LAPORAN PROJEK TAHUN AKHIR

KURSUS DIPLOMA LANJUTAN KEJURUTERAAN AWAM

KAJIAN KEJURUTERAAN,I.T.M.,SHAH ALAM

DEFLECTION   BEHAVIOUR

OF   REINFORCED   CONCRETE   BEAMS

BY

KHAIRUDDIN BIN SARPIN

RAZALI BIN HUSSIN

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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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by the authors in their final year. It is about the
deflection behaviour of reinforced concrete beams under
various loading.

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