

FINAL PROJECT

EFFECT OF BAMBOO LEAF ASH AS PARTIAL CEMENT REPLACEMENT ON COMPRESSIVE STRENGTH OF FLOWABLE CONCRETE



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**CIVIL ENGINEERING
FACULTY OF ENGINEERING
UNIVERSITAS 17 AGUSTUS 1945 SURABAYA**

2025

FINAL PROJECT

**EFFECT OF BAMBOO LEAF ASH AS PARTIAL CEMENT
REPLACEMENT ON COMPRESSIVE STRENGTH OF
FLOWABLE CONCRETE**

Prepared as a Requirement to Obtain a Bachelor of Engineering Degree (S.T.) at the
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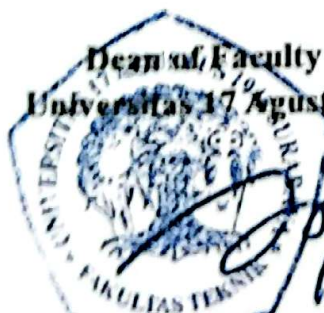
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FOREWORD

Praise for God Almighty for His abundance of grace and gifts, so that we can complete the preparation of the Final Project Report for the Civil Engineering Study Program at the Universitas 17 Agustus 1945 Surabaya, realizing that the preparation of this Final Project will not be completed without the assistance of various parties. Therefore, on this occasion the author would like to thank:

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realize that this report is far from perfect and there are still many mistakes and shortcomings in it. For that, it is hoped that criticism and suggestions from readers Then if there are many mistakes in this report, please apologize profusely. Thus, hopefully this report can be useful. Thank you.

Surabaya, 29 June 2025



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EFFECT OF BAMBOO LEAF ASH AS PARTIAL CEMENT REPLACEMENT ON COMPRESSIVE STRENGTH OF FLOWABLE CONCRETE

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ABSTRACT

Concrete plays important role in development of technology in construction in Indonesia, concrete offers advantages where constituent materials are easily available in various regions of Indonesia and price is cheaper than other construction materials, but concrete also has several problems, namely the constituent materials of concrete are made from non-renewable resources and in the implementation of ordinary concrete materials cannot optimally enter between reinforcement so that the strength of the structure is not optimal. use of flowable concrete with partial substitution of cement using bamboo leaf ash offers a solution to the problems encountered at the time of implementation. In this study, effect of using flow concrete with partial cement substitution using bamboo leaf ash will be examined and will be compared with normal flow concrete without a mixture of bamboo leaf ash, the method used is bamboo leaf ash which has been burned into powder, then combustion is carried out using a furnace with a temperature of 700°C for 2 hours so that silica content is high and then divided into several variations of cement substitution, namely 0%, 2.5%, 6%, 8.5%, 10% and obtained an optimal increase in compressive strength in a mixture of 2.5% bamboo leaf ash with a value of 14.78 Mpa.

Keywords: *Flowable Concrete, Bamboo Ash Leaves, Compressive Strength.*

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LIST OF CONTENT

| | |
|---|--------------|
| COVER..... | |
| FINAL PROJECT APPROVAL SHEET | i |
| STATEMENT OF AUTHENTICITY AND APPROVAL FOR FINAL PROJECT PUBLICATION | ii |
| FOREWORD..... | iv |
| ABSTRACT | v |
| LIST OF CONTENT..... | vi |
| LIST OF FIGURES..... | xi |
| LIST OF TABLES | xiii |
| CHAPTER I INTRODUCTION..... | xviii |
| 1.1 Background | 1 |
| 1.2 Problem Formulations | 4 |
| 1.3 Research Objectives | 4 |
| 1.4 Problem Limitations | 4 |
| 1.5 Benefits Research..... | 5 |
| a. Benefits for Student | 5 |
| b. Benefit For Universitas 17 Agustus 1945 Surabaya..... | 5 |
| c. Benefits For Further Researchs | 5 |
| CHAPTER II LITERATURE STUDY..... | 7 |
| 2.1 Previous Research | 7 |
| 2.2 Basic theory | 15 |
| 2.2.1 Concrete..... | 15 |
| 2.2.2 Concrete Characteristic..... | 16 |
| 2.2.3 Ingredients of Concrete..... | 18 |
| 2.2.4 Slump Flow Test..... | 24 |
| 2.2.5 Concrete Treatment | 25 |
| 2.2.6 Concrete Content Weight Test..... | 26 |
| 2.2.7 Concrete Water Absorbtion Test | 26 |
| 2.2.8 Concrete Compressive Strenght Test..... | 27 |

