

Advanced Properties of Continuously Graded Pervious Concrete for Rigid Pavement Base Layer

Frisky Ridwan Aldila Melania Care^{1,*}, Bambang Sugeng Subagio¹, Harmein Rahman¹,
Raden Anwar Yamin²

¹Faculty of Civil Engineering and Environment, Bandung Institute of Technology, Bandung, Indonesia

²Centre of Research and Develop Road ment for s and Bridges, Ministry of Public Works and Housing, Bandung, Indonesia

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Abstract

According to previous studies, a pervious concrete using continuously graded aggregate gives a better strength and approaches the condition of aggregate gradation on the field. The aim of this research is to study a pervious concrete mix-design for Indonesian Specification input category using continuously graded pervious concrete as an alternative rigid pavement base layer. Some advanced properties are applied to represent the required criteria for pavement base layer, i.e. elastic modulus, Poisson's ratio, flexural strength, horizontal permeability, heterogeneity level, and dynamic elastic modulus. It is found that the pervious concrete with continuously graded tends to be more physically elastic when compared to normal concrete and has a better endurance against elastic deformation rather than normal concrete. Its static elastic modulus has a better relationship with horizontal permeability than flexural strength. Overall, five mix-designs have been successfully met the advanced properties criteria for rigid pavement base layer required by the Specification.

Keywords: pervious concrete, continuously graded aggregate, rigid pavement base layer, advanced properties

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* Corresponding author. E-mail address: friskyranc@gmail.com

Tel.: +62 82118533386

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