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Synopsis of
IS 17161: 2020
Flexural Strength and Toughness Parameters of Fibre Reinforced Concrete – Method of Test

This standard provides a method for evaluating the flexural strength and toughness parameters of fibre reinforced concrete (FRC) through tests under displacement control, in the third-point loading configuration, of (unnotched) moulded specimens. This test method is intended for concretes with fibres that are not longer than 60 mm. The method can also be used for a combination of fibres of same or different materials.

In fibre-reinforced concrete, the appropriate incorporation of fibres provides adequate post-cracking load-carrying capacity due to stress transfer by the fibres across the crack and the moment redistribution occurring after the first crack, though the first cracking strength itself is not generally enhanced. In this context, it is essential to characterize and quantify the parameters that can represent the post-cracking strength or energy dissipation capacity. Such parameters, classified as toughness parameters, need to be obtained experimentally for the FRC intended to be used in the specific applications. In this test, the use of unnotched beam test has been incorporated considering the use of FRC being by and large restricted to slabs-on-grade and other non-structural applications. The need for international coordination between standards prevailing in different countries has also been recognized, and accordingly the standard has been formulated.