INTERNATIONAL MARITIME ORGANIZATION

E

4 ALBERT EMBANKMENT
LONDON SE1 7SR
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

MSC.1/Circ.1470
29 May 2014

GUIDELINES FOR VALIDATING THE CONSTRUCTION OF A COMPLETED ADULT LIFEJACKET REFERENCE TEST DEVICE (RTD)

1 The Maritime Safety Committee, at its ninety-third session (14 to 23 May 2014), approved the *Guidelines for validating the construction of a completed adult lifejacket reference test device (RTD)*, set out in the annex, following the recommendations made by the Sub-Committee on Ship Design and Equipment, at its fifty-seventh session.

2 Proper construction and continued consistency with the design documentation of the lifejacket RTD should be validated using these Guidelines after initial construction and following periodic buoyancy calibration.

3 Member Governments are urged to use the annexed Guidelines when constructing and calibrating the buoyancy of lifejacket RTDs, and to bring them to the attention of all parties concerned.

***

ANNEX

GUIDELINES FOR VALIDATING THE CONSTRUCTION OF A COMPLETED ADULT LIFEJACKET REFERENCE TEST DEVICE (RTD)

1 Scope and purpose

These Guidelines provide guidance for checking dimensions, buoyancy and buoyancy distribution to ensure that each RTD produced will represent the same in-water performance characteristics as the original prototype. This validation should be performed after initial construction and repeated after reassembling the RTD following buoyancy calibration checks.

2 General

2.1 Spot check foam inserts. While it is not necessary to conduct a full check of all the dimensions of the foam, a spot check of one out of every five RTDs should be made of a representative sampling of foam pieces against the dimensions in the appropriate annex to the *Revised recommendation on testing of life-saving appliances* (resolution MSC.81(70)). The values should be within ± 6 mm.

2.2 The following should be recorded for each RTD produced:

.1 date of construction;

.2 serial numbers;

.3 total buoyancy of the RTD;

.4 buoyancy of the foam inserts, as follows:

.1 combined buoyancy of four front panels;

.2 combined buoyancy of collar and back panel; and

.3 calculated total buoyancy (sum of four front, collar and back panels); and

.5 measurements made according to these Guidelines.

3 Fabric and webbing measurements

3.1 Place a small mark on the shoulder seam 44.5 mm from the inside edge of the neck seam (see figure 1). This mark will be the reference point for measuring distances on the front and back panels. The vertical webbing should be within ± 6.5 mm of this point.

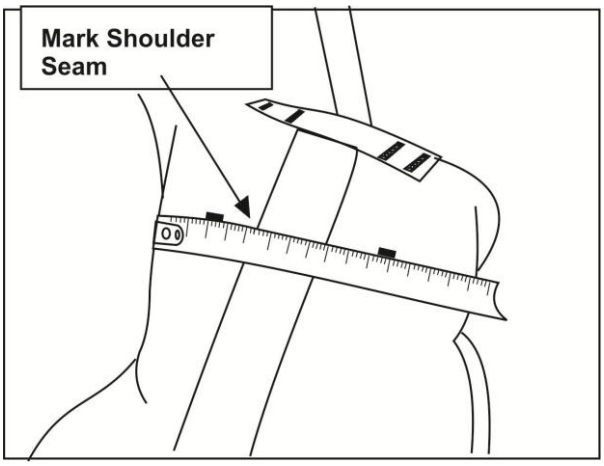

Figure 1 – Establish reference point on the shoulder seam

3.2 *Shoulder loop.* Measure the distance from the reference point to the location where the inside edge of the yellow webbing first passes under the black shoulder loop (see figure 2). This distance should be 73 ± 6 mm.

