Space Saving Device

The final design was put through a series of tests created by the design team to analyze if the engineering specifications were being met.

Test #1: Non-invasiveness/flexibility
- Adhesive clamps applied to painted drywall to test the surface that the device would be applied to.
- Test to see if damage is done to the wall

Test #2: Incrementally increasing load
- In conjunction with test #1, add 1 lb. bags of sand at 1 minute intervals until the device fails
- Test to see the maximum load the device can withstand

Test #3: Constant loading
- Load the device with a 10 lb. bag of sand for 3 days
- Test to see if device can withstand a constant 10 lb. force over a long duration

The results of the tests proved our device would meet the specifications set by the sponsor and the design team.

Test #1: The 3M adhesive strips are made to not damage walls. This was proven as no walls had chipped paint or holes put in them.

Test #2: The device failed after it was loaded with 18 lbs. of sand. This proved our device could withstand the maximum weight it is required to hold with a factor of safety of 1.8.

Test #3: After being continuously loaded with 10 lbs. for 3 days, the device remained on the wall with no signs of fatigue. This proved that our device will hold the required loading over an extended period of time.

Looking forward our sponsor will…
- Seek to replace the PVC parts with recycled plastic parts
- Begin to ramp-up production and provide her product to low-income households and the physically challenged