

Analisis Mix Design Beton Cara DOE (Inggris) dan ACI (Amerika)
(Agus Santoso)

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Abstract

This research was aimed to describe concrete mix design using British DOE and American ACI methods viewed from concrete compressive strength and cost per- m^3 . The mix design research used materials of sand and split from Krasak River, Nusanlara brand Portland cement, and ground water from Faculty of Engineering UNY. They were 10 samples each methods of (15 x 15 x 15) cm dimension. The data were collected by meant of experiment in the Laboratory of Building Materials, Faculty of Engineering, UNY, and analyzed descriptively. The results were that, to design concrete with K 225 characteristic, the DOE method required mix composition of PC : sand : split = 1 : 1,58 : 3,49 with slump = 13 cm, the average weight of concrete cubes = 8,066 kgs and characteristic of compressive strength = 263,1 kg/cm². The ACI method required mix composition of PC : sand : split = 1 : 2,24 : 3,12, with slump = 7cm (slightly over the design value), the average weight of concrete cubes = 8,215 kgs, and characteristic of compressive strength = 284,73 kg/cm². Based on the cost analysis, per-cube, the DOE method cost was Rp 215.906,- and the ACI method cost was Rp 195.791,-. From the analysis, in general the ACI method was more effective as well as efficient than DOE method.

Keywords: Concrete Mix designs Analysis.

PENDAHULUAN

Beton merupakan bahan bangunan yang dihasilkan dari campuran semen Portland, pasir, kerikil, dan air. Beton biasanya dipasang bersama-sama dengan batang baja sehingga disebut dengan beton bertulang. Pada saat ini sebagian besar bangunan

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