



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

# IJIRSET

International Journal of Innovative Research in  
**SCIENCE | ENGINEERING | TECHNOLOGY**



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 11, Issue 5, May 2022

**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA

Impact Factor: 8.118

# Pavement Blocks from Surgical Face Mask

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**ABSTRACT:** Since last two years we are fighting with covid 19 pandemic. use of face mask became key equipment to protect people against the covid 19 pandemic. To overcome this problem we are going to use this surgical face mask for making a pavement blocks.

## I. INTRODUCTION

The history of concrete paving blocks dates back to 19th century when paving stones were used in European countries for construction of roads serving as footpaths and tracks for steel - wheeled vehicles. Interlocking Concrete Block Pavement (ICBP) is an environment-friendly and labour intensive paving technology which is widely applied in many countries to solve special-purpose paving problems. Paver block paving is versatile, aesthetically good, functional, and cost effective and requires little or no maintenance if correctly manufactured and laid. Natural resources are depleting world wide at the same time biomedical waste generated during the covid 19 pandemic is increasing substantially. The innovative materials and recycling of waste materials in order to compensate the lack of natural resources and to find alternative ways conserving the environment. Biomedical waste used in this work was brought from the surrounding areas. According to WHO has 89 million masks are needed per month. But in March 2021, an estimated 129 billion face masks were used per month and after using this masks people threw this mask in surrounding. As the result it affects human beings, animals, birds life and also aquatic life. Hence it necessary to dispose this discarded face mask properly as per the regulation. By using this waste in concrete paver blocks provides potential environmental as well as economic benefits.

## II. PROBLEM STATEMENT

Globally every month we end up rising 129 billion disposal face mask. The most commonly used single use masks are made up of plastic and thin strip of metal. And people really don't know what has to be done with them. Sometimes mask are thrown into the garbage, sometimes they are thrown water bodies and sometimes they go into incinerators. And they pose threat to ; 1. Sanitation workers 2. General public 3. Environment 4. Marine , Animals, Birds life. That's why, this masks need to be reused.

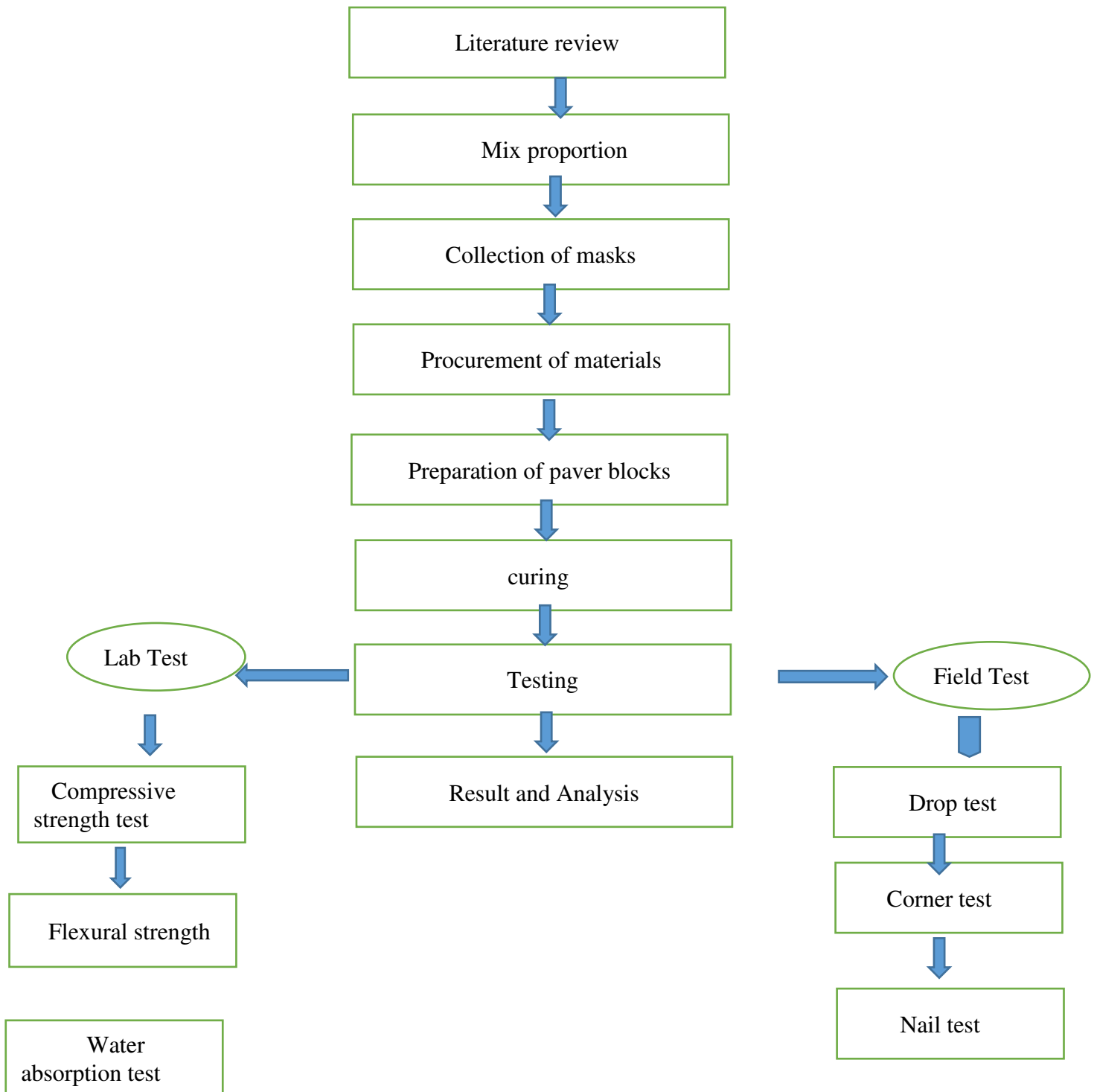
performed to label each object separately. Finally, the set of selection criteria is applied to filter out non text regions. After text detection, text inpainting is accomplished by using exemplar based Inpainting algorithm.

