

PENGARUH PENCAMPURAN NATRIUM HIPOKLORIT TERHADAP KEKUATAN TEKAN GIPSUM TIPE III

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ABSTRAK

Tindakan desinfeksi dibutuhkan untuk mencegah penyebaran agen infeksi. Salah satu larutan desinfektan yang digunakan adalah natrium hipoklorit. Desinfeksi sebaiknya dilakukan tanpa menyebabkan perubahan pada kualitas model gipsum, sehingga teknik pencampuran larutan desinfektan pada bubuk gipsum dapat dijadikan alternatif. Tujuan dari penelitian ini untuk mengetahui pengaruh pencampuran natrium hipoklorit terhadap kekuatan tekan gipsum tipe III.

Penelitian dilakukan di Laboratorium Material dan Struktur Fakultas Teknik Universitas Andalas menggunakan metode eksperimental laboratoris dengan jumlah sampel 30 buah model gipsum tipe III. Sampel dibagi menjadi 5 kelompok perlakuan, yaitu pencampuran menggunakan natrium hipoklorit 0,5%, natrium hipoklorit 1%, natrium hipoklorit 2%, natrium hipoklorit 5% dan akuades sebagai kelompok kontrol. Pengukuran kekuatan tekan dilakukan dengan alat *Universal Testing Machine* (UTM).

Hasil penelitian menunjukkan penurunan rata-rata kekuatan tekan yang dicampur menggunakan natrium hipoklorit 0,5%, natrium hipoklorit 1%, natrium hipoklorit 2% dan natrium hipoklorit 5% dibandingkan pencampuran akuades. Hasil uji *One Way ANOVA* menunjukkan perbedaan signifikan ($p < 0.05$) antara kelompok natrium hipoklorit 0,5%, natrium hipoklorit 1%, natrium hipoklorit 2%, natrium hipoklorit 5% dan akuades sebagai kontrol. Kesimpulan penelitian ini bahwa terbukti terdapat pengaruh pencampuran natrium hipoklorit terhadap penurunan kekuatan tekan gipsum tipe III.

Kata Kunci: gipsum tipe III, kekuatan tekan, natrium hipoklorit

THE EFFECT OF MIXING SODIUM HYPOCHLORITE ON COMPRESSIVE STRENGTH OF TYPE III GYPSUM PRODUCT

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ABSTRACT

Disinfection is needed to avoid transmission of infectious agents. One of disinfectant solution used is sodium hypochlorite. Disinfection should be done without changing the quality of gypsum models, so the technique of mixing a disinfectant solution on gypsum powder can be used as an alternative. The purpose of this study was to determine the effect of mixing sodium hypochlorite to the compressive strength of type III gypsum product.

The study was conducted at the Laboratory of Materials and Structures, Faculty of Engineering, Andalas University using laboratory experimental method with 30 pieces of type III gypsum models as samples. Samples were divided into 5 groups, that were mixed using 0.5% sodium hypochlorite, 1% sodium hypochlorite, 2% sodium hypochlorite, 5% sodium hypochlorite and distilled water as a control group. Measurement of the compressive strength was performed with a Universal Testing Machine (UTM).

The results showed that the models were mixed with 0.5% sodium hypochlorite, 1% sodium hypochlorite, 2% sodium hypochlorite and 5% sodium hypochlorite reduced the average of the compressive strength compared to the models that are mixed with distilled water. One Way ANOVA test showed that was significant differences ($p < 0.05$) among groups of 0.5% sodium hypochlorite, 1% sodium hypochlorite, 2% sodium hypochlorite, 5% sodium hypochlorite and distilled water as a control group. It was concluded that there were effect of mixing sodium hypochlorite to reduced the compressive strength of type III gypsum product.

Keywords: type III gypsum, compressive strength, sodium hypochlorite