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KARYA ILMIAH : PROSIDING**

|   |   |   |
|---|---|---|
| Judul Karya Ilmiah  | : | Towards a competitive traditional market through infrastructure performance and redefinition categories: A case in Semarang City  |
| Jumlah Penulis  | : | 3 Orang (Ferry H, Ismiyati, Himawan I)  |
| Status Pengusul   | : | Penulis kedua   |
| Identitas Prosiding   | : | <p>a. Judul Prosiding : Matec Web Conference Volume 195, 2018<br/>The 4th International Conference on Rehabilitation and Maintenance in Civil Engineering (ICRMCE 2018), Pages 1-6</p> <p>b. ISBN/ISSN : 2261-236X</p> <p>c. Thn Terbit, Tempat Pelaks. : Tahun 2018, Solo Baru, 11-12 July 2018</p> <p>d. Penerbit/Organiser : EDP Sciences</p> <p>e. Alamat Repository/Web : <a href="https://www.matecconferences.org/articles/matecconf/abs/2018/54/matecconf_icrmce2018_06014/matecconf_icrmce2018_06014.html">https://www.matecconferences.org/articles/matecconf/abs/2018/54/matecconf_icrmce2018_06014.html</a></p> <p>f. Terindeks di (jika ada) : <a href="https://www.matecconferences.org/articles/matecconf/pdf/2018/54/matecconf_icrmce2018_06014.pdf">https://www.matecconferences.org/articles/matecconf/pdf/2018/54/matecconf_icrmce2018_06014.pdf</a></p> |
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Secara umum kemutahiran data cukup, ada 9 (sembilan) dari 13 (tiga belas) pustaka 5 tahun terakhir dan Metodologi cukup baik

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Semarang,  
Reviewer 1

  
Prof. Dr. Ir. Sriyana, M.S.

NIP. 196006021986021001

Unit Kerja: Departemen Teknik Sipil FT UNDIP

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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*  
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3. **Kecukupan dan kemutahiran data/informasi dan metodologi:**

Kecukupan informasi terutama dalam hal jumlah responden / sampel pasar yang diambil kurang detail dijelaskan karena hanya menyebutkan situasi pasar di Semarang tanpa ada kuantitatif pasar yang diambil.

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Kelengkapan unsur dan kualitas terbitan cukup baik dan lengkap, diantaranya ada scientific committee, committee, peserta tidak kurang dari 5 negara perwakilan

Semarang,  
Reviewer 2

Dr.Yulita Arni Priastiwi, S.T., M.T.  
NIP. 197107231998022001  
Unit Kerja : Departemen Teknik Sipil FT UNDIP



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4th International Conference on Rehabilitation and Maintenance in Civil Engineering, ICRMCE 2018; Best Western Solo Baru Solo Baru; Indonesia; 11 July 2018 through 12 July 2018;  
Code 138852

## Towards a competitive traditional market through infrastructure performance and redefinition categories : A case in Semarang city

(Conference Paper) [\(Open Access\)](#)

Hermawan, F. Ismiyati, I., Indarto, H.

Department of Civil Engineering, Diponegoro University, Prof. Sudharto, SH Street, Tembalang, 50275, Indonesia

### Abstract

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The revitalization of the Indonesian Traditional Market has prolonged problems, becoming a never-ending story, particularly in public building standards in the last decade. A competitive traditional market is public need, where the affordable prices and infrastructure are the central consideration. This research aims to figure out the current condition of the Indonesian Traditional Market and the needs of future policy towards a competitive environment of the marketplace in a metropolitan city context. However, Western culture has been mixed into the current management of the Indonesian Traditional Market. The insight of the ideal traditional market for the metropolitan city, as well as Semarang, is the standard from Indonesian public market guidance and a lesson learned from other countries. This research was conducted between 2014-2017. A case study method was applied, using semistructured interviews, document investigation of Detailed Engineering Design (DED) and field observation of registered traditional markets in Semarang. The results will determine the current implementation of Traditional Market standards in Semarang. The infrastructure performance and redefinition category among marketplaces are suggested as a consideration toward the competitive traditional market on public building policy. © The Authors, published by EDP Sciences, 2018.

