

ABSTRAK

Pasta semen sebagai bahan utama campuran beton memiliki peran yang besar terhadap karakteristik beton yang dihasilkan. Oleh karena itu diperlukan variasi terhadap campuran pasta agar sesuai dengan kebutuhan. *Calcium stearate* sebagai bahan yang bersifat *hydrophobic* dan mampu memberikan oksidasi kalsium terhadap pasta semen diharapkan dapat meningkatkan kuat tekan mortar. Penelitian ini bermaksud mengetahui pengaruh penambahan *calcium stearate* sebesar 0%,1%,2%, dan 3% berat semen terhadap waktu ikat awal dan akhir semen, fase hidrasi pasta dan pada hari ke-3,7, dan 28 umur pasta semen dan kuat tekan mortar pada hari ke-3,7,14 dan 28 umur mortar. Hasil penelitian menunjukkan bahwa penambahan *calcium stearate* mempercepat waktu ikat awal semen 4,71% dan waktu ikat akhir semen sebesar 11,11% setiap penambahan 1% kadar *calcium stearate* dari berat semen. Penambahan *calcium stearate* pada campuran mortar juga menurunkan kuat tekan mortar.

Kata Kunci : pasta semen, mortar, *calcium stearate*, fase hidrasi, waktu ikat, kuat tekan, kandungan kimia.

ABSTRACT

The cement paste as the main ingredient of concrete mix has a great role of the characteristics of concrete produced. It is therefore necessary of the variation of the mixed paste to suit the needs. Calcium stearate as a material that is hydrophobic and capable of delivering the oxidation of calcium toward the cement paste is expected to increase comprehensive strength of mortar. This research intends to know the influence of addition of calcium stearate of 0%,1%, 2%, and 3% of the weight of the cement to the initial and final setting time of cement, and hydration phase of 3,7, and 28 day aged cement paste and mortar on compressive strength 3, 7, 14 and 28 day age mortar. The research results showed that the addition of the calcium stearate cement initial setting time speed up 4,71% and the time of final setting time cement amounted to 11,11% per the addition of 1% levels of calcium stearate of cement mass. The addition of calcium stearate on mortar mix also lower the comprehensive strength of mortar.

Key words: cement paste, mortar, calcium stearate, hydration phase, setting time, comprehensive strength, chemical content.

