



Colorado Science and Engineering Fair

2025 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Under Pressure

Finalist's Name: Maci Widger

School and City: Sargent Middle School Monte Vista

Sponsor's Name: Terri Paulson

Category: Engineering

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

Abstract- This engineering project aimed to determine if concrete could be made out of Hemp, Straw, or Potato Rock to make it stronger. There is a surplus of hemp plants and fibers from hemp. The hemp fibers are incredibly strong and can be used for a variety of purposes.

Insulation and rope are two of the majorly used products that are made out of hemp. Straw is used in clay to make it a paste and it helps the paste stick to wood, and fiberglass to make buildings. Straw also helps with insulation and keeping moisture out.

Potato rocks are usually just put in piles and left so I wanted to see if there was a way I could reduce the waste of not only Potato Rocks but also Hemp, and Straw.

The way I measured out my percentages of binders was by volume I took a metal drum and weighed the concrete then I got my answer and I added 10 percent of Hemp, Straw, and Poatao rock to a basic concrete mixture. Then I poured my concrete into the cylinders and let them sit for one day. Then I took them to Mountain Engineering and they cured the cylinders in water 25 days later I went to Mountain Engineering and got the cylinders crushed. Then I got my results and averaged them out to get my final results.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**