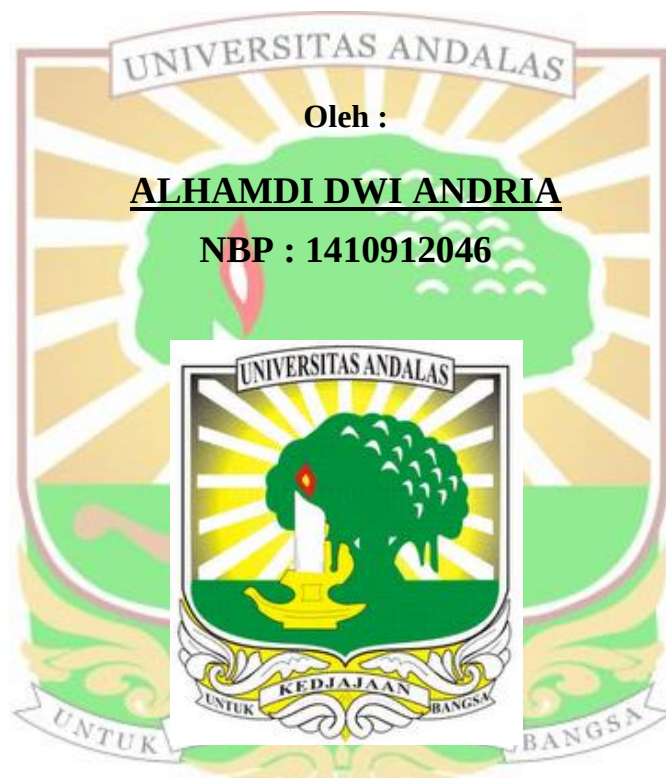


TUGAS AKHIR

KAJIAN EKSPERIMENTAL PENGGUNAAN PEREDAM DINAMIK GANDA *TUNED LIQUID COLUMN DAMPER* DAN SISTEM MASSA PEGAS PADA PEMODELAN STRUKTUR RUANG DUA LANTAI

Diajukan Sebagai Salah Satu Syarat Untuk Menyelesaikan
Pendidikan Tahap Sarjana



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ABSTRACT

Vibrations in building structure due to external force can be reduced by adding absorber into structure. One of technique in that regard is through dynamics damper. Previous researches have developed double dynamics vibration silencer namely Tuned Liquid Column Damper (TLCD) and spring mass system (TMD). However, this double absorber has been applied only to reduce vibration occurred on solely one-side movement. This study carried out experiment of double dynamics damper application of Tuned Liquid Column Damper (TLCD) and spring mass system (TMD) were designed to be capable of vibration reduction caused by interfering forces on two sided in y-z axis and x-z axis. Examining test was evaluated by varying fluids volume in TLCD and TMD mass. Undesirable force was added with impulse force by impact hammer and sinusoidal force from exciter. Experimental results displayed optimum performance of TLCD and TMD. Optimum work of TLCD was volume 364 ml in y-z direction and volume 392 ml in x-z direction, whereas the optimum work for TMD was mass 0,422 kg in y-z direction and mass 0,435 kg in x-z direction. Respons of dynamics structure versus time were affected by dynamics silencer, the amount of vibration responses degraded by silencer was 59,20 % in y-z direction and 75,23 % in x-z direction. This experiment conclude that TLCD and TMD were capable of vibration reduction caused by interfering forces into structure.

Keywords: Interfering forces, structure, dynamics silencer, TLCD

