

Studi perilaku kunci geser ferro cast ductile akibat beban vertikal dan sudut penempatan tendon prategang = Study of ferro cast ductile shear key subjected to vertical load and angle of prestressing

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Abstrak

ABSTRAK

Sambungan kunci geser merupakan bagian penting pada jembatan pracetak segmental karena rawan terjadinya kegagalan. Penelitian ini bertujuan untuk mengetahui kemampuan kunci geser ferro cast ductile tanpa perekat dengan pemodelan numerik menggunakan program ANSYS dengan menerapkan beberapa variasi parameter. Hasil pemodelan linier menunjukkan kemampuan shearkey meningkat jika eksentrisitas gaya prategang semakin kecil, sudut prategang dan gaya prategang semakin besar, mutu material semakin tinggi, dan semakin banyak jumlah shearkey. Untuk pemodelan nonlinier, tegangan geser dan tegangan utama versus perpindahan memperlihatkan pada beton terkekang kedua tegangan lebih tinggi daripada beton tidak terkekang. Selain itu pada kedua kondisi beton, tegangan geser mengalami osilasi setelah fase linier terlewati.

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ABSTRACT

Shearkey is an important thing of the precast segmental bridge, because this area is weak of failure. The purpose of this study is to determine the ability of ferro cast ductile dry joint-shearkey using ANSYS program with applying several variations. The linear results showed that the ability of shearkey increased if eccentricity of the prestressing gets smaller, angle of prestressing and prestressing force is greater, the quality of material is higher, and number of shearkey is increased. For nonlinear modeling, shear stress and principal stress versus displacement shows that the stresses in confined concrete are greater than unconfined concrete. Beside that, in both concrete condition, the shear stress experienced oscillation after the linear phase exceeded.;;