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| <p><input type="checkbox"/> 4 Nugroho, B.A.A., Herbasuki, N.<br/>(2014) <i>Jurnal Fakultas Ilmu Sosial Dan Ilmu Politik Universitas Diponegoro</i>, 3.</p>   |                |         |  |
| <p><input type="checkbox"/> 5 Anggraini, G., Amalia, D.<br/>(2016) <i>Final-Project, Department of Civil Engineering</i>. Cited 2 times.<br/>Diponegoro University, Indonesia</p>                    |                |         |  |
| <p><input type="checkbox"/> 6 Hermawan, F.<br/>(2015)<br/>PhD Thesis, Coventry University, UK</p>  |                |         |  |
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| <p><input type="checkbox"/> 8 Rizal, R.M., Alhamidi, N.R.<br/>(2017) <i>Final-Project, Department of Civil Engineering</i>. Cited 2 times.<br/>Diponegoro University, Indonesia</p>                  |                |         |  |

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Attacking Distribution: Obsolescence and Efficiency of Food Markets in the Age of  
Urban Renewal  
(2014) *Journal of Planning History*, 13 (2), pp. 136-159. Cited 5 times.  
<http://jph.sagepub.com/>  
doi: 10.1177/1538513213507540

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# CERTIFICATE OF RECOGNITION

is hereby awarded to :

Ferry Hermawan

in recognition of valuable contribution as

**Author**

entitled

**Towards Competitive Traditional Market through Infrastructure Performance and Redefinition Categories: A Case in Semarang City**



**July, 11-12 2018 Solo, Indonesia**

For participating in the

**4<sup>th</sup> International Conference on Rehabilitation and Maintenance in Civil Engineering**



Dr. (techn) Sholihin As'ad  
Dean of Engineering Faculty UNS



Yusep Muslih Purwana, Ph.D.  
Chairman of 4<sup>th</sup> CRMCE

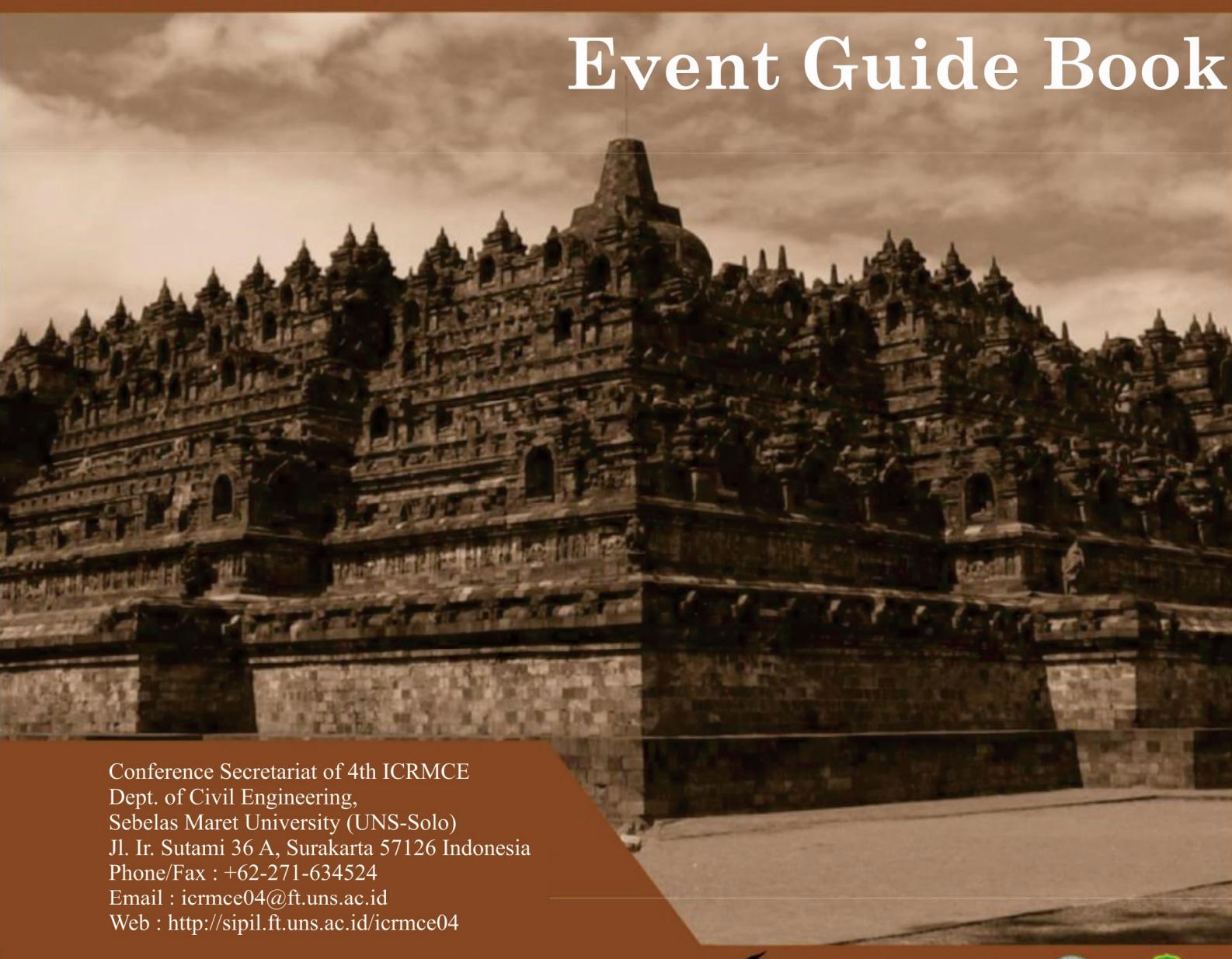
# 4<sup>th</sup> International Conference on Rehabilitation and Maintenance in Civil Engineering (ICRMCE)

