

# Kajian perilaku sambungan kunci geser baja mutu sedang akibat beban vertikal dan sudut penempatan tendon prategang = Study of medium grade steel shear key subjected to vertical load and angle of prestressing tendons

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Abstrak

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Jembatan segmental dengan sistem beton prategang menjadikan sambungan kunci geser sebagai media penghubung yang penting untuk diperhatikan. Penelitian ini membahas sambungan kunci geser tanpa perekat bermaterial baja mutu sedang serta mensimulasikan berbagai variasi parameter untuk melihat perilaku dari sambungan kunci geser. Pemodelan dilakukan menggunakan software ANSYS dengan dua tipe pemodelan. Hasil penelitian pemodelan tipe 1 menunjukkan beban potensi kegagalan beton dan kunci geser meningkat jika kombinasi mutu beton dan baja mutu sedang, gaya prategang, kemiringan tendon prategang serta jumlah kunci geser semakin besar. Hubungan tegangan utama serta tegangan geser terhadap perpindahan vertikal, pemodelan tipe 2 menunjukkan adanya osilasi pada tegangan geser setelah melewati nilai maksimum dan kemudian meningkat.

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The development of segmental bridge with prestressed concrete systems make shear key joint as connection media that is important to note. This study discussed about dry joint-shear key with the material used was medium-grade steel and applying several parameters to see the behavior of the shear key joint. Modeling implemented using ANSYS software with two type of material model. The results in modeling type 1 showed that potential load of concrete and shear key would be greater if combination of the grade of concrete and medium-grade steel, prestressing force, angle of prestressing tendon, and number of shear key were increased. Principal stress and shear stress compared with vertical displacement relations, in modeling type 2 showed an oscillation in the shear stress after passed the maximum value and then increased.