

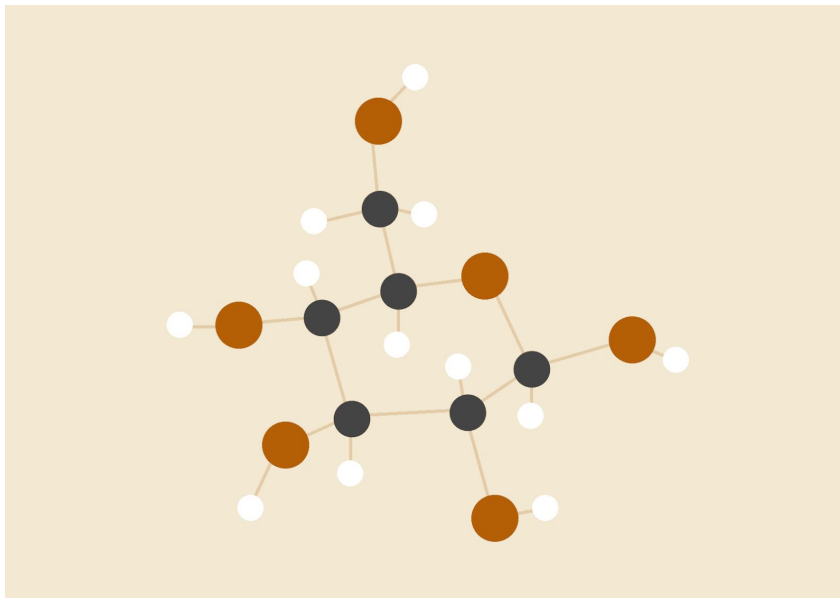
DES211: Creativity and Concept in Design

End-Term Report

Product: Modified Wiper for bathroom floors

Project guide -

Dr. Vikash Kumar



Submitted by-

Jagriti Pramod Sachan

1710110154

Arohi Singhal

1710110076

Anirudh Agarwal

1710110049

ACKNOWLEDGEMENT

We want to thank our project guide Dr. Vikash Kumar for his direction and suggestions all through the task and the course. We have profited a ton from the whole procedure beginning from distinguishing the real issue to finalising and executing the final project . Our undertaking guide has given his significant contributions through the course and has urged us to think past the ordinary and out of the box. Regular meetings with our project guide helped us in learning the whole procedure of making a product from scratch. We thank him for taking us under his wings and guiding us throughout the project.

We likewise want to express gratitude toward Prof. Amit Ray for his insightful and interesting classes which have helped us perceive the estimation of plan in day by day life and get a hands-on involvement of the equivalent.

Our gratitude extends to the lab assistants who helped right from the start and they went out of their way and got us materials and stayed back with us even at odd hours to help us in completion of our project. They constantly helped and supported us which helped us in the successful completion of our project. We would like thank the University for providing us with the materials and support.

OBJECTIVE

To make an item that will facilitate the cleaning of bathroom floor in a way by wiping the water completely and using a high absorbent microfiber cloth attached (detachable) to it for drying and hence leaving the bathroom dry and ready to use for the next person.

PROBLEM STATEMENT

Wipers are used everyday to clean and drain out water after use of bathrooms. But they leave few streaks of water which thus leaves the floor damp and that takes some time to dry off. In the meantime, some other person uses the washroom and the wet clean floor becomes dirty, Existing wipers have a flat and straight rubber blade, so the water escapes from the sides, also some water is left behind.

Also the products that exist in the market doesn't really solve the problem completely. There are different products available for a single purpose but there isn't any product in the market which is a do all and solves all the problems.

RESEARCH, METHODOLOGY AND FINDINGS

The whole process of coming up with this idea and executing it had a lot of stages and parts to it. The methodology that we have used in order to understand the problem better is as follows :-

References:-

First in order to get an idea about the existing products we looked up on the internet and in the supermarket. We were aiming to find out the flaws, costing, pros, materials used and customer reviews about the product so as to study more and in order to create a valuable and multipurpose product. Following are the links to the sites:-

1. <https://www.seniority.in/spray-mop-with-removable-washable-pad-spray-mop-pdp?device=m>
2. https://www.amazon.com/dp/B07BPKC5F6/ref=cm_sw_r_wa_awdb_t1_DRANCbM8SWZKS
3. https://www.amazon.com/dp/B07BPKC5F6/ref=cm_sw_r_wa_awdb_t1_DRANCbM8SWZ

[KS](#)