| | | |
|---|---|-----------|
| 2.2.9 | Factors Affecting the Strength of Concrete | 29 |
| CHAPTER III RESEARCH METHOD..... | | 31 |
| 3.1 | Flowchart | 31 |
| 3.2 | Flowchart Explanation..... | 33 |
| 3.2.1 | Literature Study | 33 |
| 3.3 | Research Location | 33 |
| 3.4 | Tools and materials | 33 |
| 3.5 | Materials Test..... | 34 |
| 3.5.1 | Cement Testing | 34 |
| 3.5.2 | Sand Moisture Test (ASTM C556 89)..... | 35 |
| 3.5.3 | Sand Specific gravity testing (ASTM C128-93)..... | 35 |
| 3.5.4 | Sand Absorbtion Water Testing (ASTM C128-93) | 36 |
| 3.5.5 | Sand Volume Weight Testing (ASTM C29-91) | 36 |
| 3.5.6 | Testing the organic content of sand (ASTM C40-92)..... | 37 |
| 3.5.7 | Sand Silt Content Testing (ASTM C40-92)..... | 38 |
| 3.5.8 | Coarse Aggregate Moisture Testing (ASTM C556-89)..... | 38 |
| 3.5.9 | Specific gravity testing of coarse aggregates | 39 |
| 3.5.10 | Coarse Aggregate Absorption Water Testing (ASTM C127-88)..... | 39 |
| 3.5.11 | Coarse Aggregate Volume Weight Testing (ASTM C29-91a)..... | 39 |
| 3.5.12 | Testing Mud Content of Coarse Aggregates (ASTM C117-95) | 40 |
| 3.5.13 | Coarse Aggregate Wear Testing (ASTM C131-89)..... | 41 |
| 3.5.14 | Fine Aggregate Sieve Analysis Testing (ASTM C1366-95A)..... | 42 |
| 3.5.15 | Testing of Coarse Aggregate Sieve Analysis (ASTM C 136-95A) | 42 |
| 3.5.16 | Mix Design Planning | 43 |
| 3.5.17 | Planning of Speciment research..... | 50 |
| 3.5.18 | Compressive Strength Test | 50 |
| 3.5.19 | Speciment Method | 51 |
| 3.5.20 | Concrete Water Absorbptions..... | 51 |
| CHAPTER IV | | 53 |

| | | |
|-------|---|----|
| 4.1 | Fine Aggregates Material Testing Result..... | 53 |
| 4.1.1 | Examination of Fine Aggregate Sieve Analysis | 53 |
| 4.1.2 | Examination of Specific gravity of fine aggregate | 56 |
| 4.1.3 | Examination Fine Aggregate Absorbtion | 57 |
| 4.1.4 | Examination Volume Weight of Fine Aggregates..... | 58 |
| 4.1.5 | Examination of Fine Aggregate Moisture | 58 |
| 4.1.6 | Examination of Fine Aggregates Against Mud by Dry Method..... | 59 |
| 4.2 | Testing results of Coarse Aggregate Material (size 10 mm-20 mm) | 60 |
| 4.2.1 | Examination of Coarse Aggregate Sieve Analysis size 10 mm-20 mm..... | 60 |
| 4.2.2 | Examination of Specific gravity of coarse aggregate | 63 |
| 4.2.3 | Examination Absorbtion of Coarse Aggregate | 63 |
| 4.2.4 | Examination Volume Weight of Coarse Aggregate | 64 |
| 4.2.5 | Examination Coarse Aggregate Moisture..... | 64 |
| 4.2.6 | Examination of Coarse Aggregate Against Silt by Dry Method | 65 |
| 4.2.7 | Examination of Coarse Aggregate Wear | 66 |
| 4.3 | Result Analysis of Coarse Aggregate size 5 mm-10 mm | 66 |
| 4.3.1 | Examination Sieve Analysis of Coarse Aggregate size 5 mm-10 mm | 66 |
| 4.3.2 | Examination of Specific gravity of coarse aggregate | 69 |
| 4.3.3 | Examination of Coarse Aggregate Absorbtion..... | 70 |
| 4.3.4 | Examination of Volume Weight of Coarse Aggregate | 70 |
| 4.3.5 | Examination of Coarse Aggregate Moisture | 71 |
| 4.3.6 | Examination of Coarse Aggregate Against Silt by Dry Method | 72 |
| 4.3.7 | Examination of Coarse Aggregate Wear | 72 |
| 4.4 | Result of Combined Coarse Aggregate Analysis..... | 73 |
| 4.5 | Examination of Bamboo leaf ash material | 75 |
| 4.5.1 | Examination of Moisture Bamboo leaf ash | 75 |
| 4.5.2 | Examination Specific gravity of bamboo leaf ash material | 76 |
| 4.5.3 | Examination of Compound content of bamboo leaf ash material..... | 77 |
| 4.6 | Mix design of flowable concrete | 77 |
| 4.7 | Slump Test Results | 97 |

