

Pengaruh pemakaian Portland Composite Cement (PCC) terhadap ketahanan sulfat pada Self Compacting Concrete (SCC)

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Abstrak

Skripsi ini membahas tentang pengaruh pemakaian Portland Composite Cement (PCC) terhadap ketahanan sulfat pada Self Compacting Concrete (SCC). Pada penelitian ini dilakukan uji kuat tekan, kuat tarik belah, kuat lentur dan permeabilitas pada metode perendaman air suling, air laut kadar sulfat 0.2%, larutan magnesium sulfat 5%, dan larutan magnesium sulfat 5% pasang surut pada umur 28, 42, dan 56 hari. Dari hasil penelitian didapatkan bahwa semakin besar kandungan sulfat dan semakin lama perendaman dalam sulfat, maka kekuatan beton yang diperoleh semakin menurun dan penetrasi semakin besar. Karena beton sensitif terhadap sulfat. Besar persentasi penurunan kuat tekan, kuat tarik belah, kuat lentur berurutan pada perendaman air laut sebesar 2.92%, 2.56%, -8.04%, pada larutan magnesium sulfat 5% sebesar 3.86%, 7.51%, -2.68%, pada larutan magnesium sulfat 5% sistem pasang surut sebesar 9.66%, 18.09%, 24.11%. Besar persentasi peningkatan penetrasi pada perendaman air laut sebesar 6.41%, dan pada perendaman larutan magnesium sulfat sebesar 6.41%.

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The focus of this study discusses about the effect of using Portland Composite Cement (PCC) to the sulphate resistance of Self Compacting Concrete (SCC). On this research, some tests were done to determine the concrete's compressive strength, splitting tensile strength, flexural strength and permeability of the immersion method of distilled water, sea water with 0.2% sulphate concentration, magnesium sulphate solution 5%, and tidal of magnesium sulfate solution 5% at 28, 42, and 56 days. The result showed that the larger the concentrate of sulphate and the longer the immersion of the concrete in sulphate solution, the strength of concrete obtained decreases and the concrete penetration increases. This happens because concrete is basically sensitive of sulphate. The reduction rate of compressive strength, splitting tensile strength, flexural strength respectively in sea water immersion for 2.92%, 2.56%, -8.04%, in the solution of magnesium sulphate are 5% of 3.86%, 7.51%, -2.68%, while in the solution of magnesium sulphate 5% with tidal of 9.66%, 18.09%, 24.11%. The increasing rate of the concrete penetration for the samples immersed in sea water is 6.41%, while the increasing rate for the samples immersed in solution of magnesium sulfate is 6.41%.