

# Analisis perilaku bangunan tahan gempa dengan sistem isolasi dasar terhadap beban gempa dengan analisis riwayat waktu: studi kasus Rumah Sakit UI = behaviour analysis of seismic building with isolated base with time history analysis seismic load: case study Universitas Indonesia Hospital

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20403020&lokasi=lokal>

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## Abstrak

[Penelitian ini membahas mengenai analisis perilaku dinamik struktur bangunan tahan gempa dengan perletakan terisolasi dengan cara membandingkannya dengan bangunan dengan perletakan tetap. Bangunan dengan perletakan terisolasi

dimodelkan dengan menggunakan base isolation yang sesuai dengan yang digunakan oleh rumah sakit UI, sementara bangunan dengan perletakan tetap dimodelkan dengan menggunakan perletakan jepit. Beban gempa yang digunakan

adalah beban gempa riwayat waktu northridge, kobe, dan el-centro yang telah diskalakan dengan respon spektrum Depok sesuai dengan SNI 1726:2012 Tata cara perencanaan ketahanan gempa untuk struktur gedung dan non gedung.

Analisa yang digunakan yaitu nonlinear time history direct integration. Nonlinearitas dari bangunan didapatkan dari material dan geometri yang diwakilkan oleh sendi plastis pada bangunan dengan perletakan tetap dan base isolator yang telah berdeformasi melebihi batas lelehnya pada bangunan dengan perletakan terisolasi. Dari hasil penelitian menunjukkan penggunaan base isolator pada struktur bangunan tahan gempa meningkatkan performa bangunan akibat beban gempa, serta memperkecil gaya dalam element-element struktur bangunan.

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from the plastic hinge and the deformation of the isolator that exceed its yield deformation point. Result shows that isolated base structure has better performances than fixed base structure. It showed by the decreasing amount of the

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