

**EFFECT OF STEEL FIBRES INHIBITING FLEXURAL CRACK  
IN BEAM**

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## **DECLARATION BY THE CANDIDATE**

**I Mohd Noor Azman Bin Yaacob** UiTM No: **2009688394** confirm that the work in this report is my own work and the appropriate credit has been given where references have been made to the work of other researches



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## ABSTRACT

Reinforced concrete beam is now universally recognized as a vital component of structure members. Since the properties of concrete is good in compression but weak in tension thus experiences the cracking problem. So in order to inhibiting the flexural crack in beam, the addition of steel fibres in reinforced concrete beam has been proposed. This research conducted focus on simply supported beam to determine the effect of steel fibres inhibiting flexural crack in beam. The hooked-end steel fibres with the dimensions of 0.75 mm in diameter, 60 mm in length was used in this study. The 100 mm x 100 mm x 100 mm concrete cube was casted to determine the compressive strength in accordance to BS 1100-4 1997. It was measured for 7 days, 14 days and 28 days. The concrete cube samples included cube of plain concrete as control sample and cube of concrete contain of 25 kg/m<sup>3</sup> amount dosage of steel fibres. The grade of concrete was used in this study is 30 N/mm<sup>2</sup>. Slump test for each concrete batches have measured to determine the texture of the fresh concrete and its uniformity. Four number of simply supported beam with size of beam was designed as 150 mm x 250 mm x 1000 mm were tested to determine flexural strength behaviour, two with 25 kg/m<sup>3</sup> amount of steel fibres and another two without steel fibres. The Flexural Strength Test knows as three point bending test are carried out and data were recorded and analyzed. The results obtained from the tests are show that additional steel fibres in reinforced concrete beam contribute significantly in influence the compressive strength, increase of ultimate load, reduce deflection and thus inhibiting flexural crack in beam.

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