

BUKTI KORESPONDENSI

JUDUL ARTIKEL: IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA)
IN THE CEMENT INDUSTRY IN INDONESIA

Urutan File

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[Jurnal Teknologi] Submission Acknowledgement "IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE GREEN CEMENT INDUSTRY IN INDONESIA: THE GREEN CEMENT INDUSTRY IN INDONESIA"

Editor-in-Chief <journal_utm@utm.my>
To: Herliati Rahman <herliatimulyono@gmail.com>

25 November 2022 at 13:05

Dear Herliati Rahman:

2. Thank you for submitting the manuscript, "**IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE GREEN CEMENT INDUSTRY IN INDONESIA: THE GREEN CEMENT INDUSTRY IN INDONESIA**" to **Jurnal Teknologi**. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Manuscript URL: <https://journals.utm.my/jurnalteknologi/authorDashboard/submission/19546>
Username: **herliati**
#19546

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4. Your submitted article will undergo several repetitive reviewing processes. We will also be using Turnitin to check your article for plagiarism. If you have any questions or request to remove the article from the Turnitin database, please contact me or email to journal_utm@utm.my.

Thank you for considering this journal as a venue for your work.

Warm regards;
Editor-in-Chief

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Herliati Rahman <herliatimulyono@gmail.com>

[Jurnal Teknologi] Editor Decision (RR) "IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE GREEN CEMENT INDUSTRY IN INDONESIA"

Prof. Dr. Norhazilan Md Noor <journal_utm@utm.my>
To: Herliati Rahman <herliatimulyono@gmail.com>

2 June 2023 at 12:06

Dear Herliati Rahman:

We have reached a decision regarding your submission to Jurnal Teknologi, "**IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE GREEN CEMENT INDUSTRY IN INDONESIA**".

#19629

Our decision is: REVISION REQUIRED

2. Reviewers have now commented on your paper. You will see that they are advising you to revise your manuscript. If you are prepared to undertake the work required, I would be pleased to consider your article for publication.

3. For your guidance, reviewers' comments are attached.

4. Please be advised all articles that have been chosen to be published in Jurnal Teknologi for year 2023 will be charged MYR 630.00 (local) MYR730 (Oversea). Should you agree to this term, please submit the following items within three (3) weeks through the system and through email journal_utm@utm.my and qpenerbit@utm.my:

- a) **Revised Manuscript (Corrections highlighted in Colour);**
- b) **List of CORRECTIONS DONE;**
and
- c) **Filled "JT Invoice Request and Payment Instructions REGULAR ISSUE"** document to enable us prepare a formal invoice for payment purpose. Please download the document here: <https://sites.google.com/view/jtsubmissionpackage/home>

We look forward for your favourable reply. Thank you.

Yours sincerely;

Prof. Dr. Norhazilan Md Noor
Universiti Teknologi Malaysia, Malaysia
norhazilan@utm.my

Prof. Dr. Norhazilan Md Noor
Editor, Jurnal Teknologi
Universiti Teknologi Malaysia, Malaysia
norhazilan@utm.my

Reviewer A:
Recommendation: Revisions Required

Referee's commentsA. EvaluationsPlease evaluate the paper according to the following criteria. Check the item if you agree to the statement:

- The topic is important and relevant for publication
- The manuscript uses sufficient references

- The abstract adequately summarizes the content of the manuscript
- The manuscript does not dwell on any sensitive issues

B. Suggestions to the author(s) What can the author(s) do to improve the quality of this paper?

1. For the response for "What is the 'theory' as mentioned in the 5th paragraph of Introduction?", the author(s) only described the benefits of SIA, but not discussing any theory related to SIA applications.
2. For the response for "The research novelty of the study is weak", the author(s) only responded what they are doing in the paper (effect of adding SIA at doses of 100, 150, 200, 250, 300, 350, and 400 ppm), but they did not explain what are the importances to add SIA in different doses, and no background provided to support why they selected such dosages. For instance, I can conduct and claim my novelty of adding human hair into concrete to produce human hair fibre reinforced concrete. However, this is only a self claim without proper elaborations of past background and literature to support why I want to add in human hair into concrete, and what range of parameters I select.
3. Why the blank sample with the compositions of 67%, Gypsum: 2.58%, Limestone: 15.37%, and Slag: 15.05%) that is not added Strength Improver Agent (SIA), is selected? How it is linked to the commercialized product in the market?
4. I still insist that the common unit for compressive strength is MPa, or N/mm², so that the results from this study can be comparable to other studies, without asking your readers to convert on their own.
5. For the last comment, if the author(s) do not conduct any environmental assessments, please do not use the term 'green'

