

# **Effect on the Hardness Paving Block by Adding Gomuti and Pumice Stone**

**Zainur Rochman**

BEng (Hons) Civil Engineering

Universitas Narotama

Jalan Klampis Semalang VII No.33, Surabaya 60117, Indonesia

[zainur.roc@pjm-group.com](mailto:zainur.roc@pjm-group.com)

**H. Sri Wiwoho Mudjanarko ST., MT.**

Pro-Vice Chancellor

Universitas Narotama

Jalan Klampis Semalang VII No.33, Surabaya 60117, Indonesia

[sri.wiwoho@narotama.ac.id](mailto:sri.wiwoho@narotama.ac.id)

**Dani Harmanto**

Research for Advanced Design and Simulation

University of Derby

Derby, DE22 3AW, United Kingdom

[d.harmanto@derby.ac.uk](mailto:d.harmanto@derby.ac.uk)

## **Abstract**

Paving block is a cement product and been used as the alternative of asphalt. It has been used intensively for parking area, village road and so on in Indonesia. Paving block is also known as concrete block or conblock. Absorption of water to paving block installation system can maintain ground water balance and strongly support go green. It is also echoed nationally as well as internationally. This research will test the compressive strength of paving block considering the paving block function must also be able to support the heavy load on it beside the good absorption. The development and test will be using two types. First, it will be added the fibers of gomuti 3% and pumice stone 10% with additional aggregate 1.5% sikament additive. The second one will be the same but increasing the pumice stone to 20%. This research is expected to get paving block wearing high and light.

## **Keywords**

Paving block, Aggregate, Pumice stone, Gomuti, Green Block

## **Biographies**

Zainur Rohman was a student at Universitas Narotama studying Undergraduate in Civil Engineering. His interest is on the construction, alternative material and Paving block.

Dr.Dani Harmanto is currently the acting programme leader (course director) of BEng (Hons) Motorsport Engineering and senior lecturer in automotive Engineering at University of Derby. He had secured number of funding from UK and Local government for knowledge transfer partnership for developing a novel product. He obtained his mechanical engineering degree from ITN Malang, Indonesia. His MSc and PhD in Automotive Engineering from Coventry University, United Kingdom. He is also a Chartered Engineer (CEng). He is sitting in the committee of Education and Training at Institution of Engineering Designer (IED), United Kingdom as a member. He is also a member of the Automobile division at the Institution of Mechanical Engineering (IMechE),

United Kingdom. In addition to this, he is a Fellow Member of Higher Education (FHEA) in the UK. He is mainly teaching at undergraduate and master level (Thermofluids, CFD, FEA and Design). His main research interests include computational fluid dynamics, finite element analysis, and renewable energy. His current research concerns the reduction of the jet noise using Computational Fluid Dynamics with one of the world announce jet engine manufacturer. He is a member of reviewers for Proceeding of Institution Mechanical Engineering part A – Z and several other journal publications.

Dr, Sri Wiwoho is a Pro Vice chancellor and also the head of the research at Universitas Narotama Surabaya. He graduated from Surabaya Institute of Technology on the transportation solution. His interest is on the development of new material for the road and also the transportation solution