Best Western Solo Baru  
July, 11-12 2018



## “Smart Rehabilitation and Maintenance in Civil Engineering for Sustainable Construction”

## Event Guide Book



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## ***CONTENTS***

|   |    |
|---|----|
| Front Pages                                       | 2  |
| Preface by the Chairman of 4 <sup>th</sup> ICRMCE | 3  |
| Committee   | 5  |
| Contents  | 7  |
| Event Schedule                                    | 8  |
| Class Division                                    | 11 |
| Venue Floor Plan: 1st Floor Layout                | 24 |
| Venue Floor Plan: 1st Floor Detail                | 25 |
| Venue Floor Plan: 2nd Floor Layout                | 26 |

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**Kenichiro Nakrai**

Graduate School of Engineering, Hiroshima University, Japan

[more ...](http://seeds.office.hiroshima-u.ac.jp/profile/en.82b745276185148e520e17560c007669.html)



**Masyhur Irsyam**

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**Mohammad Bin Ismail**

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## The 4th ICRMCE and FIB Indonesia Mini **Symposium on Concrete Structures**; Past Achievement, Current Issues and Future Development

A mini symposium will be convened by FIB-Indonesia, a group of concrete scientists and engineers in Indonesia, in conjunction with the 4th International Conference on Rehabilitant and Maintenance in Civil Engineering held by collaboration of several university in Indonesia and worldwide. The theme of the mini symposium will be on Concrete Structures; Past Achievement, Current Issues and Future Development. It addresses the legacy, the state of the arts and practices of concrete structures as well as the challenge concrete industry is facing in the future.

more... (<http://sipil.ft.uns.ac.id/icrmce04/index.php/minis/view>)

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  - 38. Bambang Hariadi, Universitas Negeri Semarang, Indonesia
  - 39. Bambang Riyanto, Universitas Diponegoro, Indonesia
  - 40. Buan Anshari, Universitas Mataram, Indonesia
  - 41. Buntara S. Gan, Nihon University, Japan
  - 42. Dewi Handayani, Sebelas Maret University (UNS), Indonesia
  - 43. Didi Agustawijaya, University of Mataram, Indonesia
  - 44. Ferry Hermawan, Diponegoro University ,Indonesia
  - 45. Florentina P. Pramesti, Sebelas Maret University (UNS), Indonesia
  - 46. Gito Sugiyanto, Universitas Jenderal Soedirman, Indonesia
  - 47. Gusfan Halik, Universitas Jember, Indonesia
  - 48. Harijanto Setiawan, Universitas Atma Jaya Yogyakarta, Indonesia
  - 49. Ilham Nurhuda, Diponegoro University Semarang, Indonesia
  - 50. Ismiyati Ismiyati, Diponegoro University, Indonesia
  - 51. Januarti Ekaputri, ITS Surabaya, Indonesia
  - 52. Jati Hatmoko , Universitas Diponegoro, Indonesia
  - 53. Jauhar Fajrin, Universitas Mataram, Indonesia
  - 54. Junaedi Utomo, Universitas Atma Jaya Yogyakarta, Indonesia
  - 55. Mochamad Wibowo, Diponegoro University Semarang, Indonesia
  - 56. Mokhammad Farid Ma'ruf, Universitas Jember, Indonesia
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  - 58. Nursetiawan, Universitas Muhammadiyah Yogyakarta, Indonesia
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  - 61. Senot Sangadji, Sebelas Maret University (UNS), Indonesia
  - 62. Sri Wahyuni, University of Jember, Indonesia
  - 63. Syafii, Sebelas Maret University (UNS), Indonesia
  - 64. Purwanto Santoso, Universitas Jenderal Soedirman, Indonesia
  - 65. Yanto, Universitas Jenderal Soedirman, Indonesia
  - 66. Yusep Muslih Purwana, Sebelas Maret University (UNS), Indonesia

