# CHARM: P-25 **REUSING STYROFOAM** FOR NEW SHOE TREADS

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How Might We reduce the amount of Styrofoam in landfills by reusing the material to restore treads for worn-out shoes?

### SOLUTION:

**3D printing** shoe tread attachments with a **styrofoam-filled center** 

### **PROBLEM:**

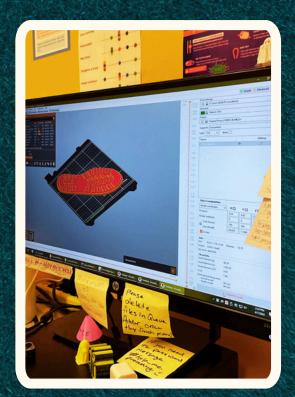


30% **OF LANDFILLS IS MADE UP OF** STYROFOAM ~1 million years FOR STYROFOAM TO DEGRADE

UNIQUE VALUE PROPOSITION:



Reusing Styrofoam waste by creating shoe tread attachments that will provide a more sustainable and cheaper way to prolong the life of shoes.







### FINAL EXPERIMENT:

Using CAD, we created a tread pattern, printed a top and bottom piece in TPU, and sandwiched styrofoam pieces in between using flexible plastic glue.

It takes 6 months (300 - 500 miles) for runners to replace their shoes

### FUTURE PLAN:

We will experiment with different materials, test the durability of our product using the abrasion tester, and expand our tread design CADs.



## **EVERY SHOE TREAD MADE = 2 STYROFOAM CUPS RECYCLED.**