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Structural Properties of RC Beam with Progression of Corrosion Induced Delamination Cracking

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Abstract : It is quite important that the properties of structural elements do not change significantly before and after cracking, and if they do, it adversely affects the structure. Corrosion in rebars causes cracking in concrete which can lead to the change in properties of beam. In the present study, two RC beams with same flexural strength but with different reinforcement arrangements are considered and modelling of cracks of RC beams has been done at different degrees of corrosion in the case of delamination using boundary conditions of Three Point Bending Test. Finite Element Analysis (FEA) has been done at different degree of corrosion to observe the variation of different parameters like modal frequency, Elasticity and Flexural strength in case of delamination. Also, the comparison between two different RC arrangements is made to conclude which one of them is more suitable.

Keywords : delamination, elasticity, FEA, flexural strength, modal frequency, RC beam
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