4.8 Test Results for Weight Content of Flowable Concrete..... 101

4.9 Water Absorbtion Test Results of Flowable Concrete110

4.10 Compressive Strength Testing Results of Flowable Concrete112

4.11 Standard Deviation Calculation Results 122

CHAPTER V..... 137

5.1 Conclusion 137

5.2 Suggestion 138

BIBLIOGRAPHY..... 141

ATTACHMENT..... 146

..... 160

LIST OF FIGURES

| | |
|--|-----|
| Figure 2. 1 Graphical representation of compressive strength of concrete with 0%, 5%, 7%, 9% and 11% variation of bamboo leaf ash addition. | 8 |
| Figure 2. 2 Graph of the compressive strength of concrete with the addition of bamboo leaf ash which has variations of 0%, 2%, 4% and 8%. | 9 |
| Figure 2. 3 The compressive strength graph of the addition of bamboo leaf ash with variations of 0%, 3%, 5% and 7%..... | 10 |
| Figure 2. 4 Concrete compressive strength chart | 11 |
| Gambar 2. 5 Graph of compressive strength with bamboo ash addition of 2.5%, 5%, 7.5% and 10% | 12 |
| Figure 2. 6 Compressive Strength Testing | 27 |
| Figure 3. 1 Flowchart of the manufacture of flowable concrete specimens with variations of 0%, 2.5%, 6%, 8.5% and 10% as a partial replacement of cement. | 32 |
| Figure 4. 1 Coarse Sand Gradation Chart (Zone 1)..... | 54 |
| Figure 4. 2 Medium Sand Gradation Chart (Zone 2) | 55 |
| Figure 4. 3 Semi-fine Sand Gradation Chart (Zone 3)..... | 55 |
| Figure 4. 4 Fine Sand Gradation Chart (Zone 4)..... | 56 |
| Figure 4. 5 10 mm Coarse Aggregate Gradation Chart..... | 61 |
| Figure 4. 6 20 mm Coarse Aggregate Gradation Chart..... | 62 |
| Gambar 4. 7 40 mm Coarse Aggregate Gradation Chart | 62 |
| Figure 4. 8 Coarse Aggregate Gradation 10 mm Chart..... | 68 |
| Figure 4. 9 20 mm Coarse Aggregate Gradation Chart..... | 68 |
| Figure 4. 10 Coarse Aggregate Gradation Chart 40 mm Size | 69 |
| Figure 4. 11 40 mm Coarse Aggregate Gradation Chart | 74 |
| Figure 4. 12 Graph Content of compounds present in bamboo leaf ash | 77 |
| Figure 4. 12 Figure Estimated wet concrete content weight | 83 |
| Figure 4. 13 Batch 1 Slump Test Chart (cm)..... | 98 |
| Figure 4. 14 Batch 2 Slump Test Chart (cm)..... | 98 |
| Figure 4. 15 Batch 3 Slump Test Chart (cm)..... | 99 |
| Figure 4. 16 Overall Average Slump Flow Chart (cm) | 100 |

