

Specifications for Certified BRDs

The following descriptions of specifications for certified BRDs are from *Unofficial compilation of federal relations prepared by the Southeast Regional Office of NMFS, Appendix D to Part 622* found at the following web site: <http://caldera.sero.nmfs.gov/fishery/regs.htm> All information below includes any changes made in the regulations up to Feb. 4, 2004.

A. Extended Funnel Bycatch Reduction Device

1. Description. The extended funnel BRD consists of an extension with large-mesh webbing in the center (the large-mesh escape section) and small-mesh webbing on each end held open by a semi-rigid hoop. A funnel of small-mesh webbing is placed inside the extension to form a passage for shrimp to the codend. It also creates an area of reduced water flow to allow for fish escapement through the large mesh. One side of the funnel is extended vertically to form a lead panel and area of reduced water flow. There are two sizes of extended funnel BRDs, a standard size and an inshore size for small trawls.

2. Minimum Construction and Installation Requirements for Standard Size.

(a) Extension Material. The small-mesh sections used on both sides of the large-mesh escape section are constructed of 1 5/8 inch (4.13 cm), No. 30 stretched mesh, nylon webbing. The front section is 120 meshes around by 6 1/2 meshes deep. The back section is 120 meshes around by 23 meshes deep.

(b) Large-Mesh Escape Section. The large-mesh escape section is constructed of 8 to 10 inch (20.3 to 25.4 cm), stretched mesh, webbing. This section is cut on the bar to form a section that is 15 inches (38.1 cm) in length by 95 inches (241.3 cm) in circumference. The leading edge is attached to the 6 1/2-mesh extension section and the rear edge is attached to the 23-mesh extension section.

(c) Funnel. The funnel is constructed of 1 1/2 inch (3.81 cm), stretched mesh, No. 30 depth-stretched and heat-set polyethylene webbing. The circumference of the leading edge is 120 meshes and the back edge is 78 meshes. The short side of the funnel is 34 to 36 inches (86.4 to 91.4 cm) long and the opposite side of the funnel extends an additional 22 to 24 inches (55.9 to 61.0 cm). The circumference of the leading edge of the funnel is attached to the forward small-mesh section three meshes forward of the large-mesh escape section and is evenly sewn, mesh for mesh, to the small-mesh section. The after edge of the funnel is attached to the after small-mesh section at its top and bottom eight meshes back from the large-mesh escape panel. Seven meshes of the top and seven meshes of the bottom of the funnel are attached to eight meshes at the top and bottom of the small-mesh section, such eight meshes being located immediately adjacent to the top and bottom centers of the small-mesh section on the side of the funnel's extended side. The extended side of the funnel is sewn at its top and bottom to the top and bottom of the small-mesh section, extending at an angle toward the top and bottom centers of the small-mesh section.

(d) Semi-Rigid Hoop. A 30-inch (76.2-cm) diameter hoop constructed of plastic-coated trawl cable, swaged together with a 3/8-inch (9.53-mm) micropress sleeve, is installed five meshes behind the trailing edge of the large-mesh escape section. The extension webbing must be laced to the ring around the entire circumference and must be equally distributed on the hoop, that is, 30 meshes must be evenly attached to each quadrant.

(e) Installation. The extended funnel BRD is attached 8 inches (20.3 cm) behind the posterior edge of the TED. If it is attached behind a soft TED, a second semi-rigid hoop, as prescribed in paragraph A.2.(d), must be installed in the front section of the BRD extension webbing at the leading edge of the funnel. The codend of the trawl net is attached to the trailing edge of the BRD.

3. Minimum Construction and Installation Requirements for Inshore Size.

(a) Extension Material. The small-mesh sections used on both sides of the large-mesh escape section are constructed of 1 3/8 inch (3.5 cm), No. 18 stretched mesh, nylon webbing. The front section is 120 meshes around by 6 1/2 meshes deep. The back section is 120 meshes around by 23 meshes deep.

(b) Large-Mesh Escape Section. The large-mesh escape section is constructed of 8 to 10 inch (20.3 to 25.4 cm), stretched mesh, webbing. This section is cut on the bar to form a section that is 15 inches (38.1 cm) by 75 inches (190.5 cm) in circumference. The leading edge is attached to the 6 1/2-mesh extension section and the rear edge is attached to the 23-mesh extension section.

