

**ABSTRAK**

*Judul : Evaluasi Kinerja Struktur Gedung Bertingkat Dengan Metode Analisis Dinamik Respon Spektrum Menggunakan Gempa Padang*

*(Studi Kasus Gedung F, Gandum Mas Kencana, Tangerang)*

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Tingginya potensi gempa di Indonesia, termasuk di Kota Tangerang, membuat struktur gedung harus diperhitungkan sesuai konsidi yang ada agar bangunan yang direncanakan mampu bertahan terhadap guncangan gempa. Salah satunya pembangunan proyek Gedung F Gandum Mas Kencana, pada proyek ini ingin melakukan pembahasan bagaimana gedung tersebut dapat mempertahankan fungsi struktur setelah gempa dengan melakukan evaluasi kinerja gedung tahan gempa menggunakan metode analisis respon spektrum. Adapun maksud dan tujuannya untuk menentukan hasil dari analisis dinamik pembangunan Gedung F, Gandum Mas Kencana, Tangerang dengan metoda statis ekuivalen, untuk menentukan hasil dari analisis dinamik pembangunan Gedung F, Gandum Mas Kencana, Tangerang dengan metode respon spektrum dan untuk menentukan perbandingan antara metoda statis ekuivalen dengan metode respon spektrum. Metode yang digunakan dalam penelitian ini adalah metode kualitatif. Simpangan maximum arah X, arah X ( $U_x$ ) sebesar 28.725 mm, arah Y ( $U_y$ ) sebesar 14.15 mm dan arah Z ( $U_z$ ) 26.5 mm. dan berikut adalah grafik dari simpangan maximum arah x. Simpangan maximum arah Y, arah X ( $U_x$ ) sebesar 28.725 mm, arah Y ( $U_y$ ) sebesar 51.15 mm, dan arah Z ( $U_z$ ) sebesar 26.5 mm. dan berikut adalah grafik dari simpangan maximum arah y. Ragam analisis mode 1 sebesar 14,714 lebih besar dari mode yang lainnya, Hasil daya geser statis arah X dan Y mempunyai nilai sama besar, dan gaya geser dinamis terdapat nilai perbedaan, Simpangan antar tingkat (Drift) arah X dan Y dinyatakan aman, Simpangan maximum arah X, arah X ( $U_x$ ) sebesar 28.725 mm, arah Y ( $U_y$ ) sebesar 14.15 mm dan arah Z ( $U_z$ ) 26.5 mm. Dan simpangan arah Y, arah X ( $U_x$ ) sebesar 28.725 mm, arah Y ( $U_y$ ) sebesar 51.15 mm, dan arah Z ( $U_z$ ) sebesar 26.5 mm, Nilai gaya-gaya dalam statis mencakup gaya geser maximum, gaya normal maximum, gaya momen maximum dan tegangan normal, dan Nilai gaya-gaya dalam dinamis mencakup gaya geser maximum, gaya normal maximum, gaya momen maximum dan tegangan normal.

**Kata kunci:** *Evaluasi; Gedung Bertingkat; Gempa Padang; Respon Spektrum; Analisis Dinamik*

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**ABSTRACT**

*Title : Performance Evaluation of Multi-storey Building Structures Using Dynamic Analysis of Response Spectrum Methods Using the Padang Earthquake*

*(Studi Kasus : Gedung F, Gandum Mas Kencana, Tangerang)*

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*The high potential for earthquakes in Indonesia, including in the City of Tangerang, makes the building structure must be calculated according to existing conditions so that the planned building can withstand earthquake shocks. One of them is the construction of the F Gandum Mas Kencana Building project. In this project, we want to discuss how the building can maintain its structural function after an earthquake by evaluating the performance of earthquake resistant buildings using the response spectrum analysis method. The aims and objectives are to determine the results of the dynamic analysis of the construction of F Building, Gandum Mas Kencana, Tangerang using the equivalent static method, to determine the results of the dynamic analysis of the construction of F Building, Gandum Mas Kencana, Tangerang using the response spectrum method and to determine the comparison between static methods equivalent to the response spectrum method. The method used in this research is qualitative method. The maximum deviation in the X direction, the X direction ( $U_x$ ) is 28.725 mm, the Y direction ( $U_y$ ) is 14.15 mm and the Z direction ( $U_z$ ) is 26.5 mm. and the following is a graph of the maximum deviation in the x direction. The maximum deviation in the Y direction, the X direction ( $U_x$ ) is 28.725 mm, the Y direction ( $U_y$ ) is 51.15 mm, and the Z direction ( $U_z$ ) is 26.5 mm. and the following is a graph of the maximum deviation in the y direction. Variety of analysis mode 1 is 14.714 greater than the other modes. The results of the static shear forces in the X and Y directions have the same value, and the dynamic shear forces have different values. The drift between the X and Y directions is declared safe. X, direction X ( $U_x$ ) of 28.725 mm, direction Y ( $U_y$ ) of 14.15 mm and direction Z ( $U_z$ ) 26.5 mm. And the deviation in the Y direction, the X direction ( $U_x$ ) is 28.725 mm, the Y direction ( $U_y$ ) is 51.15 mm, and the Z direction ( $U_z$ ) is 26.5 mm. The values of the forces in static include maximum shear force, maximum normal force, moment force maximum and normal stress, and the values of the dynamic forces include the maximum shear force, maximum normal force, maximum moment force and normal stress.*

**Keywords:** *Evaluation; Multi-Storey Building; Desert Earthquake; Spectrum Response; Dynamic Analysis*