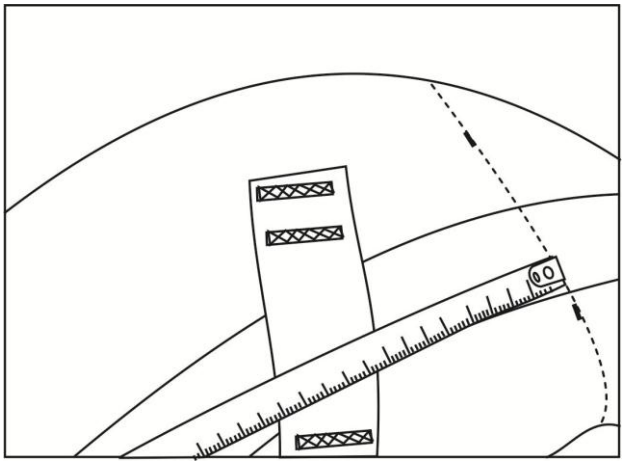

Figure 2 – Check distance to shoulder loop

3.3 *Chest strap.* Measure the distance from the reference point to the top of the chest strap (see figure 3). This distance should be 168 ± 6 mm.

3.4 *Waist belt.* Measure the distance from the reference point to the top of the waist belt (see figure 3). This distance should be 416 ± 3 mm.

3.5 *Front panel length.* Measure the distance from the reference point to the bottom of the foam (see figure 3). This distance should be 489 ± 6 mm.

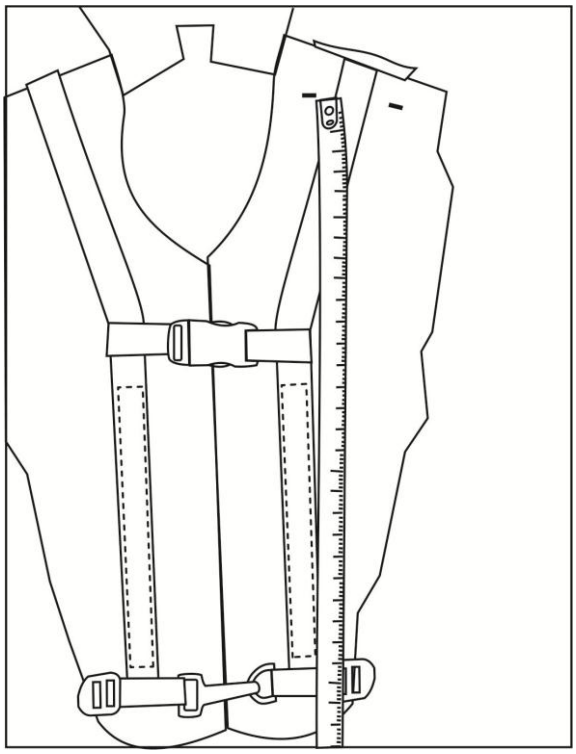

Figure 3 – Check the overall length of front panel and the location of the closures

3.6 *Waist belt.* Measure the distance from the reference point over the shoulder and down the back panel to the top of the waist belt (see figure 4). This distance should be 515 ± 6 mm.

3.7 *Back panel length.* Measure the distance from the reference point to the bottom of the back panel (see figure 4). This distance should be 550 ± 6 mm.

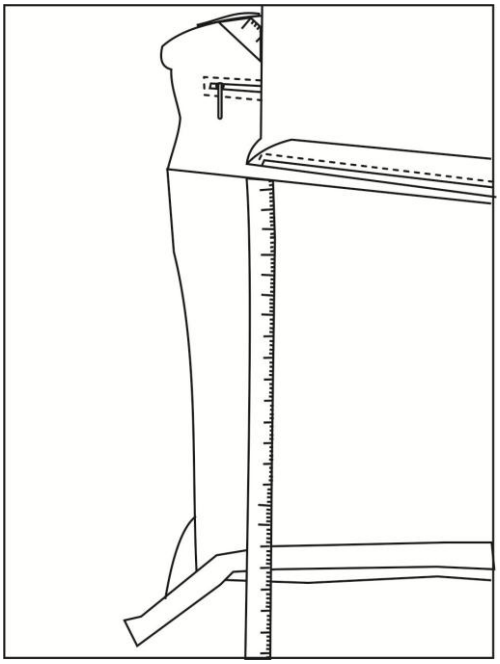

Figure 4 – Check the overall length of back panel and location of waist belt

3.8 *Collar attachment location.* To check the collar attachment location, hold the RTD by the collar, keeping the collar level so the RTD hangs freely. Measure from the top back edge of the foam down to the centre of the neck seam as shown in figure 5. This distance should be 342 ± 6 mm.