## III. AIM

AIM these patches. It starts filling the target region from the highest priority patch by finding the best match patch. This procedure is repeated until entire target region is in painted.

The algorithm automatically generates mask image without user interaction that contains only text regions to be inpainted.

#### IV. METHODOLOGY



The various steps used in preparation of pavement blocks are as follows:

- The surgical masks were collected from various collection points and were sealed for 72 hours. The masks are taken out and were left for about 3 hours in a disinfectant solution.

- The masks are shredded into small pieces and it is already mixed with premix.
- The pavement blocks are made from cement, sand and discarded surgical face mask. Proportion of cement and sand is 1:2 and 16 % of face mask.
- The mix obtained is added into standard solid block moulds and vibro-compacted.
- The above obtained solid concrete blocks are sun dried and cured.
- After curing the samples for 7 days, 14 days and 28 days, tests are to be performed on them to determine the maximum compressive strength, water absorption capacity and shape of the solid blocks according to IS 2185(Part 1):2005.
- The results are then compared with the results of standard solid concrete blocks.

## **V. ACKNOWLEDGMENT**

I express my deepest gratitude to my project guide Prof. Shreedhar Patil, whose encouragement, guidance and support me to develop an understanding of the subject.

Dr. Nagesh Shelke Head of the Civil Engineering Department & Vice Principal of Dr. D.Y.Patil School of Engineering & Technology for providing their invaluable advice and for providing me with an environment to my project successfully.

Finally, I take this opportunity to extend my deep appreciation to my family and friends, for all that they meant to me during the crucial times of my project.

## **VI. CONCLUSION**

- The cost of paver block is reduced when compared with standard paver block ;it costs only 9-10 rs.
- It can be used for light traffic.

## **REFERENCES**

1. Bhimaji Dashrath Kanawade,"Strength and Durability of Concrete Block", MANTECH PUBLICATIONS 2017, Advance in civil & Structural Engineering Volume 2 Issue 3.
2. B. Shanmugavalli K . Gowtham ,P. Jeba Nalwin B. Eswara Moorthy,"Reuse of Plastic Waste in Paver Blocks",International Journal of Engineering Research & Technology (IJERT).
3. World Health Organization Archived: WHO Timeline—COVID-19. Available online: <https://www.who.int/news/item/27-04-2020-who-timeline---covid-19> (accessed on 4 February).
4. Ganesh N. Patil, Marwa al Yahmedi2, Santosh M. Walke2` L. N. Rao" Manufacturing of plastic sand bricks from polypropylene and polyethylene waste plastic" International Journal of Advanced Science and Technology Vol. 29, No. 08, (2020), pp. 2062- 2068.
5. Nivetha, C. Rubiya, M. Shobana, S. Vijayanathi, G. (2016). Production of Plastic Paver Block from the Solid Waste. ARPN Journal of Engineering and Applied Science. 11(2).
6. Kashiyani, Bhavin K., J. A. Y. E. S. H. K. U. M. A. R. Pitroda, and BHAVNABEN K. Shah. "Innovative addition of polypropylene fibre in interlocking paver block to improve compressive strength." International Journal of Civil, Structural, Environmental and Infrastructure Engineering Research and Development 3.2 (2013): 17-26.





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SJIF Scientific Journal Impact Factor  
Impact Factor: 8.118



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STANDARD  
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