

Semirigidity assessment of reinforced concrete beam-column joint designed to withstand seismic force from SNI 1728:2012 and SNI 1728:2002 seismic code in accordance to Indonesian structural concrete code = Kajian semikaku sambungan balok-kolom beton bertulang yang dirancang untuk menahan beban gempa dari peraturan gempa SNI 1728:2012 dan SNI 1728:2002 menurut peraturan beton struktural Indonesia

Christopher Kevinly, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20464949&lokasi=lokal>

Abstrak

ABSTRACT

Two types of reinforced concrete (RC) beam-column joint taken from an office building model designed in accordance to Indonesian Seismic Code SNI 1726:2012 and SNI 1726:2002 along with their corresponding RC code is tested in semi-cyclic loading scheme in order to determine its semirigidity behavior. Along with the loading, dynamic measurement is conducted to determine the natural frequency loss of both samples. The result of the experimental testing is then verified by comparing it to the numerical analysis by using DRAIN2DX fiber model analysis software. From both the testing and the numerical analysis, the joint made by using newer code has larger rotational stiffness compared to the one designed in accordance to the older code. Furthermore, experimental testing showed that the sample designed in accordance to the older code displayed more stiffness loss compared to its newer counterpart. This loss of stiffness is legitimated by the loss of natural frequency of both samples from the dynamic measurement.

ABSTRAK

Dua sampel sambungan balok kolom yang dirancang menurut peraturan SNI 1728:2012 dan SNI 1728:2002 dengan peraturan beton bertulang yang berhubungan dikaji dengan memberika pembebanan semi-siklik pada sampel melalui percobaan eksperimental dan numerik. Seiringan dengan pengujian ekperimental, uji dinamik dilakukan. Sampel yang dirancang berdasarkan peraturan yang baru memiliki kekakuan rotasi yang lebih tinggi dibandingkan dengan yang didesain dengan peraturan lama, baik dalam uji eksperimental maupun numerik, beserta pola retak yang berbeda diantara kedua sampel. Frekuensi natural dari kedua sampel juga berkurang seiring dengan rusaknya sampel.