Spike Saver- A New Technology That Can Protect Track and Field Athletes From Inefficiency

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Track and Field athletes often have to walk on their spikes to get from place to place, this makes the spikes dull and less efficient. This project is meant to solve this problem, by creating a product to go over spikes and protect them. Each design undergoes six different tests that are related to the requirements and goals. The first test is the average time it takes to put on, which simulates the ease of use. The second test measured weight and calculated cost. Then the supporting weight test the goal is to support at least 160 lbs, the average track athlete's weight, by adding weight 10 lbs at a time to the product until failure. The dullness test measures the spikes before and after the test to see if there was a change in length by using a caliper. The steps test counts how many steps the design supports. The goal is to support at least 1000 steps which is around the steps an athlete may take in a season. The first design had a honeycomb silicon base, which made it flimsy and unable to meet the desired requirements. The next design was 3-D printed using PLA plastic and rubber bands for stability and support. This design met all but one requirement, the time requirement, due to the spike having to find its way back to the hole it created. To meet this requirement the addition of honeycomb silicon on the top of the 3-D printed base for more free movement for spikes. This design met all the requirements and performed the best out of the designs because it supported the most weight and steps.

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