

عنوان مقاله:

THE FINITE ELEMENT ANALYSIS OF RC JOINTS STRENGTHENED WITH EXTERNAL FRP COMPOSITES

محل انتشار:

سومین کنفرانس بین المللی بتن و توسعه (سال: 1388)

تعداد صفحات اصل مقاله: 15

نویسندگان:

M Kazem Sharbatdar - Assistant Professor, Faculty of Civil Engineering, Semnan University, Semnan

Mostafa Fakharifar - M.Sc Student, Faculty of Civil Engineering, Semnan University, Semnan

خلاصه مقاله:

Externally bonded fiber-reinforced-polymer (FRP) sheets have been successfully used for strengthening of damaged or deficient reinforced concrete members. Despite of a lot of research conducted and tests on application of these new sheets during the last decade, further research is still required to consolidate recent developments and expand the scope of application of FRPs for structural applications. Nonlinear finite element analysis combined with laboratory testing constitutes an efficient approach for pursuing this objective. The objective of this paper is exploring and illustrating the contribution of a refined three-dimensional (3D) constitutive FE model for investigating the nonlinear response of concrete joint, reinforced with steel rebars and strengthened with external FRP sheets. The analyses were carried out by using finite element software having different capacities. Different parameters such as application of FRP sheets with different patterns, different loading conditions and different strengthened areas have been considered to show the results. Several results regarding increasing ultimate values in the strengthened model in comparison with the reference specimen, ductility of the strengthened model, and evaluation of ductile against non-ductile joint have been presented in this paper.

کلمات کلیدی:

FE model, nonlinear analysis, RC joint members, FRP sheets, strengthening

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/60573>

