ABSTRAK

Gempa bumi berpotensi menyebabkan terjadinya kerusakan struktur bangunan rumah tinggal sederhana akibat tidak mampu menerima beban goncangan yang diterima. Bangunan rumah tinggal sederhana yang mengalami kerusakan akibat gempa dapat terjadi karena pada umumnya dibangun secara konvensional, yang hanya berbekal pada pengalaman dari pekerja (mandor/tukang) selain itu, kualitas material pembentuk dinding pasangan bata belum pernah diuji di laboratorium. Dalam penelitian ini dilakukan pengujian terhadap nilai modulus elastisitas yang diperoleh dari pengujian kuat tekan dinding variasi kualitas bata. Untuk itu dengan bata produksi local dari dari beberapa di D.I.Y dibuat menjadi dinding pasangan bata sebagai benda uji. Setiap unit bata merah dilakukan berbagai pengujian meliputi sifat fisik, daya serap air, kuat tekan. Selain itu, 4 (empat) komposisi campuran mortar juga diuji untuk menentukan kuat tekan tertinggi guna diaplikasikan pada pemasangan dinding pasangan bata. Selanjutunya, 3 (tiga) variasi dinding pasangan bata meliputi dinding: tanpa plesteran, dengan plesteran, dan plesteran dengan dilapisi kawat anyaman (*wire mesh*) disatu sisi. Setiap variasi dinding dibuat 10 benda uji, sehingga jumlah total benda uji dinding sebanyak 30 buah. Dinding pasangan bata dengan variasi kualitasnya dilakukan pengujian kuat tekan guna menentukan modulus elastisitas setiap variasi dinding. Dari hasil pengujian terhadap 30 benda uji dinding pasangan bata tanpa plesteran, dengan plesteran, dan dengan plesteran dilapisi kawat anyam satu sisi dapat diperoleh nilai-nilai kuat tekan tertinggi setiap produksi sebesar 1,816 MPa (bata tipe J, Sleman), 2,321 MPa (bata tipe J, Sleman) dan 2,610 MPa (bata tipe A, Godean). Berdasarkan ketentuan dalam *Erocode 6* diperoleh nilai-nilai modulus elastisitas dinding pasangan bata yang berkorelasi langsung dari variasi kuat tekan dindingnya. Modulus elastisitas tertinggisetiap variasi sebesar 1816 MPa (bata tipe J, Sleman), 2321 MPa (bata tipe J, Sleman) dan 2610 MPa (bata tipe A, Godean).

Kata kunci : perilaku sruktural, bata lokal, dinding pasangan bata, modulus elastisitas,kuat tekan dinding pasangan bata

ABSTRACT

Earthquake is potentially caused structure damage of non structural house due to inability of the structure to withstand with the shaking that coming. Damaging in non structural house generally occurred because were built conventionally, only based on the experience of the workers (supervisor/workers) and the quality of the material were never been tested in the laboratory.In this study the elasticity of modulus value testing from compressive strength of variation wall brick testing were evaluated. Thus, with local produce brick from several places in D.I.Y were built into wall brick as a tool of examination. Each unit of red brick is tested with various examination include physically type, water absorption potential, compressive strength. Furthermore 4 (four) compositions mixing of mortar were also examined t determine the highest compressive strength to be applied to wall brick mounting. And then, 3 (three) variations of wall brick mounting including wall without plaster, with plaster, and plaster covered with wire mesh on one side.Each of wall variation was made into 10 examination unit so the total amount units of wall examination was 30 units. The quality of wall variation brick mounting is examined through compressive strength to determine the modulus elasticity of each variation wall. From the examination to 30 examination units wall brick mounting without plaster, with plaster, and plaster covered with wire mesh on one side, hence were obtained the highest values from each products were 1.816 MPa (Brick type F, Sleman). 2,321 MPa (Brick type H, Sleman), 2,610 MPa (Bata tipe G, Godean). According to provision in Erocode 6, The modulus of elasticity wall brick mounting values is parallel (has a direct correlation) from the variation of the compressive strength of the wall. The highest values of Modulus of elasticity from each variation are 1816 MPa (Brick type, Sleman), 2321 MPa (brick type H, Sleman) and 2610 (Bric type G, Godean).

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Keywords: behavior structurally, local brick, masonry walls, modulus of elasticity, compressive strength of masonry walls