

## ABSTRAK

### ANALISA KUAT TEKAN BETON ANTARA SEMEN SCG DAN SEMEN TIGA RODA

#### PEDUAR

(xviii + 64 Halaman + 15 Gambar + 29 Tabel + Lampiran)

Dalam perkembangannya, kekuatan beton jadi sangat penting seiring penggunaannya dalam struktur bangunan. Untuk mencapai kekuatan beton yang direncanakan, salah satu faktornya adalah mutu bahan susun terutama semen. Namun, karena fungsi semen yang sangat penting membuat harga semen paling mahal diantara bahan - bahan penyusun beton lainnya.

Namun dengan perkembangan teknologi perusahaan industri semen mengeluarkan produk semen terbaru, yaitu semen **Siam Semen Grup (SCG)**. Dimana dikatakan mempunyai keunggulan membantu mengurangi jumlah penggunaan semen. Semen SCG 40 kg dapat dicampur dengan jumlah air dengan pasir setara dengan semen biasa 50 kg, baik untuk pemasangan batu bata maupun plastering.

Dalam Penelitian ini bertujuan menganalisa kuat tekan beton antara semen SCG dan semen TIGA RODA, dengan campuran semen, pasir Cimangkok, kerikil Rumpin dan air. Waktu perawatan: 7, 14, 21 dan 28 hari. Pengujian agregat halus dan kasar meliputi: analisa ayakan, penentuan kadar lumpur, kadar organik, kadar air, berat jenis dan penyerapan air. Beton segar diuji workabilitas melalui uji nilai slump. Parameter pengujian beton yang dilakukan meliputi: berat jenis, XRD dan kuat tekan.

Dari hasil pengujian menunjukkan bahwa beton dengan semen Tiga Roda terbaik untuk kuat tekan rencana K-250, beton yang dihasilkan memiliki karakteristik: berat jenis 19052, 922 kg/m<sup>3</sup>, dan kuat tekan 324,44 kg/cm<sup>2</sup>.

**Kata kunci: Beton Semen Tiga Roda dan SCG, XRD, Kuat Tekan, Berat Jenis**

## ABSTRACT

### THE ANALYSIS OF WASTE CLAY BRICK POWDER AS SUBSTITUTION CEMENT IN POROSITY AND COMPRESSIVE STRENGTH OF CONCRETE

**PEDUAR**

**(xviii + 64 Pages + 15 Picture + 29 Table + Attachments)**

In its development, the strength of concrete becomes very important as its use in building structures. To achieve the strength of the planned concrete, one of the factors is the quality of the stacking materials, especially cement. However, because the very important function of cement makes the price of cement the most expensive among other concrete materials.

However, with the development of technology the cement industry company issued the latest cement products, namely Semen Siam Cement Group (SCG). Where it is said to have the advantage of helping to reduce the amount of use of cement. Cement SCG 40 kg can be mixed with the amount of water with sand equivalent to ordinary 50 kg cement, for both brick and plastering.

In this study aims to analyze the compressive strength of concrete between SCG cement and THREE WHEEL cement, with mixture of cement, Cimangkok sand, Rumpin pebbles and water. Treatment time: 7, 14, 21 and 28 days. Tests of fine and coarse aggregates include: sieve analysis, determination of mud content, organic content, moisture content, specific gravity and water absorption. Fresh concrete tested workability through slump value test. The concrete testing parameters performed include: specific gravity, XRD and compressive strength.

From the test results show that concrete with the best Three Wheel cement for the compressive strength of K-250 plan, the concrete produced has characteristics: specific gravity 19052, 922 kg / m<sup>3</sup>, and compressive strength 324.44 kg / cm<sup>2</sup>.

**Keywords: Three-Wheel Cement Concrete and SCG, XRD, Strong Press, Specific Gravity**