(c) Funnel. The funnel is constructed of 1 3/8 inch (3.5 cm), stretched mesh, No. 18 depth-stretched and heat-set polyethylene webbing. The circumference of the leading edge is 120 meshes and the back edge is 78 meshes. The short side of the funnel is 30 to 32 inches (76.2 to 81.3 cm) long and the opposite side of the funnel extends an additional 20 to 22 inches (50.8 to 55.9 cm). The circumference of the leading edge of the funnel is attached to the forward small-mesh section three meshes forward of the large-mesh escape section and is evenly sewn, mesh for mesh, to the small-mesh section. The after edge of the funnel is attached to the after small-mesh section at its top and bottom eight meshes back from the large-mesh escape panel. Seven meshes of the top and seven meshes of the bottom of the funnel are attached to eight meshes at the top and bottom of the small-mesh section, such eight meshes being located immediately adjacent to the top and bottom centers of the small-mesh section on the side of the funnel's extended side. The extended side of the funnel is sewn at its top and bottom to the top and bottom of the small-mesh section, extending at an angle toward the top and bottom centers of the small-mesh section.

(d) Semi-Rigid Hoop. A 24-inch (61.0-cm) diameter hoop constructed of plastic-coated trawl cable, swaged together with a 3/8-inch (9.53-mm) micropress sleeve, is installed five meshes behind the trailing edge of the large mesh section. The extension webbing must be laced to the ring around the entire circumference and must be equally distributed on the hoop, that is, 30 meshes must be evenly attached to each quadrant.

(e) Installation. The extended funnel BRD is attached 8 inches (20.3 cm) behind the posterior edge of the TED. If it is attached behind a soft TED, a second semi-rigid hoop, as prescribed in paragraph A.3.(d), must be installed in the front section of the BRD extension webbing at the leading edge of the funnel. The codend of the trawl net is attached to the trailing edge of the BRD.

B. Expanded Mesh Bycatch Reduction Device

1. Description, Construction, and Installation. The expanded mesh BRD is constructed and installed exactly the same as the standard size extended funnel BRD above, except that one side of the funnel is not extended to form a lead panel.

C. Fisheye Bycatch Reduction Device

1. Description. The fisheye BRD is a cone-shaped rigid frame constructed from aluminum or steel rod of at least 1/4 inch diameter, which is inserted into the codend to form an escape opening. Fisheyes of several different shapes and sizes have been tested in different positions in the codend.

2. Minimum Construction and Installation Requirements. The fisheye has a minimum opening dimension of 5 inches (12.7 cm) and a minimum total opening area of 36 square inches (91.4 square centimeters). The fisheye must be installed at the top center of the codend of the trawl to create an opening in the trawl facing in the direction of the mouth of the trawl no further forward than 11 ft (3.4 m) from the codend drawstring (tie-off rings) or 70 percent of the distance between the codend drawstring and the forward edge of the codend, excluding any extension, whichever is the shorter distance. In the Gulf EEZ only, when the fisheye BRD is installed in this position, no part of the lazy line attachment system (i.e., any mechanism, such as elephant ears or choker straps, used to attach the lazy line to the codend) may overlap the fisheye escape opening when the fisheye is installed aft of the attachment point of the codend retrieval system.

D. Gulf fisheye.

1. Description. The Gulf fisheye BRD is a cone-shaped rigid frame constructed from aluminum or steel that is inserted into the top center of the codend, or is offset not more than 15 meshes perpendicular to the top center of the codend, to form an escape opening.

2. Minimum Construction and Installation Requirements. The Gulf fisheye BRD is a cone-shaped rigid frame constructed of aluminum or steel rods. The rods must be at least 1/4-inch (6.35-mm) in diameter. Any dimension of the escape opening must be at least 5.0 inches (12.7 cm), and the total escape opening area must be at least 36.0 square inches (232.3 square centimeters). The Gulf fisheye must be installed in the codend of the trawl to create an escape opening in the trawl, facing in the direction of the mouth of the trawl, no further forward than 12.5 ft (3.81 m) and no less than 8.5 ft (2.59 m) from the codend tie-off rings. When installed in this position, no part of the lazy line attachment system (i.e., any mechanism, such as elephant ears or choker straps, used to attach the lazy line to the codend) may overlap the fisheye escape opening when the fisheye is installed aft of the attachment point of the codend retrieval system. The Gulf fisheye

BRD may not be offset more than 15 meshes perpendicular to the top center of the codend.

