To Find : Ratios of composition of ***Fiberglass : Epoxy Resin***

The Idea : In general when people manufacture DIY surfer fins they use a combination of layering sheets of fiberglass and adding epoxy resin to it part by part alternately. At E4E we use the mould injection and pot the fin itself which contains electronics and thus it would change our layering technique slightly.

Solution : After conversing with some regular fin makers at Mitch's Surf Shop in La Jolla and skimming through various discussions on Swaylocks , etc , the general trend in the industry is to use ratios of 1:1 or 3:2 for resin to fiberglass by weight. Mostcommonly, people use a 3:2 ratio with a range of 25-30 layers of E- Fiberglass sheets. The idea is to use slightly more resin than fiberglass to improve the flexing ability of the fin without causing the fin to develop cracks while flexing.

Opinion: Given that we're adding electronics inside the fin , our fins flexibility is already going to be restricted to a certain degree. By taking 6 oz fiberglass sheets and making 70-80% of the layers on a fin without any electronics , we could use a slightly varied ratio of 1.25:1 to make sure that the fin is slightly stiffer and the electronics are better protected. I also feel that based on my conversation with a handful of surfers in La Jolla that the waves here permit moderate speed and having a slightly stiffer fin could help them with higher speeds and maybe slightly preferred to those that flex more.

Notes: There is a slight variation in the size of the fiberglass used. Longboards use 6 oz while generally 4 oz is also used. The Fiberglass recommended is E fiberglass sheets since s-2 is slightly harder but can also be used depending on the need for flexibility.