(ii) Not require tools to operate it;
(iii) Have an intended method of operation that is obvious to an untrained wearer, and
(iv) Not be able to be locked in the open or closed position.
(3) The deflation mechanism may be the oral inflation mechanism.
(e) Sewn seams. Stitching used in each structural seam of a PFD must provide performance equal to or better than a Class 300 Lockstitch meeting Federal Standard No. 751.

§ 160.077–17 Construction and Performance—Type I and Commercial Hybrid PFD.
(a) General. Each commercial hybrid PFD must meet—
(1) Paragraph (b) of this section; and
(b) Additional requirements. Each commercial hybrid PFD must—
(1) Be able to pass the tests in §160.077–21;
(2) Not present a snag hazard when properly worn;
(3) When worn inflated, have a visible external surface area of at least 1300 sq. cm (200 sq. in.) in front and 450 sq. cm (70 sq. in.) in back that are primarily vivid reddish orange as defined by sections 13 and 14 of the “Color Names Dictionary”; 
(4) Have at least one inflation chamber, except that a hybrid PFD approved as a SOLAS lifejacket must have at least two inflation chambers;
(5) Have at least one manual inflation mechanism.
(6) Have at least one automatic inflation mechanism that inflates at least one chamber; and
(7) Not require second stage donning after inflation.
(8) If approved for adults, be universally sized as specified in §160.077–15(b)(7).
(9) Commercial hybrid PFDs employing closures with less than 1600 N (360 lb) strength, must have at least two closures that meet UL 1517, Section 22.1.
(10) Each commercial hybrid PFD must have an attachment for a PFD light securely fastened to the front shoulder area. The location should be such that if the light is attached it will not damage or impair the performance of the PFD.
(11) In the deflated and the inflated condition, provide buoyancies of at least the values in Table 160.077–17(b)(11).

| TABLE 160.077–17(b)(11)—Minimum Buoyancy of Type I and Commercial Hybrid PFDs |
|-----------------------------------|---|---|---|
|                                   | Adult | Youth | Small child |
| Homogeneous buoyancy (deflated condition): | | | |
| Type I                             | 70 N (15.5 lb) | 50 N (11 lb) | 40 N (9 lb) |
| Type V                             | 60 N (13 lb) | 34 N (7.5 lb) | N/A |

| Total buoyancy (inflated condition): | | | |
| Type I                             | 130 N (30 lb) | 80 N (18 lb) | 67 N (15 lb) |
| Type V                             | 100 N (22 lb) | 67 N (15 lb) | N/A |

§ 160.077–19 Approval Testing—Recreational Hybrid PFD’s.
(a) General. (1) This section contains approval tests and examinations for recreational hybrid PFD’s. Each test and examination must be conducted or supervised by an independent laboratory. The tests must be done using PFD’s that have been constructed in accordance with the plans and specifications in the application for approval. In each test only one PFD is required to be tested unless otherwise specified or needed to complete the tests in paragraph (d) of this section.
(2) All data relating to buoyancy and pressure must be taken at, or corrected to, standard atmospheric pressure of 760 mm (29.92 inches) of mercury and temperature of 20 °C (68 °F).
(3) The tests in paragraph (b) of this section must be completed before doing the tests in paragraph (d) of this section.

180