

以平面應力分析求取鋼筋混凝土桿件之勁度矩陣

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摘要

本文以平面應力分析法求取鋼筋混凝土桿件之勁度矩陣，此方法可模擬鋼筋之分布與數量，並可包含離散分布的裂縫。文中以兩種不同流程進行推導，所得結果以三個不同例題加以比較。此法不單可模擬複合材料與裂縫，並可正確反應出軸力與彎矩的交互影響關係。

關鍵詞：平面應力分析、鋼筋混凝土、桿件勁度矩陣、裂縫

Plane Stress Analysis to Determine Frame Stiffness Matrix

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ABSTRACT

The plane stress analysis is used to develop the stiffness matrix of a frame member. The reinforcement and cracks can be simulated in this analysis. Two procedures were used to derive the stiffness matrix. Their results are compared in three examples. The interaction of axial force and moment can be shown correctly in the derived stiffness matrices.

Key words: plane stress analysis, reinforced concrete, stiffness matrix, cracks