STRENGTHENING OF PRE-STRESSED STEEL-CONCRETE COMPOSITE BEAMS USING CARBON FIBER TENDONS (PARAMETRIC STUDY)

Ashraf Elshihy, Hesham Fawzy, Hilal Hassan and Ahmed Elbelbisi

Zagazig University, Egypt

Strengthening of structures using external prestressed carbon fiber reinforced polymer systems have proven to be an effective process as system strengthen the structural capacity and decrease cracks and deformability. A finite element three-dimensional model is set up to study the impact of composite beams strengthening using externally prestressed carbon fiber reinforced polymer tendons under flexural behavior studying parameters like prestress level, tendon material and tendon profile elevated from the bottom surface of steel beam flange considered under static loading. Consequences of the parametric study will give reasonable guidelines for the designers. ANSYS computer program has been used to create the non linear analysis. The accuracy of the 3D model is verified with the available experimental data. End from the finite element model and design suggestions are given

Biography

Ahmed Elbelbisi has completed his BSc from Zagazig University. He is Demonstrator at Zagazig University.

ahmed_elbelbesy@yahoo.com