[All issues](#) ▶ Volume 195 (2018)

[◀ Previous issue](#)
[Table of Contents](#)
[Next issue ▶](#)

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## MATEC Web of Conferences

Volume 195 (2018)

### The 4<sup>th</sup> International Conference on Rehabilitation and Maintenance in Civil Engineering (ICRMCE 2018)

Solo Baru, Indonesia, July 11-12, 2018

P. Hajek, A.L. Han, S. Kristiawan, W.T. Chan, M.b. Ismail, B.S. Gan, R. Sriravindrarajah and B.A. Hidayat (Eds.)

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[PDF \(3.64 MB\)](#)
[▼ Construction Materials](#)  
[▼ Structural Engineering](#)  
[▼ Geotechnical Engineering](#)
[▼ Transportation Engineering](#)  
[▼ Hydrologic Engineering](#)  
[▼ Construction Management and Maintenance](#)
 Open Access

[Preface](#) 00001

Published online: 22 August 2018

 DOI: <https://doi.org/10.1051/matecconf/201819500001>
[PDF \(83.21 KB\)](#)

#### - Construction Materials

 Open Access

[Advanced high-performance concrete structures - challenge for sustainable and resilient future](#) 01001

[Petr Hajek](#)

Published online: 22 August 2018

 DOI: <https://doi.org/10.1051/matecconf/201819501001>
[PDF \(612.5 KB\)](#) | [References](#)
 Open Access

[Waterproofing practices in Australia for building construction](#) 01002

[Rasiah Sriravindrarajah and Elizebeth Tran](#)

Published online: 22 August 2018

 DOI: <https://doi.org/10.1051/matecconf/201819501002>
[PDF \(738.9 KB\)](#) | [References](#)

OK

 Open Access

[Proposed concrete compaction method using an electrical internal vibrator: a review of compaction standard for concrete in laboratory according to SNI 2493:2011](#) 01003

[Agus Maryoto](#)

Published online: 22 August 2018

 DOI: <https://doi.org/10.1051/matecconf/201819501003>
[PDF \(828.7 KB\)](#) | [References](#)
 Open Access

[Microscopic investigation on concrete cured internally by using porous ceramic roof-tile waste aggregate](#) 01004

[Azusa Shigeta, Yuko Ogawa and Kenji Kawai](#)

Published online: 22 August 2018

 DOI: <https://doi.org/10.1051/matecconf/201819501004>
[PDF \(514.3 KB\)](#) | [References](#)
 Open Access

# Advanced high-performance concrete structures – challenge for sustainable and resilient future

Petr Hajek<sup>1,\*</sup>

<sup>1</sup>Czech Technical University in Prague, Faculty of Civil Engineering, 166 29 Prague 6, Thakurova 7,  
Czech Republic

**Abstract.** Development and recent changes in natural and socio-economic environment requires new technical solutions for construction of new and reconstruction and modernization of existing structures. Structures and all built environment should be better prepared for new conditions – they should be sustainable and resilient. Concrete is building material with high potential for new technical solutions resulting in needed environmental impact reduction and consequent social and economic improvements. The paper presents potential contribution of concrete industry, advanced high-performance concrete and concrete structures to Sustainability Development Goals specified in UN 2030 Agenda for Sustainable Development and presents basic principles of implementation of sustainability approach into design of concrete structures and particularly to fib Model Code 2020.

