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Evaluation of Road Drainage Capacity to Improve Optimized Road Performace in Kebon Pala Area East Jakarta

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Abstract

Road drainage function as important part that can control a large rainfall that caused puddles that often disturb the comfort of all community activities on the road. Condition of the drainage channel on the road Kebon Pala area, East Jakarta are not qualified due to mistake planning and lack of maintenance. Hence, it is necessary to evaluate the capacity of drainage channel on Road Perindustrian. The purpose of this study is to find the maximum amount of water flow that can be accommodated by drainage channels. Rain intensity was calculated using the Mononobe method, as well as the flow rate is calculated using the Rational method. The existing capacity of drainage dimensions are measured directly in the the field using Manning method for calculating flow velocity. The results obtain Q2yrs = 1.27mm/s, Q5yrs = 1.67mm/s, Q10yrs = 1.84mm/s, while Q channel 0.24mm/s. Thus, it can be concluded that capacity of road drainage channel is lower than Q rain that can not accommodate the existing rain flow.

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