| | |
|--|-----|
| Figure 4. 17 Graph of Average Weight Content of Wet Concrete Batch 1 | 102 |
| Figure 4. 18 Graph of Average Weight Content of Wet Concrete Batch 2 | 103 |
| Figure 4. 19 Graph of Average Weight Content of Wet Concrete Batch 3 | 104 |
| Figure 4. 20 Graph of Average Weight Content of Combined Wet Concrete | 104 |
| Figure 4. 21 Graph of Average Dry Weight Concrete Content of Batch 1 (kg/m ³) | 107 |
| Figure 4. 22 Graph of Average Dry Weight Concrete Content of Batch 2 (kg/m ³) | 108 |
| Figure 4. 23 Graph of Average Dry Weight Concrete Content of Batch 3 (kg/m ³) | 109 |
| Figure 4. 24 Graph of Average Dry Concrete Content Weight (kg/m ³)..... | 109 |
| Figure 4. 25 Water absorption graph of 28-day flowable concrete (%)..... | 111 |
| Figure 4. 26 Graph of Average Compressive Strength of Batch 1 (Mpa)..... | 118 |
| Figure 4. 27 Graph of Average Compressive Strength of Batch 1 (Mpa)..... | 118 |
| Figure 4. 28 Graph of Average Compressive Strength of Batch 1 (Mpa)..... | 119 |
| Figure 4. 29 Average for Compressive Strength Test Batch 1,2 dan 3 (Mpa) | 119 |
| Figure 4. 30 Graph of Average Compressive Strength that has been converted to 28 days (Mpa)..... | 120 |
| Figure L. 1 Attachment of XRF Test Document..... | 161 |
| Figure L. 2 Attachment of Certificate Sika Viscocrete 3115N | 164 |

LIST OF TABLES

| | |
|---|----|
| Table 2. 1 Main Composition of Type I Cement | 19 |
| Table 2.2 Gradation that must be met by fine aggregate (sand) based on SNI 03-2834-2000 and ASTM C-33 | 20 |
| Table 2. 3 Coarse Aggregate Gradation Limit..... | 21 |
| Table 2. 4 Chemical substances contained by Bamboo..... | 23 |
| Table 2. 5 Comparison of Bamboo Leaf Ash Content and Portland Cement..... | 23 |
| Table 2. 6 Chemical Composition of Bamboo Leaf Ash at Calcination of 500, 600, and 700°C..... | 24 |
| Table 2. 7 . Slump Value for Various Concrete Works | 25 |
| Table 2. 8 . Types of concrete based on compressive strength values..... | 28 |
| Table 2. 9 Comparison of Compressive Strength of Concrete at Various Ages | 29 |
| Table 3. 1 Gravel Gradation Table..... | 41 |
| Table 3. 2 Fine aggregate sieve | 42 |
| Table 3. 3 Average compressive strength is necessary if data is not available for standard deviation | 44 |
| Table 3. 4 Estimated compressive strength (Mpa) of concrete with cement water factor, and coarse aggregate commonly used in Indonesia | 44 |
| Table 3. 5 Number and Composition of Flowable Concrete Test Objects with Partial Substitution of Cement using Bamboo Ash Leaf (BAL)..... | 50 |
| Table 4. 1 Fine Aggregate Sieve Analysis Data Results..... | 53 |
| Table 4. 2 Results of Fine Aggregate Specific Weight Data | 56 |
| Table 4. 3 Fine Aggregate Absorbtion Data Results..... | 57 |
| Table 4. 4 Fine Aggregate Volume Weight Data Results..... | 58 |
| Table 4. 5 Fine Aggregate Moisture Data Results | 58 |
| Table 4. 6 Results of Dry Sludge Content Data for Fine Aggregates..... | 59 |
| Table 4. 7 Results of sieve analysis data for coarse aggregate size 10 mm-20 mm . | 60 |
| Table 4. 8 Results of Specific gravity data of coarse aggregate size 10 mm-20 mm | 63 |
| Table 4. 9 Results of 10 mm-20 mm Coarse Absorbtion Data..... | 63 |

