ANALISIS CAMPURAN BETON NON PASIR TERHADAP KUAT TEKAN, POROSITAS DAN PERMEABILITAS TERHADAP DESAIN LAHAN PARKIR

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Abstrak

Berbagai *inovasi* dilakukan terhadap beton guna menciptakan alternatif dari permasalahan berkurangnya daerah resapan air diakibatkan beton *konvensional* yang tidak dapat dilalui/ditembus air. Dari *inovasi* yang dilakukan tersebut diciptakan beton non pasir (*PorousConcrete / PerviousConcrete*). Karna beton non pasir merupakan jenis beton khusus dengan porositas tinggi yang memungkinkan air untuk cepat meresap dan menjadi air tanah. Cara ini efektif mengurangi genangan air dan menjaga daerah resapan sehingga mencegah terjadinya banjir serta menjaga ketersediaan air tanah. Selain dapat meresapkan air hujan melalui pori-pori yang terdapat pada beton, beton non pasir juga mampu menyaring air yang masuk ketanah sehingga kualitas air tanah menjadi meningkat (ACI 522R-10). Tujuan dari penelitian ini adalah untuk mengetahui proporsi campuran (agregat dan semen) beton non pasir yang optimum dan Mengetahui nilai kuat tekan, porositas dan permeabilitas beton non pasir.

Metode eksperimen dalam penelitian ini, dimaksudkan untuk mendapatkan pengaruh ratio perbandingan campuran (semen;agregat kasar) 1:3, 1;4, 1;5, 1;6, dan 1;7 dalam komposisi campuran pembutan beton non pasir terhadap kuat tekan, porositas dan permeabilitas pada beton non pasir, serta aplikasinya sebagai perkerasan lahan parkir.

Hasil penelitian yang diperoleh : Hasil kuat tekan beton non pasir tertinggi terdapat pada proporsi campuran (agregat dan semen) 1:3, dengan nilai kuat tekan 8,08 Mpa, dan hasil porositas tertinggi terdapat pada proporsi campuran (agregat dan semen) 1:7, dengan nilai porositas 30,67%, dan hasil permeabilitas tertinggi terdapat pada proporsi campuran (agregat dan semen) 1:7, dengan nilai permeabilitas 1,38 cm/dt.
Proporsi campuran beton non pasir yang optimum terdapat pada proporsi campuran (agregat dan semen) 1:6, dengan nilai kuat tekan dan porositas berturut-turut sebesar 6,87 dan 23,59%.

Kata Kunci : Kuat tekan, Porositas, Permeabilitas, Lahan Parkir

Pembimbing I	Pembimbing II
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ANALYSIS OF NON-SAND CONCRETE MIXING TOWARDS STRENGTH OF PRESS, POROSITY AND PERMEABILITY OF PARKING LAND DESIGN

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Abstract

Various innovations have been made to concrete in order to create an alternative to the problem of reducing water catchment areas caused by conventional impassable concrete. From this innovation, non-sand concrete (Porous Concrete / PerviousConcrete) was created. Because non-sand concrete is a special type of concrete with high porosity that allows water to quickly penetrate and become groundwater. This method is effective in reducing standing water and protecting catchment areas, thereby preventing flooding and maintaining the availability of ground water. Besides being able to absorb rainwater through the pores contained in the concrete, non-sand concrete is also able to filter water that enters the ground so that the quality of ground water increases (ACI 522R-10). The purpose of this study was to determine the optimum proportion of the mixture (aggregate and cement) of non-sand concrete and to know the compressive strength, porosity and permeability of non-sand concrete.

The experimental method in this study is intended to obtain the effect of the ratio of the mixture ratio (cement; coarse aggregate) 1: 3, 1; 4, 1; 5, 1; 6, and 1; 7 in the composition of the mixture of non-sand concrete making on compressive strength porosity and permeability in non-sand concrete, and its application as a parking lot pavement.

The results obtained: The results of the highest compressive strength of non-sand concrete are in the proportion of the mixture (aggregate and cement) 1: 3, with a compressive strength value of 8.08 MPa, and the highest porosity results are in the proportion of mixtures (aggregate and cement) 1: 7 , with a porosity value of 30.67%, and the highest permeability results were found in the proportion of the mixture (aggregate and cement) 1: 7, with a permeability value of 1.38 cm / s.

The optimum proportion of non-sand concrete mixture is in the proportion of mixture (aggregate and cement) 1: 6, with compressive strength and porosity values of 6.87 and 23.59%, respectively.

Keywords: Compressive strength, Porosity, Permeability, Parking Area

Pembimbing I	**Pembimbing II**
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