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Comparative Study on ECC and RCC Beam Column Connections for Enhancing Seismic Resistance

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Abstract: Earthquake induced damages in beam column joints resulting in building collapse. The beam column connection failure is due to multiple load cycles may lead to collapse of the whole structure. This can be resisted by using Engineered Cementitious composites (ECC) also known as bendable concrete. This study is to evaluate the feasibility of using ultra ductile ECC as means to enhance the performance of beam column connections.
The existing commercial building of G+4 at a zone of high seismicity were taken. From that building, critical beam column connection are chosen. This specimen will be analysed by changing as ECC. Additionally, changes are arrangement of transverse reinforcements, their amount and the materials within the plastic zone of the connection where analysed using ANSYS software. The performances of a series of ECC beam column connections will be compared to that of a control concrete. The ultimate load and ultimate displacement and strain energy capacity were used as criteria in the comparison.
Keywords : Finite element modelling, behaviour, ECC, beam column joint, ANSY.

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