| | |
|---|----|
| Table 4. 10 Data Results Volume Weight of Coarse Aggregate size 10 mm-20 mm | 64 |
| Table 4. 11 Data Results Volume Weight of Coarse Aggregate size 10 mm-20 mm | 64 |
| Table 4. 12 Results of Dry Sludge Content Data for Coarse Aggregate size 10 mm-20 mm..... | 65 |
| Table 4. 13 Results of Wear Data of Coarse Aggregate size 10 mm- 20 mm..... | 66 |
| Table 4. 14 Results of sieve analysis data for coarse aggregate size 5 mm-10 mm | 66 |
| Table 4. 15 Results of Specific gravity data of coarse aggregate size 5 mm - 10 mm | 69 |
| Table 4. 16 Results of Absorbtion Data of Coarse Aggregate size 5 mm- 10 mm ... | 70 |
| Table 4. 17 Data Results Volume Weight of Coarse Aggregate size 5 mm- 10 mm. | 70 |
| Table 4. 18 Moisture Data Results of Coarse Aggregate size 5mm- 10 mm..... | 71 |
| Table 4. 19 Results of Dry Sludge Content Data for Coarse Aggregate size 5 mm- 10 mm..... | 72 |
| Table 4. 20 Wear Data Results of Coarse Aggregate size 5 mm- 10 mm | 72 |
| Table 4. 21 Combined Coarse Aggregate sieve analysis data results | 73 |
| Table 4. 22 Combined Coarse Aggregate sieve analysis data results | 74 |
| Table 4. 23 Hasil Data Volume Weight of Coarse Aggregate size 5mm- 10 mm | 75 |
| Table 4. 24 Bamboo leaf ash specific gravity data results..... | 76 |
| Table 4. 25 Data Results Examination of the content present in bamboo leaf ash... | 77 |
| Table 4. 25 Free Water Content Value Data Results | 78 |
| Table 4. 26 Results of Specific Weight Data of Rough and Fine Aggregates..... | 82 |
| Table 4. 27 Results Aggregate Absorbtion and moisture data | 86 |
| Table 4. 28 Corrected Material Proportion of 0% BLA Flow Concrete | 87 |
| Table 4. 29 Corrected Material Proportion of 2,5 % BLA Flow Concrete | 89 |
| Table 4. 30 Corrected Material Proportion of 6 % BLA Flow Concrete | 90 |
| Table 4. 31 Corrected Material Proportion of 8,5 % BLA Flow Concrete | 91 |
| Table 4. 32 Corrected Material Proportion of 10% BLA Flow Concrete | 92 |
| Table 4. 33 Actual Material Proportion of 15 Cm X 30 Cm Cylinder Per 3 Test Objects..... | 94 |

| | |
|--|-----|
| Table 4. 34 Actual Material Proportion of 10 Cm X 2 Cm Cylinder Per 2 Test Piece | 96 |
| Table 4. 35 Slump Test | 97 |
| Table 4. 36 et concrete content weight test results | 101 |
| Table 4. 37 Wet concrete content weight test results (continued) | 102 |
| Table 4. 38 Dry weight concrete content test results..... | 105 |
| Table 4. 39 Water Absorbtion Test Results of Flowable Concrete | 110 |
| Table 4. 40 Compressive Strength Testing Results of Batch 1 Flowable Concrete | 112 |
| Table 4. 41 Hasil Pengujian Resapan Kuat Tekan Alir Umur 21 Hari | 114 |
| Table 4. 42 Hasil Pengujian Resapan Kuat Tekan Alir Umur 28 Hari | 116 |
| Table 4. 43 Standard Deviation Calculation Result of Batch 1 Flowable Concrete | 122 |
| Table 4. 44 Concrete Conversion | 123 |
| Table 4. 45 Concrete Control Standard | 123 |
| Table 4. 46 Batch 1 Concrete Control Standard Table | 126 |
| Table 4. 47 Standard Deviation Calculation Result of Batch 2 Flowable Concrete | 127 |
| Table 4. 48 Table Standar Kontrol Beton batch 3..... | 130 |
| Table 4. 49 Calculation of Standard Deviation of Flowable Concrete Batch Age 3131 | |
| Table 4. 50 Table Standar Kontrol concrete batch 3..... | 134 |

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LIST OF ATTACHMENT

| | |
|--|-----|
| L1 Preparation of Bamboo Leaf Ash..... | 142 |
| L2 Material Preparation of Flowable Concrete..... | 148 |
| L3 Fine Aggregate Testing (Sand)..... | 149 |
| L4 Testing of 5-10mm and 10-20mm Coarse Aggregates..... | 150 |
| L5 Concrete Casting Activity Process Flow..... | 152 |
| L6 Absorbtion Testing Process of 28-Day Flowable Concrete..... | 157 |

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