

ABSTRAK

Di Indonesia sedang marak-maraknya pembangunan infrastruktur, terutama dalam bidang konstruksi. Hampir semua pembangunan konstruksi membutuhkan beton sebagai bahan bangunan inti. Karena keuntungan yang dimiliki beton baik dalam segi efisiensi maupun keekonomisan dalam pengerjaannya. Namun bahan-bahan penyusun beton ialah bahan yang terkadang sulit didapatkan pada musim-musim dan lokasi-lokasi tertentu. Tidak di semua lokasi tersedia beton dengan kualitas yang diperlukan, oleh sebab itu inovasi teknologi beton selalu dituntut guna mempermudah kebutuhan beton di lokasi manapun dan di musim apapun. Oleh karena itu, dibutuhkan bahan pengganti yang mudah didapatkan dimana saja. Salah satu bahan alternative yang masuk ke dalam kategori tersebut ialah limbah kaca. Selain mudah didapatkan, harganya pun murah serta dapat menjadi solusi *recycling* yang ramah lingkungan.

Pengujian dilakukan hanya pada agregat kasar dan halus saja. Pengujian dilakukan di Laboratorium Teknik Sipil Universitas Sangga Buana/YPKP. Prosesnya sendiri diawali dengan pengujian agregat kasar dan halus serta pengujian analisa ayak saringan no. 8 (4,75 mm), perhitungan *mix design*, pengujian kuat tekan lalu analisa hasil dari semua pengujian yang dilakukan.

Hasil dari penelitian ini ialah perbandingan kuat tekan beton normal dengan kuat tekan beton substitusi agregat halus dengan limbah kaca, sebagai salah satu tujuan penelitian ini. Substitusi agregat halus dengan limbah kaca terbukti lebih ekonomis dan lebih kuat dibanding dengan beton normal.

Keywords: kuat tekan, pengujian, agregat

ABSTRACT

In Indonesia, infrastructure development has been excessively happening, especially in construction engineering. Because of the advantages both in terms of efficiency and economical in the manufacturing process, almost every construction building needs concrete as the main material. However, in certain seasons and locations concrete materials are sometimes unavailable. In several locations, concrete with the required quality is unavailable, so to facilitate the need of concrete in anywhere and any seasons the innovation of concrete technology is always required. Therefore, a substitute which is available everywhere is needed. Glass waste is one of the alternative materials which are included that categories mentioned above. Not only easy to get, it also low costs and could be environmentally friendly recycling solution.

Examinations were performed on coarse and fine aggregates only. The examinations were conducted at Civil Engineering Laboratory of Sangga Buana University/YPKP. The procedure itself starts with a coarse and fine aggregate examination, screening analysis mesh number eight (4,75 mm), mix design calculation, compressive strength examination and finally analysis of all the examinations performed.

As one of the purposes of this research, comparison of normal concrete compressive strength with fine aggregate substitution with glass waste concrete is the result of this research. Fine aggregate substitution with glass waste proved to be more economical and stronger than normal concrete.

Keywords: compressive strength, examination, aggregate