



# Fairwrap Cable Fairing

A SIMPLE, DURABLE, LOW COST EFFECTIVE WAY TO PREVENT STRUMMING  
DRAG AND FATIGUE IN CABLES EXPOSED TO HIGH CURRENT FLOW.

SDI "Fairwrap" is intended to minimize or eliminate cable fatigue and increased drag due to cable strumming in high current flows. Fairwrap is easy to install and self locks to your cable. For harsh environments additional security is provided by additional rubber binders. The result is a uniform distribution of fairing fingers around the cable. Fairwrap is not required to rotate to align itself to the current as in zip on or hook and loop attached fairing, nor can it be washed up the cable or be stripped off in high currents. Fairwrap is UV protected and available in several weights of fiber reinforced material to prevent ripping and tearing associated with cable handling winches. Fairwrap cable fairing is available for cable sizes 1/4" to 3" in diameter.



## Back Ground

Cables are subject to strumming when the water current flows past the cable. Typically this is evident as a rapid sideways motion of the cable in the 2 Hz to 20 Hz frequency range. This strumming causes cable fatigue and increased drag in both towed cables and fixed cables that are subject to current flow.

### Features:

- Available for cable sizes 1/4 to 3"
- Will not wash up or off cable in high currents
- Does not need to rotate
- No zippers, hook and loop, or swivels
- Durable UV protected material
- Fiber reinforced to prevent ripping

The cable strumming is caused when the perpendicular component of water flow increases to the point that the flow separates as it goes around the cable. The resulting vortex that sheds has a rotation that causes a reduction in pressure on one side of the cable. This causes the cable to move in that direction and results in the next vortex that sheds to rotate in the opposite direction. The resulting alternate shedding of vortices causes a rapid side to side oscillation in the cable.

This oscillation causes fatigue in the cable which results in premature failure and increases the effective projected area of the cable resulting in significantly increased drag. For towed systems this reduces the operating depth or the maximum towing speed of the towed body and increases the cable length requirement. For moored systems the operating life of the cable can be significantly reduced and the drag and resultant depression with current flow is increased. In extreme cases, this strumming induced increased drag can cause a surface buoy to submerge.

SDI "FAIRWRAP" cable fairing is intended to minimize or eliminate this strumming by preventing this alternating vortex shedding. Fairwrap is installed by wrapping successive layers of fairing material around the cable and overlapping previous layers to lock the fairing to the cable. The fairing is further secured with rubber binders to lock it in position on the cable. The rubber binder material is self vulcanizing and as such is subject to degradation in UV light. A UV vinyl tape covering is added to the rubber binder for applications where the cable may spend time on a reel. The result is a uniform distribution of fairing fingers around the cable. Fairwrap is not required to rotate to align itself to the current, nor can it be washed up the cable by the current or stripped off in high currents as with zip on or hook and loop attached fairings. Fairwrap cable fairing is available for cable sizes from 1/4" to 3" in diameter.

Towing tests of SDI's Fairwrap cable fairing shows drag reductions at all towing speeds subject to strumming. Strumming is a function of tow speed, cable diameter and cable tension and in all test cases the cable strumming was effectively eliminated. Cable accelerations were reduced 98% to 99.5% over an unfaired cable tested under the same conditions. The total drag is reduced approximately 0 to 10% over a non-strumming cable and up to 40% over a strumming cable.