

Studi Numerik terhadap Perilaku Sambungan Pile-Pile Cap Berbasis Common Practice di Indonesia = Numerical Study of the Behavior of Spun Pile-Pile Cap Connection Based on Common Practice in Indonesia

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Abstrak

Spun pile digunakan secara luas dalam konstruksi bangunan pencakar langit serta jembatan di Indonesia. Namun, spun pile yang digunakan di Indonesia ditemukan memiliki daktilitas dan rasio volumetrik kekangan spiral yang rendah. Selain itu, sambungan dari pile-pile cap biasanya adalah bagian dengan kerusakan terbanyak terutama ketika terjadi gempa bumi.

Analisa numerik untuk studi perilaku dari sambungan spun pile pile cap berbasis common practice di Indonesia dilaksanakan menggunakan software SAP2000. Spesimen spun pile diperoleh dari PT. Wika, permodelan numerical diproses untuk pushover analysis menggunakan beban monotonik untuk melihat perilakunya. Berbagai parameter seperti efek dari jarak kekangan spiral, efek dari diameter spiral, efek dari rasio area tulangan baja, dan efek dari tambahan isian beton dipelajari.

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Spun pile is extensively used for high rise buildings and bridges construction in Indonesia. However, it is found that the spun pile used in Indonesia has lower ductility and volumetric ratio of spiral confinement. In addition, connection of the pile pile cap is usually the part with most damage especially when earthquake event is occurred.

Numerical analysis to study the behavior of spun pile-pile cap connection based on common practice in Indonesia is conducted using SAP2000 software. The spun pile specimens used in the analysis model are obtained from PT. Wika, the models are subjected to pushover analysis using monotonic load in order to observe the behavior. Various parameters such as the effect of confinement spacing, effect of spiral wire diameter, effect of steel reinforcement area ratio, and effect of core fill addition are studied.</i>