

Studi karakteristik agregat kasar ringan hasil daur ulang limbah gelas plastik poli propilen (PP) dan pengaruhnya terhadap kuat tekan, kuat tarik belah dan modulus elastisitas = Lightweight coarse aggregate characteristic study from recycled poly propylene(pp) plastic cup waste and its effect to the modulus of elasticity, splitting-tensile and compressive strength of lightweight concrete

Mega Kartikawati, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20248419&lokasi=lokal>

---

Abstrak

Tujuan penelitian adalah untuk memperoleh data karakteristik agregat kasar ringan buatan limbah gelas plastik Poli Propilen (PP) terhadap kuat tekan, kuat tarik belah, dan modulus elastisitas. Pengujian sifat fisik agregat kasar ringan diperoleh berat jenis sebesar 0,9068 gr/cm<sup>3</sup>, absorpsi 0,6624, berat isi 483 kg/m<sup>3</sup>, kadar air 0,075 %, keausan agregat 7,68 %, modulus elastisitas agregat PP 1133,55 MPa dengan rasio Poisson 0,2498. Pengujian sifat mekanis beton ringan yaitu kuat tekan beton ringan sebesar 11,714 Mpa, kuat tarik belah sebesar 1,1495, modulus elastisitas sebesar 6413,9725 MPa, dan rasio Poisson sebesar 0,3241. Berdasarkan ACI 213R-87, beton ringan ini termasuk dalam klasifikasi beton ringan mutu sedang.

*The research is purpose to get the lightweight coarse aggregate characteristic from recycled Poly Propylene (PP) plastic cup waste and its effect to the modulus of elasticity, splitting-tensile and compressive strength of lightweight concrete. The results of physical properties of aggregates are: specific gravity is 0,9068 gr/cm<sup>3</sup>, water absorption is 0,6624, density is 483 kg/m<sup>3</sup>, water content is 0,075 % , the resistance of abrasion is 7,68 %, modulus of elasticity is 1133,55 MPa and Poisson's ratio of lightweight coarse aggregate is 0,2498. The results of mechanical properties of lightweight concrete such as compressive strength of lightweight concrete is 11,714 Mpa, splittting-tensile strength is 1,1495, modulus of elasticity is 6413,9725 MPa, and Poisson's ratio is 0,3241. Based on ACI 213R-87,this lightweight concrete is classified as moderate lightweight concrete.*