

Senior Design Project
Oscillating Abrasion Tester

Clients:

Dr. Dorina Mihut

Dr. Stephen Hill

Many materials are working outdoor and are exposed to harsh environmental conditions. Their behavior could be explored by creating a tester to simulate the outdoor conditions and possibly creating controlled, faster degradation conditions.

The Abrasion Tester will be used to assess the behavior of different materials under abrasion conditions and will use sand as the abrasive media. The specimens will be fixed on a holder in a recipient and sand particles of different sizes will be used to assess the abrasive behavior.

The recipient containing the sample and the sand will be able to make a reciprocal continuous movement with different speeds. The sample to be tested and abrasive media will be continuously shifted back and forth such that the sand will abrade the surface of the sample. The results of the abrasion process will be estimated using the existing electronic scale.

The abrasion tester will be able to move for a specific/ set time or to perform a set number of cycles.

Budget \$300

Disciplines: Mechanical, Industrial, Electrical, Computer