## 1 Introduction

### 1.1 World is changing

Considering scale line - one year for entire life of the Earth - the human civilization exists only last 90 seconds and RC structures are used in last one second. Earth existed long before humans developed on the Earth and will exist long after the conditions on the Earth will not be suitable for human life. Sustainability is about preservation of environmental, social and economic conditions on our planet in the form which will enable survival of humans on the Earth as long as possible [1]. The question raised in this paper is how concrete, as the second most used material after water and the most used construction material, can help in this process.

Changing of the climate on the Earth is innate and everlasting process; environmental conditions are continuously changing due to continental drift followed by volcanic, seismic effects and due to man-made impacts. Human life conditions for life are modified – and as a consequence biodiversity is irrecoverably changed. This process was in previous periods very slow, enabling consecutive adaptation of life forms (incl. humans) to changing

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\* Corresponding author: [petr.hajek@fsv.cvut.cz](mailto:petr.hajek@fsv.cvut.cz)

# Waterproofing practices in Australia for building construction

Rasiah Sriravindrarajah<sup>1,\*</sup> and Elizebeth Tran<sup>1</sup>

<sup>1</sup>CBIR, School of Civil and Environmental Engineering, University of Technology Sydney, Australia

**Abstract.** Waterproofing is an essential component in building construction to maintain the integrity of buildings with reduced maintenance cost. A comprehensive waterproofing system is an integrated combination of factors, and includes product selection, membrane detail, substrate preparation, design, installation and maintenance. It is designed to work under different environmental conditions, substrates and applications. Proper understanding of the issues related to waterproofing membrane systems is important to minimise the waterproofing failures in both commercial and residential buildings. This paper aims to discuss Standards and Codes; membrane systems and performance, waterproofing practices, design and installation techniques, inspection and testing and quality assurance adopted by the waterproofing industry in Australia.

## 1 Introduction

Waterproofing is a fundamental and vital construction activity to maintain the integrity of both commercial and residential buildings over its service life. It minimises the post-completion problems mainly caused by water damages such as mould growth and rusting. A comprehensive waterproofing system is an integrated combination of factors, includes product selection, membrane detail, drainage design, substrate preparation, design, installation, quality assurance and maintenance. The advancements in technology have led to the development of various waterproofing membrane systems, namely liquid, sheet and spray-applied membranes. Each of these systems has its advantages and disadvantages. This paper aims to discuss Standards and Codes; membrane systems and performance, waterproofing practices, design and installation techniques, inspection and testing and quality assurance adopted by the waterproofing industry in Australia.

## 2 Standards and building codes in Australia

AS3740 [1] (Waterproofing of domestic wet areas) and AS4654.1/2 [2, 3] (Waterproofing membrane systems for exterior use) are current Australian standards used by the building and construction industry in Australia. AS4654.1 [2] lists the conditions and requirements that membranes will be subjected to test its durability. This includes time, humidity, water

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\* Corresponding author: [Sri.Ravindrarajah@uts.edu.au](mailto:Sri.Ravindrarajah@uts.edu.au)

# Microscopic investigation on concrete cured internally by using porous ceramic roof-tile waste aggregate

Azusa Shigeta<sup>1</sup>, Yuko Ogawa<sup>1</sup>, and Kenji Kawai<sup>1\*</sup>

<sup>1</sup>Department of Civil and Environmental Engineering Graduate School of Engineering, Hiroshima University, 1-4-1 Kagamiyama, Higashi-Hiroshima, Hiroshima, Japan

**Abstract.** Porous ceramic roof-tile waste aggregate (PCA), which is a recycled material, is an effective internal curing material for concrete. Part of the aggregate is replaced with saturated internal curing material to supply internal water into the cement paste continuously. Internal water is effective to promote the hydration of cement paste, especially in concrete with a low water-to-cement ratio because external curing water cannot easily reach inside the concrete. It has been reported that PCA leads to an increase in compressive strength and the reduction of autogenous shrinkage of concrete. However, the effects of PCA in previous researches are different with regards to the experimental conditions and have not been evaluated sufficiently. Therefore, the present study aims to investigate the effect of internal water supplied from PCA microscopically. In the experimental program, a compressive strength test was conducted for 6 types of concrete with a W/C of 0.35. The microhardness around the aggregate in the concrete was also measured to investigate the extent of the influence of the internal water supply. The results showed the possibility that microhardness of ITZ around PCA is improved by internal curing water supply and the compressive strength of concrete is also improved by using PCA.

