

ABSTRAK

Self-Fiber Compacting Concrete (SFCC) merupakan beton berserat yang memiliki tingkat kecairan yang tinggi dibandingkan dengan beton normal, sehingga beton SFCC tidak membutuhkan *vibrator* atau alat pemadat lainnya saat pengecoran. Tujuan penelitian ini adalah untuk mengetahui *fresh properties* beton segar dan kuat tarik belah *self-fiber compacting concrete* dengan penambahan *zeolite* dan serat *nylon*. Presentase variasi *zeolite* yang digunakan adalah 0%, 5%, 10%, dan 15% serta serat *nylon* 1% dengan panjang 50 mm. Penambahan *admixture superplasticizer Sikament LN* diberikan pada campuran beton sebanyak 1,5% dari berat semen dan *zeolite*. Pemeriksaan *fresh properties* beton dilakukan untuk mengetahui karakteristik beton segar yang mengacu pada *European Federation of National Trade Associations Representing Producers and Applicators of Specialist Building Products* (EFNARC). Pemeriksaan yang dilakukan pada penelitian ini adalah *slump flow*, *L-box*, *V-funnel*, dan meja sebar T50. Hasil pemeriksaan *fresh properties* telah memenuhi acuan dalam EFNARC (2002). Pengujian kuat tarik belah dilakukan pada umur beton 7 hari, 14 hari, dan 28 hari. Hasil pengujian kuat tarik belah tertinggi dimiliki campuran beton dengan variasi *zeolite* 5%, serat *nylon* 1% panjang 50 mm, dan *Sikment LN* 1,5% pada umur beton 28 hari yaitu 3,20 MPa.

Kata-kata kunci: *self-fiber compacting concrete*, *fresh properties*, kuat tarik belah beton, *zeolite*, dan serat *nylon*.

ABSTRACT

Self-Fiber Compacting Concrete (SFCC) is fibrous concrete with a high level of liquidity compared to normal concrete. The use, SFCC does not need vibrator or other compactor machines during casting process. The objective of this research is to identify the fresh properties of fresh concrete and the split tensile strength of self-fiber compacting concrete with zeolite and nylon fiber added materials. The zeolite percentage variation used in the research were 0%, 5%, 10%, and 15% whilst for the nylon fiber was 1% with 50 mm in length. Admixture superplasticizer Sikament LN was added to the concrete mixture with the percentage of 1,5% of the cement and zeolite weight. An inspection on fresh properties concrete aiming at identifying the characteristics of fresh concrete was done in accordance to European Federation of National Trade Associations Representing Producers and Applicators of Specialist Building Products (EFNARC). The inspections conducted in the research were slump flow, L-box, V-funnel, and spread table of T50. The result indicated that the inspection on fresh properties had been in accordance with EFNARC (2002). The split tensile strength test was done when the concrete aged 7 days, 14 days, and 28 days. The highest result on the split tensile strength test was taken from the 5% zeolite variation, 1% nylon fiber with 50 mm length, and 1,5% Sikament LN at the concrete age of 28 days amounting at 3,20 MPa.

Keywords: self-fiber compacting concrete, fresh properties, split tensile strength test, zeolite, and nylon fiber.