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Improve the Compressive Strength Using a Strength Improver Agent (SIA) In the Green Cement Industry in Indonesia

Authors: Herliati Rahman, Mulyani

Respond to reviewer: First round

| No | Reviewer A | Responds/Revisions |
|----|--|--|
| A | Referee's comments: Please evaluate the paper according to the following criteria. Check the item if you agree to the statement | |
| 1 | The topic is important and relevant for publication | |
| 2 | The work presented in the manuscript is original | |
| 3 | The manuscript uses sufficient references | |
| 4 | Abstract: The abstract adequately summarizes the content of the manuscript | |
| 5 | Introduction: The introduction is adequately developed the problem described in the manuscript is clearly stated. | |
| 6 | Methodology: The adopted methodology described in the manuscript is sound | |
| 7 | Figures: The quality of figures and illustrations is acceptable for publications | |
| 8 | The manuscript does not dwell on any sensitive issues | |
| B | Suggestions to the author(s)What can the author(s) do to improve the quality of this paper | Responds/Revisions |
| 1 | Needs improvement in English (grammatical) writing. Some points are marked in the attached file | Thanks for the useful advice. We have sent this article to proofreading to improve the grammar of the English and also refine the sentence structure. Some points of improvement are highlighted in color in the attached file |
| 2 | Section 3.0 Results and Discussion should only explain the results/outcomes/observations. Description and figures (Fig. 2, 3, 4) related to the testing process should be included in section 2.0 Methodology | Thanks for the very useful suggestion. This part Already rearranged |
| 3 | In the methodology section, some part of the test procedures is written like instructions. They should be in past passive form | They have been rewritten Some points of improvement are highlighted in color in the attached file |
| 4 | Results and discussion section needs some more insight into the finding. Dosage of SIA vs strength improvement and therefore determination of optimum dosage should be presented | SIA dosage vs strength has been presented in Figure 8 |

| No | Reviewer C | Responds/Revisions |
|----|---|---|
| A | Referee's comments: Please evaluate the paper according to the following criteria. Check the item if you agree to the statement | |
| 1 | The abstract adequately summarizes the content of the manuscript | |
| 2 | The findings of this manuscript are correctly interpreted | |
| 3 | The manuscript does not dwell on any sensitive issues | |
| B | Suggestions to the author(s) What can the author(s) do to improve the quality of this paper? | |
| 1 | Introduction: - What is the 'theory' as mentioned in the 5th paragraph of Introduction? | Here we explain that the Prophycol GX type Strength Improver Agent (SIA) has the ability to increase the compressive strength of cement [19]. besides that, SIA is also able to reduce the level of clinker hardness so as to reduce energy consumption so as to reduce greenhouse gas emissions. |
| | - The research novelty of the study is weak, if according to the last paragraph of the Introduction, the effect of adding SIA on the compressive strength of cement, refer to the ASTM C 109 standard. However, the literature review (4th and 5th paragraph) in the paper revealed that it has been done in the past. So I do not see any novel contributions of the paper and it seems that the author(s) only applied the SIA available in the market and report the properties. | The novelty of this study was to determine the effect of adding SIA at doses of 100, 150, 200, 250, 300, 350, and 400 ppm on the compressive strength of cement for PCC slag type. This is presented in Figure 8 |
| 2 | Research materials: what is meant by 'blank samples'? | blank sample, as we mentioned in research materials section, is a sample (67%, Gypsum: 2.58%, Limestone: 15.37%, and Slag: 15.05%) that is not added Strength Improver Agent (SIA) |
| 3 | From the section of Sample Design, I understand that the specimen consists of cement, sand, water and SIA. However, I did not find any material properties of cement, sand and water in the research materials section | Thanks to valuable inputs, the material properties of cement, sand and water were added in the materials research section |
| 4 | 3-8 figures given in Figure 1, 2, 4, 6 and 8 but they are not labelled accordingly. | done |
| 5 | Test standards/references for each test conducted are not provided. | Thanks for the input. We explained in chemical test result section "Based on SNI 15-7064-2014, only the SO ₃ parameter is the main benchmark for composite Portland cement [35]. The results showed an SO ₃ content of |

