

## Experimental Studies on Flexural Behaviour on Beam Using Lathe Waste in SIFCON

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**Abstract :** Slurry infiltrated fibrous concrete (SIFCON) is one of the recently developed construction material that can be considered as a special type of high performance fibre reinforced concrete (HPFRC) with higher fibre content. Fibre reinforced concrete is essentially a composite material in which fibres out of waste having higher modulus of elasticity. SIFCON is a special type of high fibrous concrete and it is having a high cementitious content and sand. The matrix usually consists of cement-sand slurry or fluent mortar. The construction industry is in need of finding cost effective materials for increasing the strength of concrete structures hence an endeavour has been made in the present investigations to study the influence of addition of waste material like Lathe waste from workshop at different dosages to the total weight of concrete. The waste of steel scrap material which is available from the lathe is used as a steel fibre for innovative construction industry. To get sustainable and environmental benefits, lathe scrap as recycled fibres with concrete are likely to be used. An experimental program was carried out to investigate the flexural behavior of Slurry infiltrated fibrous concrete (SIFCON) in which the fibres having an aspect ratio of 100 is used. The investigations were done using M25 mix and tests were carried out as per recommended procedures by appropriate codes. SIFCON specimens with 8%, 10% and 12% volume of fraction fibres are used in this study. Test results were presented in comparison of SIFCON with and without conventional steel reinforcement. The load carrying capacity of SIFCON specimen is higher than conventional concrete and it also reduced crack width. In the SIFCON specimen less number of cracks as compared with conventional concrete.

**Keywords :** SIFCON, lathe waste, RCC, fibre volume, flexural behaviour

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