

Grid angle

The angle at which the TED is installed is crucial for directing large bycatch species to the escape opening. Too steep and animals will jam on the grid; too acute and the nets will collapse and close up (resulting in product loss). The more acute the grid angle the larger the grid needs to be to maintain net height. Figure 4b shows the minimum and maximum grid angles required.



Figure 4a. Acceptable TED installation angle

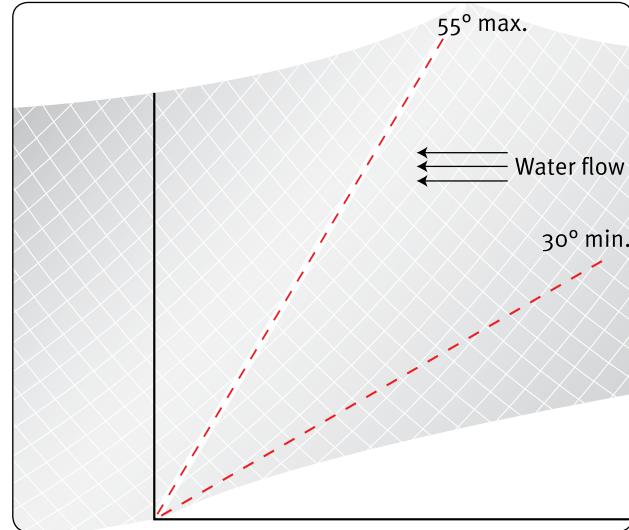


Figure 4b. The TED must be installed in the net at an angle between 30° and 55° from the normal horizontal flow through the net

TED angle formula

To work out the angle of a TED installed in a net, you will need to count the number of meshes difference between the top of the grid and the bottom. Count along a row of meshes from the top of the grid to a point half way around the circumference of the net. The mesh count is the number of meshes between this point and the attachment point of the bottom of the grid (see Figure 5).

Mesh counts provide a guide for the grid's angle of installation and vary according to grid height and mesh size.

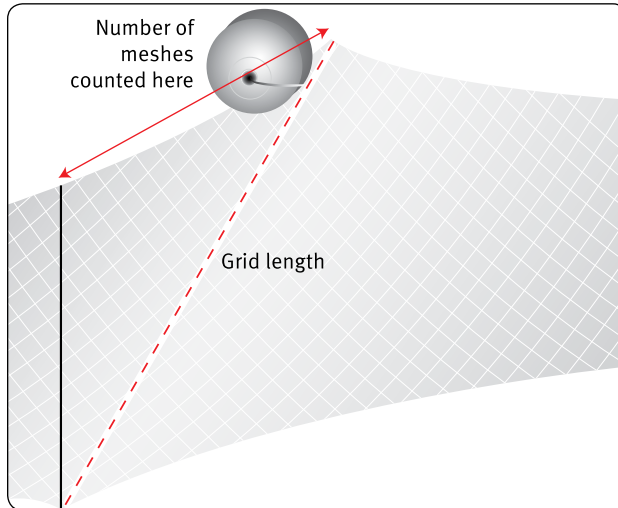


Figure 5. Where to count meshes on a bottom-shooting TED to determine grid angle

$$\text{No. of meshes} = \frac{\text{Grid length} \times \text{Cos angle } (\theta)}{\text{Mesh size}}$$

For example, if a grid measuring 810 mm was inserted at 55° into a codend with a mesh size of 38 mm, the number of meshes required would be:

$$\begin{aligned} \text{No. of meshes} &= \frac{810 \text{ mm} \times \text{Cos } 55}{38 \text{ mm}} = \frac{810 \text{ mm} \times 0.573}{38 \text{ mm}} \\ &= 12 \text{ meshes} \end{aligned}$$

Table 1. Number of meshes required for a 30° and 55° angle TED (**grid size = 810 mm**) layover

		30° angle	55° angle
Mesh size – centre of knot to centre of knot (millimetres)	Mesh size (inches)	(0.866)	(0.574)
28	1.1	25	17
32	1.25	22	15
36	1.4	19	13
38	1.5	18	12
43	1.7	16	11
44	1.75	16	11
48	1.875	15	10
51	2	14	9
57	2.25	12	8
60	2.36	12	8
64	2.5	11	7
75	2.95	9	6
76	3	9	6
89	3.5	8	5
102	4	7	5
		Max. meshes (more = too flat)	Min. meshes (less = too upright)

See Appendix for mesh counts for other grid sizes.