## 1 Introduction

Generally, curing is conducted for concrete immediately after casting in a humid environment in order to promote the hydration of cement paste. However, external curing water cannot reach the inside of concrete sufficiently, especially in concrete with a low water to cement ratio (W/C) because the surface part of such a type of concrete is dense. To compensate for such a problem, internal water curing is effective to promote hydration. Internal curing is a curing method in which part of the aggregate is replaced with saturated internal curing material to supply internal water into the cement paste continuously. In concrete, capillary water is consumed for hydration of

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[PDF \(381.4 KB\)](#) | [References](#) Open Access**Strength development of cement-treated sand using different cement types cured at different temperatures** 01006

Lanh Si Ho, Kenichiro Nakarai, Kenta Eguchi, Takashi Sasaki and Minoru Morioka

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Takumi Nishiwaki, Shaojun Zhou, Masaharu Yamasaki, Yuko Ogawa and Kenji Kawai

Published online: 22 August 2018

DOI: <https://doi.org/10.1051/matecconf/201819501007>[PDF \(395.2 KB\)](#) | [References](#) Open Access**Mechanical properties of concrete composed of sintered fly ash lightweight aggregate** 01008

Puput Risdanareni, Januarti Jaya Ekaputri, Ike Maulidiyawati and Poppy Puspitasari

Published online: 22 August 2018

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Agus Maryoto and Gathot Heri Sudibyo

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DOI: <https://doi.org/10.1051/matecconf/201819501009>[PDF \(405.6 KB\)](#) | [References](#) Open Access**The influence of molarity variations to the mechanical behavior of geopolymers concrete** 01010

Purwanto, Ay Lie Han, Nuroji and Januarti Jaya Ekaputri

Published online: 22 August 2018

DOI: <https://doi.org/10.1051/matecconf/201819501010>[PDF \(566.6 KB\)](#) | [References](#) Open Access**The effect of additional aluminium to the strength of geopolymers paste** 01011

Aulia Rahman and Januarti Jaya Ekaputri

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DOI: <https://doi.org/10.1051/matecconf/201819501011>[PDF \(415.2 KB\)](#) | [References](#) Open Access**Effects of microbial agents to the properties of fly ash-based paste** 01012

Kiki Dwi Wulandari, Januarti Jaya Ekaputri, Triwulan, Chikako Fujiyama and Davin H. E. Setiamarga

Published online: 22 August 2018

DOI: <https://doi.org/10.1051/matecconf/201819501012>[PDF \(944.4 KB\)](#) | [References](#) Open Access**Microstructure and mechanical properties of FA/GGBS-based geopolymers** 01013

Apriany Saludung, Yuko Ogawa and Kenji Kawai

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DOI: <https://doi.org/10.1051/matecconf/201819501013>[PDF \(2.117 MB\)](#) | [References](#)

OK

 Open Access**Repair of rigid pavement using micro concrete material** 01014

Jonbi Jonbi, A. R. Indra Tjahjani, Nuryani Timumbia, A. M. Pattinaja and Bambang S. Haryono

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DOI: <https://doi.org/10.1051/matecconf/201819501014>[PDF \(764.4 KB\)](#) | [References](#) Open Access**Evaluation of bond strength between normal concrete and high performance fiber reinforced concrete (HPFRC)** 01015

Nur Adibah Ayuni Abd Malek, Khairunnisa Muhamad, Mohd Zulham Affandi Mohd Zahid, Nur Ain Hamiruddin, Norrazman Zaiha Zainol, Norhaizura Yahya, Nurulashikin Bahaman and Nurfarahseen Mohd Ramli

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DOI: <https://doi.org/10.1051/matecconf/201819501015>[PDF \(1011 KB\)](#) | [References](#) Open Access**Slant shear strength of fibre reinforced polyvinyl acetate (PVA) modified mortar** 01016

Stefanus Kristiawan, Bambang Santosa, Edy Purwanto and Rachmad A. Caesar

Published online: 22 August 2018

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# Strength development of cement-treated sand using different cement types cured at different temperatures

Lanh Si Ho<sup>1,2</sup>, Kenichiro Nakarai<sup>2,\*</sup>, Kenta Eguchi<sup>2</sup>, Takashi Sasaki<sup>3</sup>, and Minoru Morioka<sup>3</sup>

