

**ANALISIS NUMERIK STABILITAS TEROWONGAN NANJUNG
KABUPATEN BANDUNG**

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ABSTRAK

Terowongan Air Nanjung merupakan terowongan kembar pengelak air yang berada di sekitar Curug Jompong, Kecamatan Margaasih, Kabupaten Bandung. Terowongan air ini memiliki panjang 2 x 230 m dan diameter 2 x 9,2 meter yang berfungsi mengalirkan air untuk mengurangi banjir akibat meluapnya sungai Citarum. Bangunan terowongan perlu analisis terhadap stabilitasnya untuk mengidentifikasi tingkat keamanan bangunan. Dalam studi ini dilakukan analisis perhitungan terhadap pembebanan dengan empat kombinasi pembebanan yaitu kondisi setelah dibangun, kondisi setelah dibangun terjadi gempa, kondisi saat terowongan beroperasi, dan kondisi saat terowongan beroperasi terjadi gempa. Dari hasil kombinasi pembebanan, dilakukan perhitungan momen dan lintang menggunakan metode Beggs. Hasil perhitungan didapat momen maksimum sebesar 591,658 ton.m dan lintang maksimum 413,011 ton. Untuk memodelkannya, digunakan program komputer Midas GTS NX. Berdasarkan momen ultimate 620,429 kNm, tulangan yang digunakan yaitu D32–130 dan D29–110.

Kata kunci: terowongan air, kombinasi pembebanan, momen maksimum, penulangan.

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**NUMERICAL ANALYSIS OF NANJUNG TUNNEL STABILITY
IN BANDUNG REGENCY**

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ABSTRACT

The Nanjung Water Tunnel is a twin water-evasion tunnel located near Curug Jompong in the Margaasih District of Bandung Regency. This water tunnel has a length of 2 x 230 m and a diameter of 2 x 9.2 meters, which functions to drain water to reduce flooding due to the overflow of the Citarum River. The tunnel needs an analysis of its stability to identify the level of building safety. In this study, an analysis of the load with four combinations of loading was performed, namely the condition after it was built, the condition after it was built when an earthquake occurred, the condition when the tunnel was operating, and the condition when the tunnel was operating when an earthquake occurred. From the results of the load combination, moment and shear were calculated using the Beggs Method. The maximum bending moment is 591,658 tm and the maximum shear force is 413,011 t. To model it, the Midas GTS NX computer software was used. Based on the ultimate moment of 620,429 kNm, the reinforcement used is D32-130 and D29-110.

Keywords : water tunnel, load combination, maximum moment, reinforcement.

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