

Studi karakteristik agregat kasar ringan hasil daur ulang limbah kantong plastik high density polyethylene dan pengaruhnya terhadap kuat tekan dan tarik belah serta modulus elastisitas beton ringan = Lightweight coarse aggregate characteristic study from recycled high density polyethylene plastic bags waste and its effect to the modulus of elasticity, splitting-tensile and compressive strength of lightweight concrete

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Abstrak

Kantong plastik warna hitam High Density Polyethylene (HDPE) banyak digunakan tetapi limbahnya tidak dikelola dengan baik. Agregat ringan hasil daur ulangnya dapat dipakai sebagai bahan pengisi beton untuk mengurangi limbah tersebut. Karakteristik agregat ringan didapat dari pengujian kuat tekan agregat ringan, berat jenis dan penyerapan air, berat isi dan rongga udara pada agregat, gradasi agregat serta ketahanan terhadap keausan. Pengujian beton ringan dari penggunaan agregat tersebut dilakukan terhadap kuat tekan, kuat tarik dan modulus elastisitas. Pada umur 28 hari didapatkan kuat tekan 11,39 MPa, kuat tarik 1,08 MPa dan Modulus elastisitas 4.611,672 MPa Nilai kuat tekan yang didapat berdasarkan SNI 03-3449-2002 dapat digunakan untuk struktural ringan.

*There are a lot of black High Density Polyethylene plastic bags using but their waste aren't being maintain properly. Recycled lightweight coarse aggregate from their waste can be use as one of concrete filler to reduce them. Lightweight aggregate characteristic can be obtain from compressive strength, spesific gravity and absorption, unit weight and void, and resistance to degradation by abrasion and impact in the los angeles machine testing. Lightweight concrete made from these aggregate was tested for their compressive and splitting-tensile strength and also their modulus of elasticity. Their compressive strength reached 11,39 MPa, splitting-tensile strength reached 1,08 MPa and modulus of elasticity 4.611,672 MPa on 28 days old concrete. From their compressive strength refer to SNI 03-3449-2002 can be classified as moderate strength lightweight concrete.*