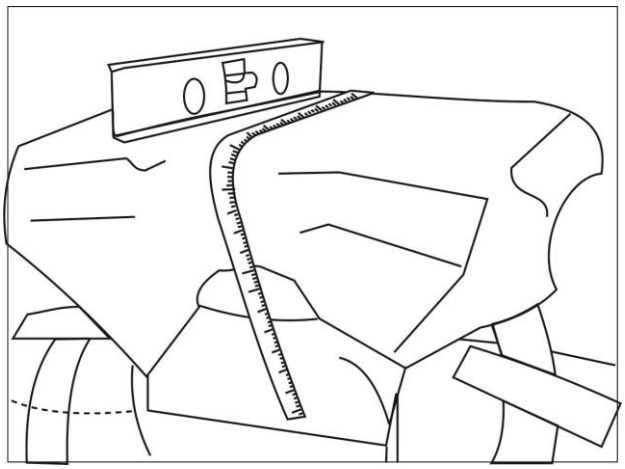

Figure 5 – Check the collar attachment location

3.9 *Webbing attachment to collar.* To check the location of the vertical webbing attachment to the collar, measure the distance from the edge of the foam (at the end opposite from the zipper) to the front seams of the box-X stitching (see figure 6). This distance should be 111 ± 6 mm.

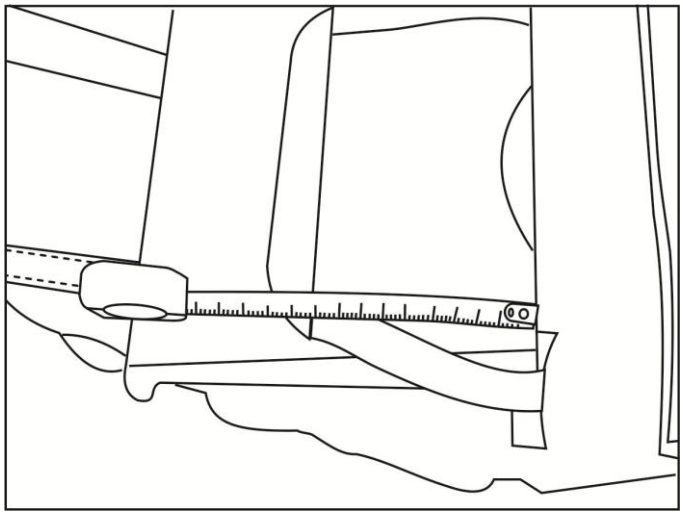

Figure 6 – Check location of vertical webbing attachment to collar

3.10 *Webbing length (chest strap to collar attachment).* To check the length of the vertical webbing from the top of the chest strap to the attachment at the collar, measure the inside distance between the box-X stitches located on the chest strap (front panel) and on the underside of the collar (see figure 7). This distance should be 263 ± 6 mm.

