Substitusi pecahan kaca sebagai agregat kasar pada beton portland dan beton geopolimer pengaruhnya pada kuat tekan = Waste glass as course aggregate substitution in portland and geopolymer concrete its effect on compressive strength

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Deskripsi Lengkap: https://lib.ui.ac.id/detail?id=20421865&lokasi=lokal

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Abstrak

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 Kaca merupakan sumber silika amorphous yang baik serta memiliki komposisi kimia dan reaktivitas yang tepat untuk melakukan reaksi Pozzolan. Sehingga muncul lah ide untuk menggunakan kaca sebagai agregat kasar pada beton. Pada penelitian ini, sampel yang dibuat adalah dua jenis beton, yaitu Portland dan Geopolimer dengan variasi substitusi kaca sebanyak 0%, 25%, 50%, 100%. Pengujian yang dilakukan adalah uji tekan dan pengamatan foto makro. Komposisi beton, sejarah perlakuan, dan suhu curing memberi pengaruh signifikan pada nilai kuat tekan yang dihasilkan. Kesimpulan yang didapatkan adalah beton Portland dan beton geopolimer dengan substitusi kaca sebesar 50% memiliki kuat tekan tertinggi, dan pasta geopolimer dapat melekat pada kaca namun pasta semen tidak.<hr>
ABSTRACT<b>
Glass are good source of amorphous silica and it also has good chemistry composition and precise reactivity to make Pozzolan reaction. So there was an idea to use glass as coarse aggregate in concrete. In this research, two types of concrete will be made, which are Portland concrete and geopolymer concrete with variation of waste glass substitution as much as 0%, 25%, 50%, 100%. The conducted tests are pressure test and macro photos observations. Concrete composition, treatment history, and curing temperature gave significant influence on their compressive strength. The conclusions are both portland and geopolymer concrete with 50% waste glass substitution has the highest compressive strength, and geopolymer paste could adhered to glass but cement paste could not.;Glass are good source of amorphous silica and it also has good chemistry composition and precise reactivity to make Pozzolan reaction. So there was an idea to use glass as coarse aggregate in concrete. In this research, two types of concrete will be made, which are Portland concrete and geopolymer concrete with variation of waste glass substitution as much as 0%, 25%, 50%, 100%. The conducted tests are pressure test and macro photos observations. Concrete composition, treatment history, and curing temperature gave significant influence on their compressive strength. The conclusions are both portland and geopolymer concrete with 50% waste glass substitution has the highest compressive strength, and geopolymer paste could adhered to glass but cement paste could not.;Glass are good source of amorphous silica and it also has good chemistry composition and precise reactivity to make Pozzolan reaction. So there was an idea to use glass as coarse aggregate in concrete. In this research, two types of concrete will be made, which are Portland concrete and geopolymer concrete with variation of waste glass substitution as much as 0%, 25%, 50%, 100%. The conducted tests are pressure test and macro photos observations. Concrete composition, treatment history, and curing temperature gave significant influence on their compressive strength. The conclusions are both portland and geopolymer concrete with 50% waste glass substitution has the highest compressive strength, and geopolymer paste could adhered to glass but cement paste could not.;Glass are good source of amorphous silica and it also has good chemistry composition and precise reactivity to make Pozzolan reaction. So there was an idea to use glass as coarse

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