عنوان فارسی مقاله:
تحليل امنیت محدود غیرخطی دال های بتن آرمه تقویت شده با
با استفاده از یک اقلام صفحه ای کامپوزیت لايه بندي شده جديد FRP

عنوان انگلیسي مقاله:
Nonlinear finite element analyses of FRP-strengthened reinforced
concrete slabs using a new layered composite plate element

توجه!
این فایل تنها قسمتی از ترجمه میباشد. برای تهیه مقاله ترجمه شده کامل
با فرمت ورد (قابل ویرایش) همراه با نسخه انگلیسی مقاله، اینجا کلیک کنید.
8. Summary
A simple 4-node 24-DOF rectangular composite layered element is developed for nonlinear FE analysis of FRP-strengthened RC slabs in this paper. The element is a unified element with all layers modelled in one single element. The shear locking problem naturally is avoided by using Timoshenko’s composite beam functions. Numerical examples demonstrated its accuracy and efficiency in predicting the structural behaviour of FRP-strengthened RC slabs. The effects of different types, widths and thicknesses of FRPs on the flexural response of FRP-strengthened RC slabs are also studied using the new element. Based on the parametric studies, the main findings are concluded.

1. Types of FRPs have significant influence on the structural behaviour of FRP-strengthened RC slabs. The CFRP-strengthened RC slab performs best comparing to the GFRP and BFRP-strengthened slabs. The central deflection of the CFRP-strengthened RC slab is the least which is 12.26% and 10.11% less than that of the slab strengthened with GFRP and BFRP. The central deflection of the RC slab strengthened with GFRP and BFRP is close which might be attributed to their similar elastic modulus.