

## ABSTRAK

FENTI DAUD, Model Saluran Drainase Berpori Untuk Mereduksi Genangan Banjir Perkotaan (dibimbing oleh Mary Selintung, Muh. Saleh Pallu, Arsyad Thaha).

Penelitian ini bertujuan untuk (1) Melakukan analisis pengaruh tinggi muka air, kedalaman lubang pori, diameter lubang pori, tinggi tekanan dan koefisien permeabilitas tanah terhadap debit infiltrasi; (2) Menemukan model persamaan yang digunakan secara general dalam perencanaan saluran drainase berpori.

Jenis Penelitian ini adalah penelitian eksperimental laboratorium dengan skala model 1:1. Penelitian ini menggunakan sampel tanah sebagai media infiltrasi. Sampel tanah diambil berdasarkan tekstur tanah pada 3 titik pengamatan di Kota Makassar. Penelitian dilakukan di Laboratorium Hidrolika Jurusan Teknik Sipil Fakultas Teknik Universitas Hasanuddin.

Hasil penelitian ini menunjukkan parameter tinggi muka air, diameter lubang, kedalaman lubang, koefisien permeabilitas tanah berbanding lurus terhadap debit infiltrasi, dimana berdasarkan analisa dimensi diperoleh persamaan model empiris debit infiltrasi saluran drainase berpori  $q_{DP} = K_f q_{darcy}$  dimana  $K_f = 0,7302 \ln [k_2 k_1] [dhD(T-d)^3] + 5,1945$ .

Kata Kunci : Infiltrasi, Saluran drainase berpori

## ABSTRACT

FENTI DAUD, Porous Drainage Channel Model to Reduced Flood in Urban Area (supervised by Mary Selintung, Muh. Saleh Pallu, and Arsyad Thaha).

The study aims to describe the performance of porous drainage channel, observe the impact of the level of surface water, the depth of the pore hole, the hole diameter, the pressure height, and the soil permeability coefficient on the infiltration discharge, and seek for equation model is used in general to plan for porous drainage channel.

The study was laboratory experimental research with a model scale of 1:1 using oil sampel as infiltration media. Soil sampel were collected based on the soil texture from 3 observation spots in Makassar. The study was conducted in Hydraulic Laboratory of Civil Engineering Department of Faculty of Engineering, Hasanuddin University.

Result of the research showed the level of surface water, the depth of the pore hole, the hole diameter, the pressure height, and the soil permeability coefficient equivalent toward the infiltration discharge. The study indicates positive parameter influence on the infiltration debit. Based on non-dimensional analysis, an empirical equation of infiltration debit of porous drainage channel is  $qDP = Kf qdarcy$  in which

$$Kf = 0.7302 \ln [k_2 k_1] [dhD(T-d)^3] + 5.1945.$$

Key words :Infiltration, Pore drainage hole