

ABSTRAK

Abstrak. Pertumbuhan kawasan terbangun menyebabkan berkurangnya daerah resapan air sehingga meningkatkan potensi genangan di kawasan perkotaan. Salah satu upaya untuk mengatasinya adalah menerapkan sumur resapan menggunakan beton ringan sistem interlocking. Penelitian ini bertujuan menganalisis pengaruh penggunaan batu apung sebagai agregat ringan terhadap kuat tekan beton dan kemampuan resapan air pada miniatur sumur resapan. Penelitian dilakukan secara eksperimental di laboratorium dengan variasi batu apung sebesar 0%, 15%, 25%, dan 35%. Pengujian meliputi karakteristik agregat, kuat tekan beton pada umur 7, 14, dan 28 hari, serta pengujian resapan air menggunakan miniatur sumur resapan. Hasil penelitian menunjukkan bahwa penambahan batu apung memengaruhi kuat tekan dan kemampuan resapan air beton. Variasi tanpa batu apung menghasilkan kuat tekan tertinggi sebesar 20,70 MPa pada umur 28 hari, sedangkan peningkatan persentase batu apung meningkatkan kemampuan resapan air, tetapi menurunkan kuat tekan beton. Beton ringan sistem interlocking berpotensi menjadi alternatif material sumur resapan yang mampu mendukung sistem drainase perkotaan melalui keseimbangan antara kekuatan struktur dan kemampuan infiltrasi air.

Kata kunci: Beton Ringan, Drainase Perkotaan, Interlocking, Kuat Tekan, Sumur Resapan

ABSTRAK

Abstrak. *The expansion of built-up areas has led to a reduction in water infiltration zones, thereby increasing the potential for flooding in urban areas. One approach to addressing this issue is to implement infiltration wells using an interlocking lightweight concrete system. This study aims to analyze the effect of using pumice as a lightweight aggregate on the compressive strength of concrete and the water infiltration capacity of miniature infiltration wells. The study was conducted experimentally in a laboratory with pumice content varying at 0%, 15%, 25%, and 35%. The testing included aggregate characteristics, concrete compressive strength at 7, 14, and 28 days, and water infiltration testing using miniature infiltration wells. The results showed that the addition of pumice affects both the compressive strength and water infiltration capacity of the concrete. The control mixture without pumice yielded the highest compressive strength of 20.70 MPa at 28 days, while increasing the pumice content improved water infiltration capacity but reduced the concrete's compressive strength. Interlocking lightweight concrete has the potential to serve as an alternative material for infiltration wells capable of supporting urban drainage systems through a balance between structural strength and water infiltration capacity.*

Keywords: *Lightweight Concrete, Urban Drainage, Interlocking, Compressive Strength, Soakaway Wells*