

**ANALISIS PONDASI GEDUNG *SHELTER* TERHADAP
APLIKASI BEBAN GEMPA (SNI 1726:2012) DAN
BEBAN *TSUNAMI* (FEMA P-646/APRIL 2012)
(Studi Kasus : Gedung *Shelter* Ulak Karang Kota Padang)**

Agista Satryo Falck, Taufik, Khadavi

Jurusan Teknik Sipil, Fakultas Teknik Sipil dan Perencanaan,
Universitas Bung Hatta Padang

Email : agis_falck@yahoo.com, taufikfik88@rocketmail.com, qhad17@yahoo.com.

Abstrak

Gedung *Shelter* Ulak Karang berlokasi di Jalan Sumatera Ulak Karang Kota Padang. Analisis pondasi terhadap beban gempa berdasarkan SNI 1726:2012 dengan kategori risiko IV, kemudian terhadap beban *tsunami* berdasarkan FEMA P-646/April 2012 menggunakan peta inundasi kota Padang tahun 2010 dengan run up maksimum rencana adalah 5,4 m dari dasar struktur. Hasil analisis terhadap beban gempa, akibat gaya aksial tekan 112% dan gaya aksial tarik 27% dari kapasitas aksial pondasinya, kemudian akibat gaya lateral arah sumbu x 1.257%, gaya lateral arah sumbu y 1.909% dari kapasitas lateralnya. Terhadap beban *tsunami* gaya aksial tarik 12,1% dari kapasitas aksialnya, kemudian akibat gaya lateral arah sumbu x 186% dan gaya lateral arah sumbu y 2.093% dari kapasitas lateral pondasinya. Defleksi maksimum pondasi tiang akibat gaya gempa adalah 35 cm, kemudian akibat gaya *tsunami* adalah 19 cm, defleksi yang terjadi lebih besar dari defleksi yang diizinkan. Penurunan pondasi akibat beban yang bekerja sebesar 2,59 cm, penurunan yang terjadi masih pada batas penurunan yang diizinkan.

Kata kunci : shelter, pondasi, gempa, tsunami.

**AN ANALYSIS OF THE SHELTER BUILDING'S FOUNDATION
TOWARDS EARTHQUAKE LOAD (SNI 1726:2012) AND
TSUNAMI LOAD (FEMA P-646/2012) APPLICATION
(Study Case : Shelter Ulak Karang Padang City)**

Agista Satryo Falck, Taufik, Khadavi

Department of Civil Engineering, Faculty of Civil Engineering and Planning,
Bung Hatta University Padang

Email : agis_falck@yahoo.com, taufikfik88@rocketmail.com, ghad17@yahoo.com.

Abstract

The Shelter Ulak Karang is located at Sumatera Street Ulak Karang Padang City. The analysis of the foundation towards earthquake load based on SNI 1726:2012 it's categorized as earthquake risk IV, then the tsunami load based on FEMA P-646 refers to inundation maps for Padang City 2010 the elevation run up maksimum is 5,2 m from the base of structure. The results againts earthquake loads, the axial compressive load 112% and the uplift force 27% from axial bearing capacity, then horizontal force at long section direction of the building 1.257%, and at cross section 1.909% from laterally bearing capacity of the foundation. Towards the tsunami loads the axial uplift force 12,1% from axial bearing capacity, then againts horizontal force at long section direction of the building 186% and at cross section 2.093% from laterally bearing capacity of the foundation. The maksimum pile deflection caused by the earthquake load is 35 cm, then caused by tsunami load is 19 cm, its greater than allowable pile deflection. The settlement of foundation caused the working load is 2,59 cm, it still allowable of settlement pile.

Keyword : shelter, foundation, erathquake, tsunami.