E. Jones-Davis.

1. Description. The Jones-Davis BRD is similar to the expanded mesh and the extended funnel BRDs except that the fish escape openings are windows cut around the funnel rather than large-mesh sections. In addition, a webbing cone fish deflector is installed behind the funnel.

2. Minimum Construction and Installation Requirements. The Jones-Davis BRD must contain all of the following.

(a) Webbing extension. The webbing extension must be constructed from a single piece of 1 5/8-inch (3.5-cm) stretch mesh number 30 nylon 42 meshes by 120 meshes. A tube is formed from the extension webbing by sewing the 42-mesh side together.

(b) A 28-inch (71.1-cm) cable hoop. A single hoop must be constructed of 1/2-inch (1.3-cm) steel cable 88 inches (223.5 cm) in length. The cable must be joined at its ends by a 3-inch (7.6-cm) piece of 1/2-inch (1.3-cm) aluminum pipe and pressed with a 3/8-inch (0.95-cm) die to form a hoop. The inside diameter of this hoop must be between 27 and 29 inches (68.6 and 73.7 cm). The hoop must be attached to the extension webbing 17 1/2 meshes behind the leading edge. The extension webbing must be quartered and attached in four places around the hoop, and every other mesh must be attached all the way around the hoop using number 24 twine or larger. The hoop must be laced with 3/8-inch (0.95-cm) polypropylene or polyethylene rope for chaffing.

(c) A 24-inch (61.0-cm) hoop. A single hoop must be constructed of either number 60 twine 80 inches (203.2 cm) in length or 3/8-inch (0.95-cm) steel cable 75 1/2 inches (191.8 cm) in length. If twine is used, the twine must be laced in and out of the extension webbing 39 meshes behind the leading edge, and the ends must be tied together. If cable is used, the cable must be joined at its ends by a 3-inch (7.6-cm) piece of 3/8-inch (0.95-cm) aluminum pipe and pressed together with a 1/4-inch (0.64-cm) die to form a hoop. The inside diameter of this hoop must be between 23 and 25 inches (58.4 and 63.4 cm). The hoop must be attached to the extension webbing 39 meshes behind the leading edge. The extension webbing must be quartered and attached in four places around the hoop, and every other mesh must be attached all the way around the hoop using number 24 twine or larger. The hoop must be laced with 3/8-inch (0.95-cm) polypropylene or polyethylene rope for chaffing.

(d) Funnel. The funnel must be constructed from four sections of 1 1/2-inch (3.8-cm) heat-set and depth-stretched polypropylene or polyethylene webbing. The two side sections must be rectangular in shape, 29 1/2 meshes on the leading edge by 23 meshes deep. The top and bottom sections are 29 1/2 meshes on the leading edge by 23 meshes deep and tapered 1 point 2 bars on both sides down to 8 meshes across the back. The four sections must be sewn together down the 23-mesh edge to form the funnel.

(e) Attachment of the funnel in the webbing extension. The funnel must be installed two meshes behind the leading edge of the extension starting at the center seam of the extension and the center mesh of the funnel's top section leading edge. On the same row of meshes, the funnel must be sewn evenly all the way around the inside of the extension. The funnel's top and bottom back edges must be attached one mesh behind the 28-inch (71.1-cm) cable hoop (front hoop). Starting at the top center seam, the back edge of the top funnel section must be attached four meshes each side of the center. Counting around 60 meshes from the top center, the back edge of the bottom section must be attached 4 meshes on each side of the bottom center. Clearance between the side of the funnel and the 28-inch (71.1-cm) cable hoop (front hoop) must be at least 6 inches (15.2 cm) when measured in the hanging position.

(f) Cutting the escape openings. The leading edge of the escape opening must be located within 18 inches (45.7 cm) of the posterior edge of the turtle excluder device (TED) grid. The area of the escape opening must total at least 864 square inches (5,574.2 square centimeters). Two escape openings 10 meshes wide by 13 meshes deep must be cut 6 meshes apart in the extension webbing, starting at the top center extension seam, 3 meshes back from the leading edge and 16 meshes to the left and to the right (total of four openings). The four escape openings must be double selvaged for strength.

