters must be at least ¼ inch high and the method of marking must be functional throughout the life of the jacket. Warnings against any cleaning process that may make the markings illegible must be provided.

4.10 Strap ends must be doubled and stitched or dipped so as to not be able to unthread through the buckle or snap.

4.11 Velcro shall not be used as a primary means of closure, but may be used as a secondary means of closure. Velcro may be used on non critical closures and strap ends to stop wind flap.

4.12 All material used in racing life jackets must be oil, grease, gasoline and alcohol resistant.

4.13 The design of the life jacket must be such that the proper method of donning and wearing the jacket is obvious and no special method of training is required for proper use. Manufacturer instruction sheets are encouraged.

4.14 Secondary flotation systems using air/gas are permitted so long as the minimum buoyancy requirement is met using permanent type buoyant materials.

4.15 **Impact material is required in all A-100 jackets. The impact material** shall be 0.06 inch low or medium density polypropylene or equal type material. The polypropylene must be the layer immediately under the outer cover and **the flotation material must be against the inner cover.**

4.16 Parachutes or other devices attached to the life jacket may be required by individual categories or classes.

4.17 All life jackets shall have at least 70% of the upper surfaces, both front and back, international orange or yellow in color.

5. TYPE A LIFE JACKETS ( Includes Type A & A-100)

5.1 Type A Life Jackets shall have buckle type straps across all primary closures.

5.2 Skid Collars, when used, shall be as follows:

- A. The skid collar shall be integral to the life jacket by being stitched in place.
- B. The skid collar shall be covered with the same fabric as the rest of the life jacket.
- C. The skid collar shall have ¼" thick Sentinel Olefoam (brand name) or equal as a core. The area of required coverage shall be from 120 degrees to 230 degrees when measured from the midsagittal plane.
- D. The skid collar shall be sufficiently tall to provide some overlap of the helmet when the wearer is standing in a vertical, erect, relaxed stance.
- E. Additional flotation and / or padding in the skid collar are permissible.
- F. The skid collar must be international orange or yellow on all surfaces.

5.3 The design of the life jacket shall be such that body padding **and impact protection shall cover the front back and sides of the torso.**

5.4 **Jackets equipped with leg straps shall not use a waist strap as a primary means of attachment to the jacket.** The leg straps must take their primary stress over the wearer's shoulders.

5.5 The flotation buoyancy for Type A Life Jackets shall be a minimum of 18 pounds.

5.6 The flotation material must be so distributed so as to have at least 15% more flotation on one side than is on the other side laterally. Note: Normally the greater flotation will be on the left side of the jacket.

**5.7 All A-100 life jackets will contain impact material.**

## 6. TYPE B LIFE JACKETS

6.1 Type B Life Jackets shall have straps on each shoulder area which allow a rescuer to have an easy and secure grasp.

6.2 Type B Life Jackets shall be designed in such a manner that the currently required retention system in the boats shall not be interfered with.

6.3 The flotation buoyancy for the Type B jacket is 10 pounds plus or minus one pound.

6.4 **Type B Lifejackets may be incorporated into a Driving Suit so long as specs 6.1, 6.2 and 6.3 are complied with.**

## 7. TYPE C LIFE JACKETS

7.1 Type C Life Jackets shall have straps on each shoulder area which allow a rescuer to have an easy and secure grasp.

7.2 Type C Life Jackets may be designed to hold or assist in holding other life support systems. Any such attachments must be designed in a manner so that there is no, or only minimal, interference with the current specified restraint system in the boat. The life support system attachments must be so designed that they cannot be confused with the safety belt release mechanism when operated without the aid of eyesight. All life support attachments to the life jacket must be the pull release type.

7.3 The flotation buoyancy for the Type C Life Jacket is 10 pounds plus or minus one pound.

7.4 Type C Life Jackets may be incorporated into a driving suit so long as the material and color requirements of paragraph 4.4 and 4.17 are complied with. The areas of special material and color coverage shall be from the upper most surface to the waist excluding the arms.