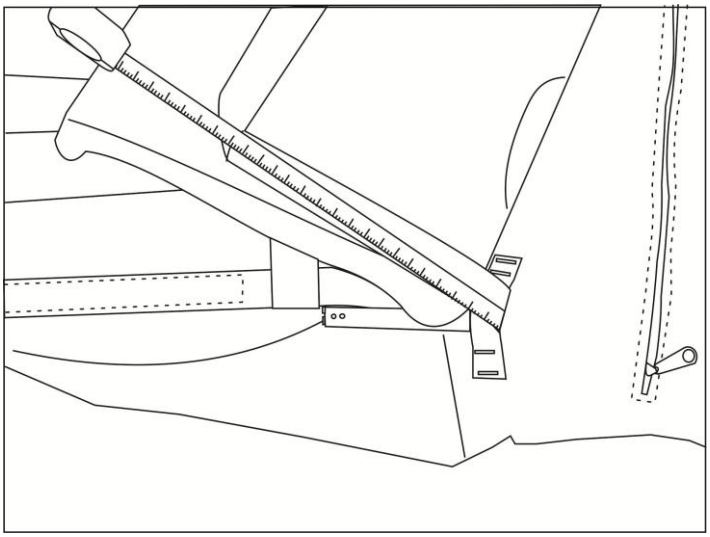

Figure 7 – Check length of webbing from chest strap to collar attachment

3.11 *Finished waist belt assembly length.* To check the finished length of the waist belt assembly, measure the overall length with the buckle unfastened and the adjustments in the full open position (maximum length). Lay the RTD on a flat surface and measure the fully extended length of the assembly. For consistency, measure the distance from where the snap hook fastens in the D-Ring. This distance should be 1700 ± 12 mm.

3.12 *Finished neck size.* A suitably sized cone (such as a traffic cone) should be used to check the finished neck size. The cone should be rigid, have a slope of 8.5° ± 1.5°, and be tall enough to allow the RTD to fit as shown in figure 8. If a flexible cone (such as a plastic traffic safety cone) is used it should be filled with rigid foam, concrete, or similar substance to make it rigid.

3.13 With both chest and waist belt buckles fastened and the waist belt adjusted to the full open position, place the RTD on the cone with just enough force so it will fit snug to the cone, but not forcing it down.

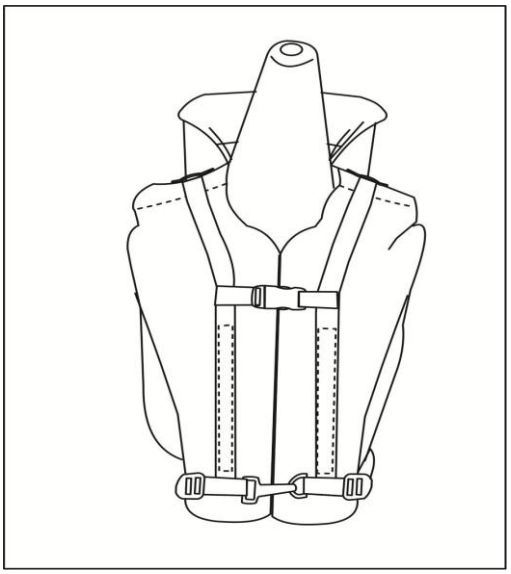

Figure 8 – Positioning the RTD

3.14 Place a mark on both sides of the cone where the shoulder seam contacts the cone (see figure 9). This mark may be used to facilitate subsequent validations. Measure the circumference around the cone at the mark. The circumference should be 395 ± 6 mm.

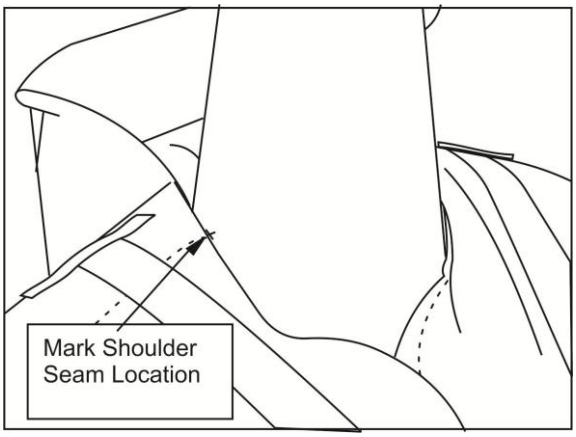

Figure 9 – Check circumference of finished neck