



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

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| Name(s) Johan G. Thuen | Project Number J2120 |
| Project Title Are Pro Teck Surfboard Fins Safer? | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my project was to determine if the flexible edge design of a Pro Teck surfboard fin will reduce fin cuts.</p> <p>Methods/Materials I dropped ballistic gel molds onto six test fins from two heights to simulate the difference in impact between a larger versus smaller wave. Each height was tested three times. Fin cuts from the rake and tips were measured and recorded.</p> <p>Results Rake cuts at the 80 cm drop height were barely a nick on the Pro Teck fins as compared to the others which had cuts over 2 cm deep. When the drop height increased to 150 cm the Pro Teck still only had minor rake cuts while the other fins were cutting up to 3 cm. While fin tip cuts occurred on all fins tested they were less severe on the Pro Teck fins. At an 80 cm drop they were less than 3 cm as compared to the others that were as deep as 5 cm. When tested at a 150 cm drop Pro Teck cuts were approximately 3 cm while the other fins were as deep as 6 cm.</p> <p>Conclusions/Discussion The two Pro Teck fins did get shallower cuts than the other fins. While they still did cut, each of the Pro Teck fins cut less than the other fins with one exception. The FCS M5 had a smaller tip cut from a drop height of 80 cm than Pro Teck Power Flex fin. As I predicted, the fin that cut the deepest was the FCS Performer. I predicted that this one would cut the deepest since the rake felt sharper than all the other fins and it is a very stiff fin. The stiffness combined with the sharpness of the fin made for a more dangerous fin when it comes to cuts. Pro Teck fins do reduce surfer injury for fin cuts.</p> | |
| Summary Statement Using ballistic gel and a testing apparatus I designed, I concluded that the Pro Teck design for surfboard fins can reduce fin cuts. | |
| Help Received I designed the testing apparatus, but had my Father supervise the building of it. I contacted Pro Teck and other surfboard fin distributors to request fins to be donated for testing. | |