4. https://www.amazon.com/FlexiSnake-Drain-Millipede-Hair-Cleaning/dp/B00871R9Z8/ref=zg_bs_680332011_2/134-5543146-9221060?_encoding=UTF8&psc=1&refRID=3YFVD160B2PNF66EY971

Observation and Interviews:-

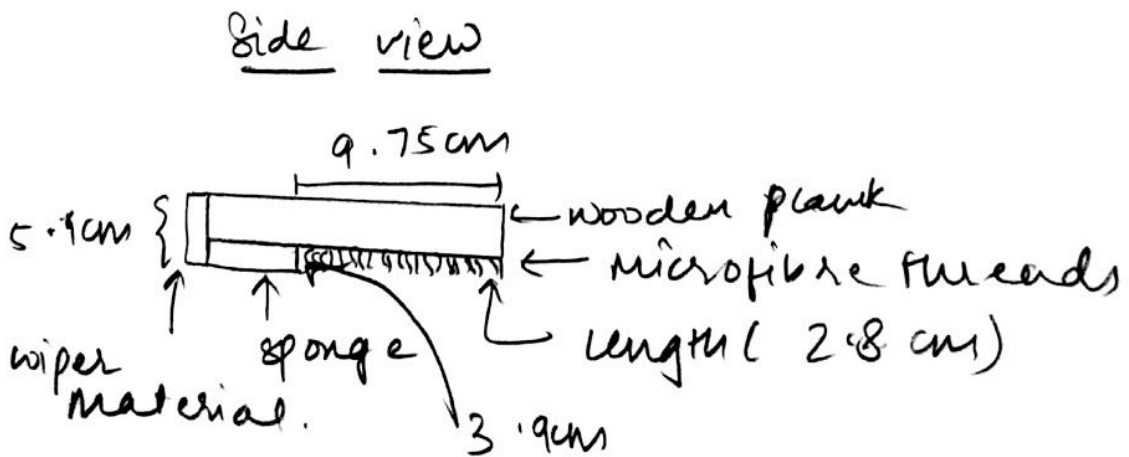
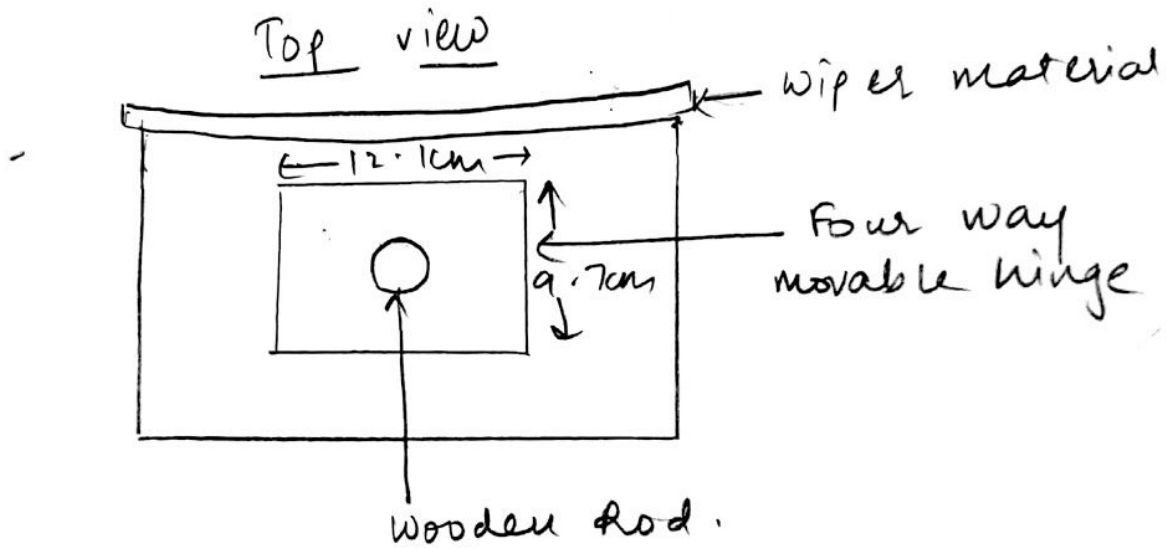
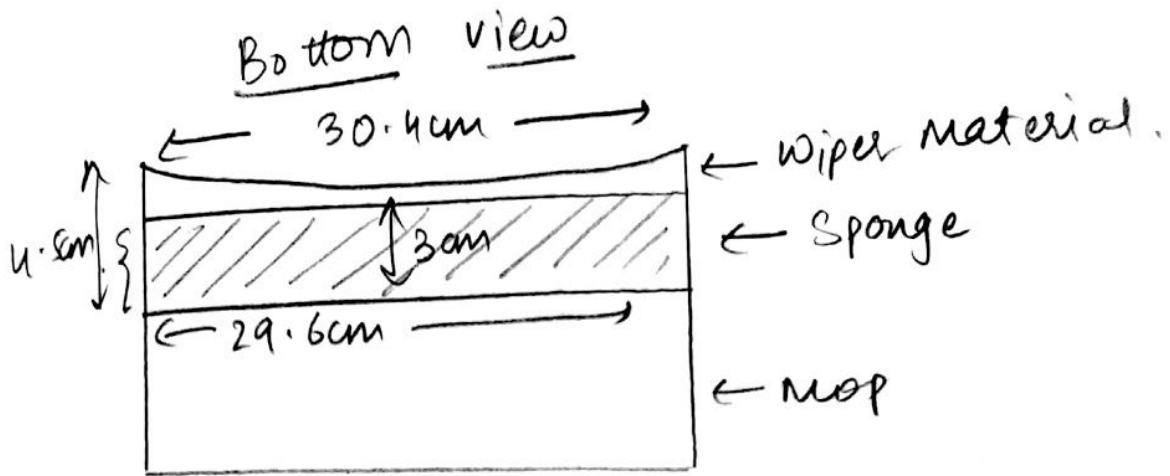
We became observant about our surroundings whenever there was someone cleaning the floor or wiping it so as to analyse the situation more carefully.