<sup>1</sup>Geotechnical Engineering and Artificial Intelligence research group (GEOAI), University of Transport Technology, 54 Trieu Khuc, Thanh Xuan, Hanoi, Vietnam

<sup>2</sup>Hiroshima University, Department of Civil and Environmental Engineering, Graduate School of Engineering, 1-4-1, Kagamiyama, Higashi-Hiroshima, Hiroshima 739-527, Japan

<sup>3</sup>Denka Co., Ltd., Cement & Special Cement Additives Research Dept., Omi Plant, 2209 Oaza Omi, Itoigawa, Niigata 949-0393, Japan

**Abstract.** This study aimed to investigate the strength development of cement-treated sand using different cement types: ordinary Portland cement (OPC), high early strength Portland cement (HPC), and moderate heat Portland cement (MPC) cured at different temperatures. The cement-treated sand specimens were prepared with 8% of cement content and cured under sealed conditions at 20°C and 40°C, and mortar specimens were also prepared for reference. The results showed that the compressive strength of cement-treated sand increased in order of MPC, OPC, and HPC under high curing temperatures. It was interesting that the compressive strength of the specimens using HPC was much larger than that of the specimen using OPC and MPC under 20°C due to the larger amount of chemically bound water. Additionally, it was revealed that under high curing temperatures, the pozzolanic reaction was accelerated in the cement-treated sand; this may be caused by the high proportions of sand in the mixtures.

**Keywords:** Cement-Treated Sand, Compressive Strength, Cement Types, Curing Temperatures, Cement Hydration, Pozzolanic Reaction.

## 1 Introduction

Cement-treated soils have been applied popularly for soft soil improvement, especially for the deep mixing method. It is known that the compressive strength of cement-treated soils is considered an important indicator to characterize soil behavior [1-3]. The strength development of cement-treated soils is governed by many factors such as conditions of soil, mixing, and curing [4]. In terms of curing conditions, the curing temperature is an important factor that affects the strength development of cement-treated sand. With regards to the deep mixing method, large columns of cement-treated soils are usually used. A previous study on the temperature history of field deep mixing columns revealed that the

\* Corresponding author: [nakarai@hiroshima-u.ac.jp](mailto:nakarai@hiroshima-u.ac.jp)

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**The use of grinded andesite-sand and foaming-agent to improve the porosity of foam-concrete** 01018

Rommel Erwin, Rusdianto Yunan, Dawara Kiki Ruris and Eddy S Tri

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[PDF \(1.094 MB\)](#) | [References](#)

---

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**A comparative analysis of the quality of concrete blocks produced from coconut fibre, oil palm empty fruit bunch, and rice husk as filler material** 01019

Mohammad Lutfi, Muh Yamin, Mujib Rahman and Elisa Ginsel Popang

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DOI: <https://doi.org/10.1051/matecconf/201819501019>

[PDF \(686.5 KB\)](#) | [References](#)

---

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**Effect of added the polycarboxylate ether on slump retention and compressive strength of the high-performance concrete** 01020

Jonbi Jonbi, Resti Nur Arini, Basori Anwar and Mohamad Ali Fulazzaky

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DOI: <https://doi.org/10.1051/matecconf/201819501020>

[PDF \(370.8 KB\)](#) | [References](#)

---

 Open Access

**The influence of OPC and PPC on compressive strength of ALWA concrete** 01021

Fedya Diajeng Aryani, Tavio, I Gusti Putu Raka and Puryanto

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DOI: <https://doi.org/10.1051/matecconf/201819501021>

[PDF \(512.9 KB\)](#) | [References](#)

---

 Open Access

**A preliminary study of the low density particle boards quality using rice husks and oil palm empty fruit bunch with plastic waste adhesive** 01022

Muh. Yamin, Rudito, Andi Lisnawati and Mohammad Lutfi

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[PDF \(702.4 KB\)](#) | [References](#)

---

 Open Access

**Characterization and compressive strength of fly ash based-geopolymer paste** 01023

Ari Widayanti, Ria Asih Aryani Soemitra, Hitapriya Suprayitno and Januarti Jaya Ekaputri

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DOI: <https://doi.org/10.1051/matecconf/201819501023>

[PDF \(997.6 KB\)](#) | [References](#)