(g) Alternative Method for Constructing the Funnel and Escape Openings. The following method for constructing the funnel and escape openings may be used instead of the method described in paragraphs F.2.d., F.2.e., and F.2.f. of this section. With this alternative method, the funnel and escape openings are formed by cutting a flap in each side of the extension webbing; pushing the flaps inward; and attaching the top and bottom edges along the bars of the extension webbing to form the v-shape of the funnel. Minimum requirements applicable to this method include: (1) The funnel's top and bottom back edges must be attached one mesh behind the 28-inch (71.1-cm) cable hoop (front hoop); (2) clearance between the side of the funnel and the 28-inch (71.1-cm) cable hoop (front hoop) must be at least 6 inches (15.2 cm) when measured in the hanging position; (3) the leading edge of the escape opening must be located within 18 inches (45.7 cm) of the posterior edge of the turtle excluder device (TED) grid; and, (4) the area of the escape opening must total at least 864 square inches (5,574.2 square centimeters). To construct the funnel and escape openings using this method, begin 3 1/2 meshes from the leading edge of the extension, at the top center seam, count over 18 meshes on each side, and cut 13 meshes toward the back of the extension. Turn parallel to the leading edge, and cut 26 meshes toward the bottom center of the extension. Next, turn parallel to the top center seam, and cut 13 meshes forward toward the leading edge, creating a flap of webbing 13 meshes by 26 meshes by 13 meshes. Lengthen the flap to 18 meshes by adding a 4 1/2-mesh by 26-mesh rectangular section of webbing to the 26-mesh edge. Attach the 18-mesh edges to the top and bottom of the extension by sewing 2 bars of the extension to 1 mesh on the flap in toward the top center and bottom center of the extension, forming the exit opening and the funnel. Connect the two flaps together in the center with a 7-inch piece of number 42 twine to allow adequate clearance for fish escapement between the flaps and the side openings. On each side, sew a 6-mesh by 10 1/2-mesh section of webbing to 6 meshes of the center of the 26-mesh cut on the

extension and 6 meshes centered between the 13-mesh cuts 3 1/2 meshes from the leading edge. This forms two 10-mesh by 13-mesh openings on each side.

(h) Cone fish deflector. The cone fish deflector is constructed of 2 pieces of 1 5/8-inch (4.13-cm) polypropylene or polyethylene webbing, 40 meshes wide by 20 meshes in length and cut on the bar on each side forming a triangle. Starting at the apex of the two triangles, the two pieces must be sewn together to form a cone of webbing. The apex of the cone fish deflector must be positioned within 10-14 inches (25.4-35.6 cm) of the posterior edge of the funnel.

(i) 11-inch (27.9-cm) cable hoop for cone deflector. A single hoop must be constructed of 5/16-inch (0.79-cm) or 3/8-inch (0.95-cm) cable 34 1/2 inches (87.6 cm) in length. The ends must be joined by a 3-inch (7.6-cm) piece of 3/8-inch (0.95-cm) aluminum pipe pressed together with a 1/4-inch (0.64-cm) die. The hoop must be inserted in the webbing cone, attached 10 meshes from the apex and laced all the way around with heavy twine.

(j) Installation of the cone in the extension. The cone must be installed in the extension 12 inches (30.5 cm) behind the back edge of the funnel and attached in four places. The midpoint of a piece of number 60 twine 4 ft (1.22 m) in length must be attached to the apex of the cone. This piece of twine must be attached to the 28-inch (71.1-cm) cable hoop at the center of each of its sides; the points of attachment for the two pieces of twine must be measured 20 inches (50.8 cm) from the midpoint attachment. Two 8-inch (20.3-cm) pieces of number 60 twine must be attached to the top and bottom of the 11-inch (27.9-cm) cone hoop. The opposite ends of these two pieces of twine must be attached to the top and bottom center of the 24-inch (61-cm) cable hoop; the points of attachment for the two pieces of twine must be measured 4 inches (10.2 cm) from the points where they are tied to the 11-inch (27.9-cm) cone hoop.