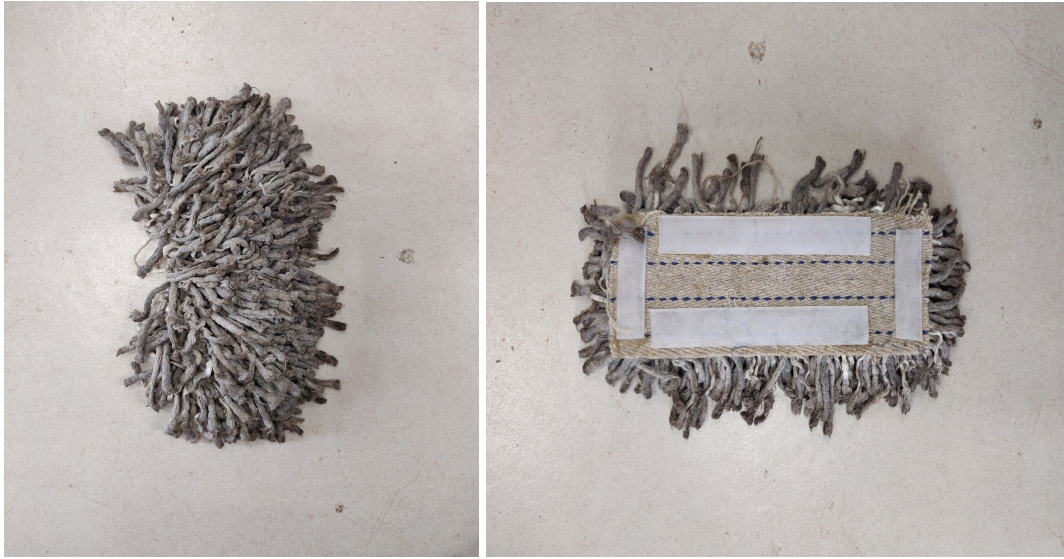
We also spoke to a couple of cleaners of our University who work in the academic blocks during day time about the products such as wipers and dust controller that they used.

We went to the inventory and store room of all the cleaning materials of our University in A block, 2nd Floor and asked around about the most absorbent cloth for the base of the microfibre and also about the different types of hinges to figure out the suitable one.