| | | |
|---|--|--|
| | | 1.88%, it still meets the requirements where the maximum allowed according to the standard is 4%.” |
| 6 | Chemical test results: the XRF is a test, instead of a output of chemical test results. Also, I suggest that the methodology of testing should be moved in the testing section above. | Thanks for the very useful suggestion. This part Already rearranged |
| 7 | Physics test results | |
| | - rephrase the term "physics test" to physical test | done |
| | - methodology of the testing should be moved to the testing section above. | Thanks for the very useful suggestion. This part Already rearranged |
| | - the common unit for compressive strength is MPa, or N/mm ² . | Yes, it is but the tools we use show units in kg/cm ² |
| 8 | Missing Figure 9 and 10 , thus I am not able to validate the discussion in the last part. | Yes, we only have 9 figures |
| 9 | Referring to the title , I do not see any assessments or characterizations to determine on how "green" of the cement produced in the study. | In this paper, we do not include an assessment or characterization to determine how "green" cement is produced, but in the introduction section we explain that the addition of SIA can reduce energy consumption which has an impact on reducing greenhouse gas pollution. We also presented Figure 9 that shows adding 350 ppm SIA slightly reduced the CaO content compared to the blank sample. CaO content can provide an overview of the resulting CO2 emissions [38,39,40]. |

Improve the Compressive Strength Using a Strength Improver Agent (SIA) In the ~~Green~~ Cement Industry in Indonesia

Authors: Herliati Rahman, Mulyani

First of all, thank you for the kind suggestions and corrections that are very useful for the second round, so that our paper becomes much better.

| No | Reviewer A | Responds/Revisions |
|----|---|--|
| A | Referee's comments: Please evaluate the paper according to the following criteria. Check the item if you agree to the statement: | |
| 1 | The topic is important and relevant for publication. | Thanks for the kind comments |
| 2 | The manuscript uses sufficient references. | |
| 3 | The abstract adequately summarizes the content of the manuscript. | |
| 4 | The manuscript does not dwell on any sensitive issues. | |
| B | Suggestions to the author(s)What can the author(s) do to improve the quality of this paper | Responds/Revisions |
| 1 | For the response for "What is the 'theory' as mentioned in the 5th paragraph of Introduction?", the author(s) only described the benefits of SIA, but not discussing any theory related to SIA applications. | Some points of improvement are highlighted in color in the attached file |
| 2 | For the response for "The research novelty of the study is weak", the author(s) only responded what they are doing in the paper (effect of adding SIA at doses of 100, 150, 200, 250, 300, 350, and 400 ppm), but they did not explain what are the importances to add SIA in different doses, and no background provided to support why they selected such dosages. For instance, I can conduct and claim my novelty of adding human hair into concrete to produce human hair fibre reinforced concrete. However, this is only a self claim without proper elaborations of past background and literature to support why I want to add in human hair into concrete, and what range of parameters I select. | First of all, many thanks for your critical thoughts. But we would say why we chosed the dose in the range of 100 – 400 ppm because it is an analogy from previous studies with the addition of another agent. Fortunately, as can be seen in Figure 8, on the addition of 400 ppm SIA, the curve began to decrease. |
| 3 | Why the blank sample with the compositions of 67%, Gypsum: 2.58%, Limestone: 15.37%, and Slag: 15.05%) that is not added Strength Improver Agent (SIA), is selected? How it is linked to the commercialized product in the market? | I would say, we chosed a blank sample, which is a product commercialized on the market with a composition of 67%, Gypsum: 2.58%, Limestone: 15.37%, and Slag: 15.05%) without Strength Improver Agent (SIA) added. |
| 4 | I still insist that the common unit for compressive strength is MPa, or N/mm ² , so that the results from this study can be comparable to other studies, without asking your readers to convert on their own. | Thanks for the suggestion, we agreed to use MPa for the compressive strength' unit. |
| 5 | For the last comment, if the author(s) do not conduct any environmental assessments, please do not use the term 'green' | Thanks for the very useful suggestion. We agreed to delete term 'green' on the title. |

[Jurnal Teknologi] Editor Decision (A) "IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE GREEN CEMENT INDUSTRY IN INDONESIA"

Prof. Dr. Norhazilan Md Noor <journal_utm@utm.my>
To: Herliati Rahman <herliatimulyono@gmail.com>

18 June 2023 at 14:26

Dear Herliati Rahman:

We have reached a decision regarding your submission to Jurnal Teknologi, "IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE GREEN CEMENT INDUSTRY IN INDONESIA".

#19629

CONGRATULATIONS!!

Your article has been queued for future publication of Jurnal Teknologi (Sciences and Engineering) :
Thank you.

