Please Provide your review remarks in the link - https://forms.gle/E7hE7aVTFBoy4ydw7

Lokmanya Tilak Jankalyan Shikshan Sanstha's
PRIYADARSHINI COLLEGE OF ENGINEERING
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DEPARTMENT OF CIVIL ENGINEERING

Session 2023-24

Product Development Details

Product Developed: Bricks from plastic waste

Type of Developed Product: utilization of plastic waste for the Preparation of ecological brick

Guide: Ms. Vaishali .P.Kesalkar

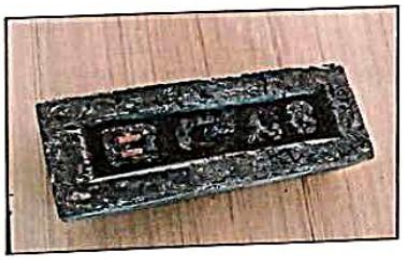
Student Contributors:

1) Aashita.H. Maheskar 2) Hitesh.T. Pakhmode 3) Nikhil.S. Patil
4) Sameer.M. Pendor 5) Ajit.B. Bagade

Product Overview:

Plastic waste has become a major environmental concern due to its non-biodegradable nature and improper disposal. This study explores the utilization of plastic waste in the preparation of ecological bricks as an alternative to conventional clay bricks. Waste plastic was melted and mixed with sand in varying proportions to form bricks, which were then tested for compressive strength, water absorption, hardness, and soundness. The results showed that plastic bricks are lightweight, durable, water-resistant, and exhibit higher compressive strength compared to normal clay bricks. They also reduce environmental pollution and offer a cost-effective solution for sustainable construction.

Product Pictures:



Applications & societal benefits:

□ To reduce the plastic waste from the society and use it for a beneficial purpose

POs & PSOs Mapped: PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11,PO12, PSO1, PSO2

Project Guide.

Head of Department
Civil Engineering
H.O.D. Civil Engineering
Priyadarshini College of Engineering
Nagpur

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DEPARTMENT OF CIVIL ENGINEERING

Session 2023-24

Product Development Details

Product Developed: Creating Sustainable Brick From M-Sand, Jute Fibre and Cement

Type of Developed Product: manufacturing of low cost brick

Guide: DR. R.M. Dhoble

Student Contributors:

1) Ritik Bangde (204) 2)Akanksha Choudhari(129)
3)Prerna Parkhi (140) 4)Vaibhav Barapatre (250)

Product Overview:. As per IS Code 1077:1992, 30% of jute fibre added in our brick gives standard compressive strength of IS Code 1st class brick. First class bricks have a minimum compressive strength of 105 kg/cm2.As per the result our first-class brick has minimum strength of 117.36 kg/cm2.As per IS 1077:1992- clause no 7.2, the water absorption test should vary between 12.5 to 15 % and our brick with 30% jute fibre absorbs 13.25 % that means it is as per standard of water absorption of IS code of 1st class brick. Creating bricks with M-sand, jute fibre, and cement is a good idea for the environment and building .it uses fewer natural resources ,cost effective and help reduce pollution. Cost of our brick is higher than clay brick but it has good compressive strength and environmental friendly.

Product Pictures:

Preparation
(Preparation of raw material)

Mixing and Moulding
(Mixing of raw Material)

Curing & Testing

Applications & societal benefits:

For defluoridation from groundwater at urban and specially village level

POs & PSOs Mapped: PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11,PO12, PSO1, PSO2

Head of Department
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