

**STUDI PERENCANAAN TAHAN GEMPA PONDASI RAKIT PADA
GEDUNG PERPUSTAKAAN DI AKADEMIK
TEKNIK PENERBANGAN MEDAN**

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RINGKASAN

Pondasi adalah struktur bagian bawah suatu bangunan yang berhubungan langsung dengan tanah, atau bagian bangunan yang terletak dibawah permukaan tanah yang. Pada pembangunan Gedung Perpustakaan Di Akademik Teknik penerbangan direncanakan menggunakan pondasi rakit. Permasalahan pada proyek pembangunan adalah terletak di wilayah zona gempa 3 masuk dalam kategori zona gempa cukup tinggi. Mengingat di dalam perpustakaan, khususnya diperguruan tinggi banyak menyimpan dokumen-dokumen yang sangat rentan terhadap air, oleh karena itu perlu direncanakan pondasi berdasarkan kaidah-kaidah struktur gedung tahan gempa. Mengingat di dalam perpustakaan, khususnya diperguruan tinggi banyak menyimpan dokumen-dokumen yang sangat rentan terhadap air. Metode yang akan digunakan pada penelitian ini adalah analisis desain struktur pondasi, distribusi tegangan, penurunan , des settlement dan daya dukung. Berdasarkan hasil analisis didapatkan nilai dari total beban yang diterima pondasi rakit pada Gedung Perpustakaan di Akademik Teknik Kesehatan Penerbangan Medan pada sumbu ex adalah 2,01245 sedangkan sumbu ey senilai 2,66584 dan luas penampang kanan kiri 35m, kapasitas daya dukung pondasi rakit senilai 358,95 kg/m² dan didapat Penurunan tanah yang dihasilkan dari pondasi rakit pada Gedung Perpustakaan di Akademik Teknik Penerbangan Medan senilai 263,2 mm.

Kata Kunci: Daya Dukung, Distribusi Tegangan, Penurunan Tanah, dan Pondasi Rakit

**STUDY OF EARTHQUAKE RESISTANCE PLANNING FOR RAFT
FOUNDATIONS IN LIBRARY BUILDINGS AT MEDAN AERIAL
ENGINEERING ACADEMIC**

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ABSTRACT

The foundation is the lower structure of a building that is directly connected to the ground, or the part of the building that is located below the ground surface. In the construction of the Library Building at the Aviation Engineering Academy, it is planned to use a raft foundation. The problem with the construction project is that it is located in an earthquake zone 3 area, which is included in the category of a fairly high earthquake zone. Considering that in the library, especially in universities, many documents are stored that are very vulnerable to water, therefore it is necessary to plan the foundation based on the principles of earthquake-resistant building structures. Considering that in the library, especially in universities, many documents are stored that are very vulnerable to water. The method that will be used in this study is the analysis of the foundation structure design, stress distribution, settlement, des settlement and bearing capacity. Based on the analysis results, the value of the total load received by the raft foundation on the Library Building at the Medan Aviation Health Engineering Academy on the ex axis is 2.01245 while the ey axis is 2.66584 and the right and left cross-sectional area is 35m, the bearing capacity of the raft foundation is 358.95 kg/m² and the land subsidence resulting from the raft foundation on the Library Building at the Medan Aviation Engineering Academy is 263.2 mm.

Keywords: *Bearing Capacity, Stress Distribution, Land Settlement, and Raft Foundations.*