

ABSTRAK

Self-fiber compacting concrete (SFCC) merupakan pengembangan dari beton konvensional dengan tambahan serat yang memiliki sifat kecairan yang tinggi sehingga dapat mengisi setiap rongga pada cetakan dengan beratnya sendiri dan dapat memadat dengan sendiri tanpa bantuan *vibrator* dan *compactor*. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan serat *nylon* dan variasi *zeolite* sebagai substitusi semen terhadap pengujian beton segar dan kuat lentur. Pengujian ini menggunakan bahan tambah serat *nylon* dengan kadar 1% dan variasi *zeolite* 0%, 5%, 10%, dan 15% serta *superplasticizer sikament LN* dengan kadar 1,5%. Sifat beton segar diuji dengan pengujian *slump-flow*, *T50*, *v-funnel*, dan *l-box*, hasil pengujian dari empat metode telah memenuhi standar ef-narc. Pengujian kuat lentur dilakukan pada beton umur 7, 14, dan 28 hari, hasil pengujian kuat lentur optimum didapatkan pada variasi *zeolite* 10% sebesar 4,225 MPa pada umur 28 hari. Penambahan kadar *zeolite* yang lebih tinggi menyebabkan nilai kuat lentur menjadi menurun.

Kata kunci: *self-fiber compacting concrete*, *zeolite*, serat *nylon*, beton segar, dan kuat lentur.

ABSTRACT

Self-fiber compacting concrete (SFCC) is the development of conventional concrete with added fibre has a high liquidity can fill every cavity on mold with its own weight and can be solidified by itself without the help of a vibrator and compactor. This research aims to know the influence of nylon fiber additions and variations of the zeolite as a substitution of cement concrete testing against fresh and strong bending. This test uses the added fiber nylon with levels of 1 % and 0 %, 5 %, 10 %, and 15 % variations of zeolite as well as a superplasticizer sikament LN with levels of 1.5%. The properties of the fresh concrete was tested with testing slump-flow, T50, v-funnel, and l-box, the test results from four methods have been standard efnarc. The test of flexural strength was carried out at 7, 14, and 28 days, the test results obtained at optimum bending the strong variation of 10 % of the zeolite 4,225 MPa at 28 days of age. The addition of zeolite levels higher value cause strong bending be decreased.

Key words : self-fiber compacting concrete, zeolite, nylon fiber, fresh properties, and flexura strength.