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DEFLECTION BEHAVIOUR  
OF REINFORCED CONCRETE BEAMS

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## SYNOPSIS

In the design of a reinforced concrete beam, deflection is considered to some extent only. The beam is said to be safe as long as the deflection does not exceed the value of span/ effective depth. The deflection is governed by many factors such as, loading, properties of the concrete and the geometry of the beam. So, this project will look upon the behaviour of the beam, when subjected to various type of loading. Observations will be made on the mode of the deflection at interval increase of loading.

In the experiment conducted, four numbers of reinforced concrete beam are loaded with various loads. The beam are designed as singly reinforced, with the same number of bars, diameter and type. The first beam is loaded with a uniformly distributed load throughout the span. The second is loaded with a point load at the centre of the span. Whereas the third is subjected to two symmetrical point loads. The last beam carries a uniformly distributed load along the middle third of the span. All of them have a pin support at one end and a roller at the other end.

During the test, the maximum crack width and the maximum deflection at every increment of load is recorded. The collapse load is also observed and noted down.

The analysis shows that the beam of the case number three and four will have a greater strength.

It is also shown that the crack is seldom occurs at the service load condition. Later, an increased in load will induced cracks and deflection in the beam.

The maximum deflections obtained from the test is not exceeding the value given in CP-110 : Part 1: 1972.

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