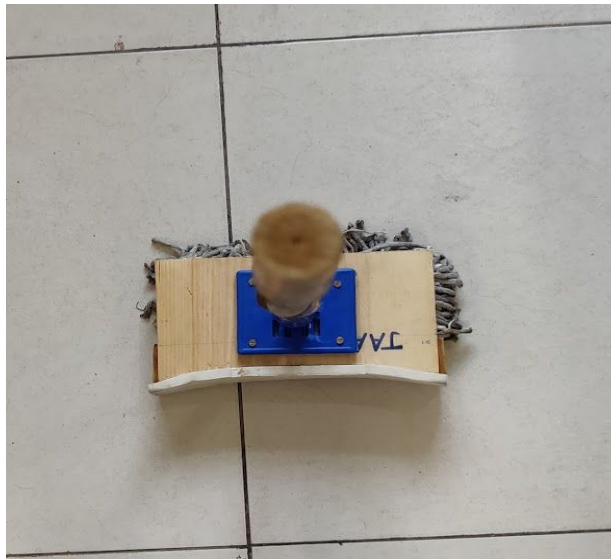
Component and its Purpose:-

1. The wiper material is curved and attached to the front so as to collect maximum water and it also extends from the wooden plank so that the water doesn't escape from the sides. The curve isn't of much radius because the wiper has to be used for bathroom corners.
2. We selected sponge as the second material as it is highly absorbent. Sponge is attached right after the wiper material and is less in width because sponge usually becomes damp and is difficult to squeeze out the water from it.
3. The high absorbing microfiber is stitched on a really thick absorbing material used in dust controllers third in row because stitching gives it a strong support. The base has velcros to it so as it can be detached from the main wooden plank and can be kept out in the open for drying when it gets really wet.
4. There is a four way moveable hinge attached on top of the board so that it gives freedom to the user to move it in all directions and it becomes easy for the user to reach out and wipe from all corners of the bathroom.





Microfiber cloth attachment



Top View

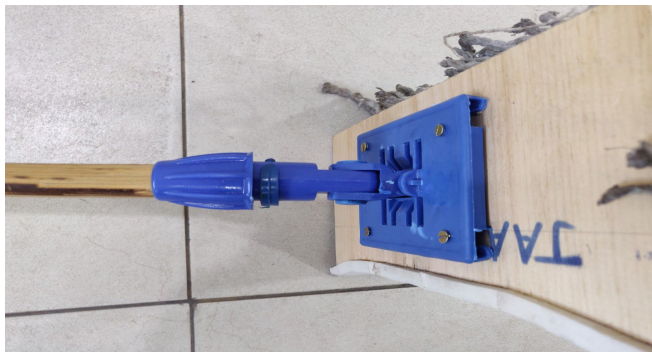


Bottom view with & without the Microfiber attachment





Side View



Hinge



Rubber Blade



Back view

MATERIALS

1. Sponge
2. Microfiber cloth
3. Velcro
4. Wooden rod
5. 4 way movable hinge
6. Wiper Rubber blade
7. Soft Wood plank

PROCEDURE:-

1. A soft wooden plank was cut of chosen dimensions and a curve od small radius was cut of from the front face of it
2. The wiper material was first glued and then nailed (plastic cap) in the front portion of the base where the curve was given
3. A sponge of small width and thickness was measured and cut out using a hot wire and then attached right after the wiper material.
4. The high absorbent microfibre was cut out from a different wiper and then was glued for the time being on a tough, highly absorbent cloth in small gaps so as to accommodate maximum fibres and make it really dense so that its absorbing capacity is maximum.
5. We fixed a four way moving hinge on top of the board and attached a rod to it with a locking system so that it can be removed and gives access in all four directions.
6. The microfiber part of the product is of the maximum width and length and has velcros attached to it because that makes it easier for us to remove it and dry it.

BUDGETING

Most of the things were available in the lab and if not, we collected few of it from the store room and the inventory room.

OPPORTUNITIES

This modified wiper can be used for bathroom, cleaning marble tiles and balconies. It can't be used for floors with a lot of dust on it because as of now, the existing model has sponge which gets dirty easily and the pores get clogged making it inefficient for water absorption.

CONCLUSION

From identification of the problem being that it is inefficient to use the wipers after the bathroom floor gets wet to finding a solution to it, this project aimed at solving a problem we face every day at hostel and at home. We have kept in mind the ease of use, the aesthetics and other factors, to come up with a product that not just solves the problem but also provides a solution to the faults in existing products. Our product makes it easy to wipe and dry off the floor quickly making the bathroom ready and quick and span for the next person to use. A lot of improvements can be made to the design, the functioning and the material of the product to make it more suitable to the household context.

SCOPE OF IMPROVEMENT

1. The wooden plank can be replaced by a plastic material as wood rots and becomes damp easily after contact with water.
2. The length and the width of the wooden plank can be increased and decreased.
3. Instead of glueing the micro fiber on the cloth, it should be stitched. Originally we had planned to stitch it but then due to certain circumstances we couldn't. Stitching it to the main cloth gives it support and won't come out once it gets wet because the adhesive nature of glue weakens after coming in contact with water.
4. The sponge can either be replaced by some other efficient high absorbing material or should be avoided because dust sticks to sponge and it is difficult to squeeze out the water from it.