Single flap nets

Escape openings

There are three recognised openings for a single flap net:

- 1. Rectangle configuration

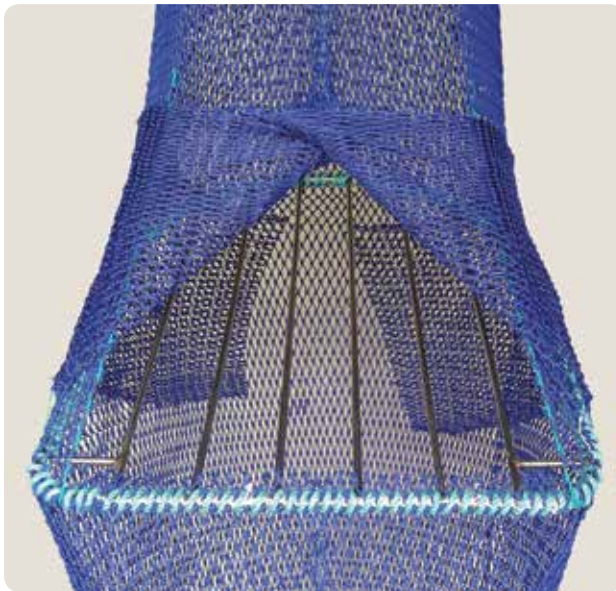


Figure 6a. Single flap, rectangular escape hole opening

Note: Single flap rectangular opening dimensions differ from the double flap rectangular opening dimensions.

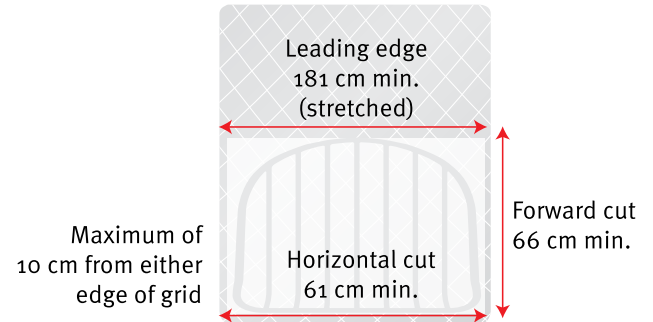


Figure 6b. Minimum requirements for a single flap, rectangular escape hole opening

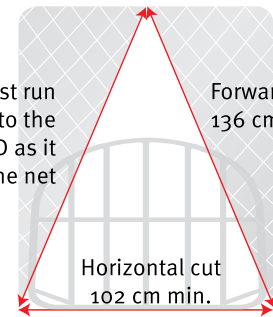
2. Triangle configuration

- Single and double flap triangle escape opening configurations are identical.



Figure 7a. Single flap, triangle escape hole opening. The TED is attached to the circumference of the net with heavy twine

Deflector bars must run from the top to the bottom of the TED as it is positioned in the net



Forward cut
136 cm min.

Horizontal cut
102 cm min.

Figure 7b. Minimum requirements for a single flap, triangle escape hole opening



3. Combination configuration

- A horizontal cut immediately forward of the grid that is not narrower than the grid—except for 10 cm at either side of the grid—and a minimum of 61 cm, with two combination forward cuts perpendicular from the grid of not less than 51 cm along all points and not less than 50 cm made as an all bar taper—and a resulting leading edge cut of not less than 40 cm stretched—and a stretched measurement of not less than 181 cm when measured between the forward ends of the all point cut at least 51 cm forward of the grid.

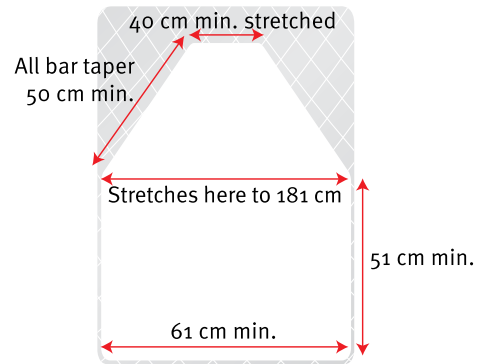


Figure 8. Minimum requirements for a single flap, combination escape hole opening