Best regards;

Prof. Dr. Norhazilan Md Noor
Universiti Teknologi Malaysia, Malaysia
norhazilan@utm.my

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Final approve of paper no #19629"

Ir. Herliati, MT, Ph.D <herliatimulyono@gmail.com>

6 August 2023 at 21:06

To: "Professor Dr. Rosli Md Illias" <journal_utm@utm.my>, qpenerbit@utm.my

Dear Editor,

First of all, thanks very much for accepting our article entitled "**IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE CEMENT INDUSTRY IN INDONESIA.**"


Kindly find the attached file. We include: 1) co-author email. 2) Please delete references numbered 24 because it is the same with numbered 25.

We are hoping this manuscript will be published for the **forthcoming issue of No. 85:5 September 2023.**

Many Thanks and Best Regard

Ir. Herliati, MT, Ph.D
Fakultas Teknologi Industri
Universitas Jayabaya

<https://orcid.org/0000-0002-1319-6458>

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Round 2 Status
Submission accepted.

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| [Jurnal Teknologi] Editor Decision (RR) "IMPROVE THE C... | 2023-06-02 05:06 AM |
| [Jurnal Teknologi] Editor Decision (A) "IMPROVE THE CO... | 2023-06-18 07:26 AM |

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| ▶ 71401-2 Article Text, 19629-Article Text-70637-1-15-20230508.docx (2) | June 5, 2023 | Article Text |
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IMPROVE THE COMPRESSIVE STRENGTH USING A STRENGTH IMPROVER AGENT (SIA) IN THE CEMENT INDUSTRY IN INDONESIA

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Chemical Engineering, Faculty of Industrial Technology of Jayabaya University Jalan Raya Bogor km 28,8 Cimanggis Jakarta Timur, Indonesia

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DOI: <https://doi.org/10.11113/jurnalteknologi.v85.19629>

Keywords: Clinker, carbon capture, compressive strength, improver, slag

Abstract

Greenhouse gas emissions such as CO₂ are released during clinker production through various processes, including the calcination reaction of limestone (CaCO₃). To reduce CO₂ emissions per ton of cement produced, some studies have explored the use of clinker substitutes. However, a reduction in the amount of clinker can also result in decreased compressive strength of the cement. To address this issue, the addition of a Strength Improver Agent (SIA) can be used to maintain the necessary compressive strength and ensure compliance with all relevant standards. Therefore, This study aimed to determine the optimal amount of SIA required to achieve the desired compressive strength. The study added SIA in varying amounts (100, 150, 200, 250, 300, 350, and 400 ppm), and the compressive strength of cement was measured at 1, 3, 7, and 28 days based on ASTM C 109 and QPT-LAB-SNI-05 standards. Physical tests were also conducted, including Blaine, 325 mesh residue, Insoluble Residue (IR), Loss on Ignition (LOI), and XRF based on ASTM C 114, ASTM-STP 985, XRF Thermo ARL 8480S. The observations and analysis showed that the optimum amount of SIA addition is 350 ppm, where the resulting compressive strength increases at least 7% compared to blanks.

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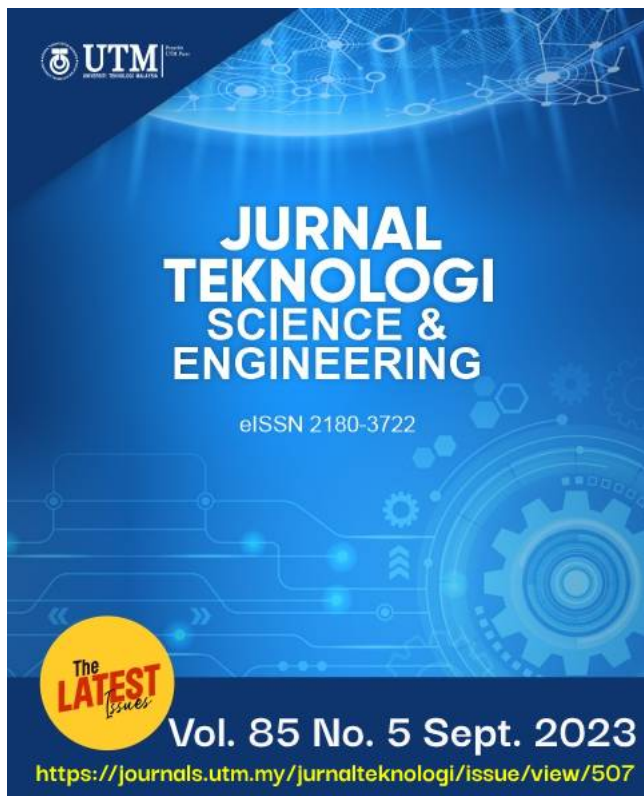
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