---

 Open Access

**The effect of addition of banana tree bark for compressive strength and crack tensile strength of rice husk ash concrete** 01024

Muhammad Rizqi, Hernu Suyoso and Gati Annisa Hayu

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[PDF \(516.3 KB\)](#) | [References](#)

---

 Open Access

**Experimental study of accelerating early age concrete strength under elevated temperature, steaming, and chemical admixture addition of normal and high strength concrete** 01025

Suryawan Murtiadi, Akmaluddin Akmaluddin, Buan Anshari and Suparjo Suparjo

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OK

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Aylie Han, Buntara S. Gan and Agung Budipriyanto

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---

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I Ketut Sudarsana

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Jauhar Fajrin and Nasmi Herlina Sari

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Rendy Thamrin

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Hotma Panggabean and Nicxon Pakpahan

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Taufiq Ilham Maulana, Hakas Prayuda, Bagus Soebandono, Martyana Dwi Cahyati and Eva Hanifatu Zahra

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Yanuar Setiawan, Ay Lie Han, Buntara Sthenly Gan and Junaedi Utomo

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Hakas Prayuda, Robbi'al Rollyas Syandy, Bagus Soebandono, Taufiq Ilham Maulana and Martyana Dwi Cahyati

Published online: 22 August 2018

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Windu Partono, Masyhur Irsyam, Indrastono Dwi Atmanto, Andi Retno Ari Setiaji, Sigit Purnomo and Robby Yanuar Setiawan

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OK

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Junaeedi Utomo and Antonius

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# One-way translational magnetic mass damper model for structural response control against dynamic loadings

*Nurulashikin Bahaman<sup>1,\*</sup>, Sk Muiz Sk Abdul Razak<sup>1</sup>, Azlan Adnan<sup>2</sup>, Norrazman Zaiha Zainol<sup>1</sup>, Norhaizura Yahya<sup>1</sup>, Khairunnisa Muhamad<sup>1</sup>, Ahmad Nurfaidhi Rizalman<sup>3</sup>, Mazizah Ezziani Mohamad<sup>4</sup>, and Nur Adibah Ayuni Abd Malek<sup>1</sup>*

<sup>1</sup>Civil Engineering Technology Department, Faculty of Civil Engineering Technology, Universiti Malaysia Perlis (UniMAP), 02100 Sg. Chuchuh, Padang Besar, Perlis, Malaysia.

<sup>2</sup>Engineering Seismology & Earthquake Engineering Research (e-SEER), Institute of Noise & Vibration, Universiti Teknologi Malaysia, UTM, 81310 Skudai, Johor, Malaysia.

<sup>3</sup>Civil Engineering Programme, Faculty of Engineering, UMS, 88899 Kota Kinabalu, Sabah, Malaysia.

<sup>4</sup>Department of Civil Engineering, School of Engineering & Technology, University College of Technology Sibu, 96000 Sibu, Sarawak, Malaysia.

**Abstract.** Structural responses should be reduced to minimize the consequent structural damage caused by dynamic excitation. The one-way translational magnetic mass damper model is developed as a new type of damper for the purpose of structural response control. The damper utilizes the concept of repulsive force between magnets with same poles to create a magnetic force to stabilize or bring the structure back to its original position. The dynamic performance of the structure was tested using a harmonic shaking table. In this study, the three parameters used are excitation speeds: 2.5V (low), 6.0V (medium) and 8.5V (high); strength of magnets: weak (N35), medium (N45) and strong (N52); and the mass in the damper: 40 g, 101 g and 162 g. The correlations of the parameters towards the structural displacement are verified in the testing. The displacement is highly reduced up to 100% at the first level and 85.2% at the fifth level. The most optimum structural response control was attained when a strong magnetic strength and mass of 162 g are used. When tested with three excitation speeds; 2.5V, 6.0V and 8.5V, the damper with this setting provides the optimum damping effect towards the structure in terms of displacement.

## 1 Introduction

Dynamic loading is an external force exerted in certain amounts on a structure upholding them. The occurrence of dynamic loading or synonymously known as dynamic excitation

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\* Corresponding author: [nurulashikinbahaman@gmail.com](mailto:nurulashikinbahaman@gmail.com)

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DOI: <https://doi.org/10.1051/matecconf/201819502016>  
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- 
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Isyana Ratna Hapsari, Senot Sangadjie and Stefanus Adi Kristiawan  
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