

FINAL ASSIGNMENT

**UTILIZATION OF ASPHALT PAVEMENT RECYCLING FOR NEW
HOT-MIX ASPHALT MIXTURES**

**Submitted to fulfill the requirements in completing undergraduate education
on Civil Engineering of Sultan Agung Islamic University Semarang**



**Ayu Dwi Astuti
30201403714**

**Umi khoirul Anis
30201403937**

**DEPARTEMENT OF CIVIL ENGINEERING
ENGINEERING FACULTY
UNIVERSITAS ISLAM SULTAN AGUNG SEMARANG
2018**

DECLARATION

The undersigned below :

Name : 1. Ayu Dwi Astuti (30201403714)
2. Umi Khoirul Anis (30201403937)

Department : Civil Engineering

Hereby declare this our Final Assignment entitled : **UTILIZATION OF ASPHALT PAVEMENT RECYCLING FOR NEW HOT-MIX ASPHALT MIXTURES** is a scholarly work free from plagiarism. If later there is proven plagiarism from this final assignment, then I am willing to accept sanction in accordance with applicable legislation.

Semarang, 20 August 2018

By :

Author



Ayu Dwi Astuti

Author



Umi Khoirul Anis

Approved by:

Supervisor

A handwritten signature in black ink, appearing to be "H. Djoko Susilo Adhy".

Ir. H. Djoko Susilo Adhy, MT

Co - Supervisor

A handwritten signature in black ink, appearing to be "Gatot Rusbintarjo".

Ir. Gatot Rusbintarjo, M.R.Eng MSc., Ph.D



**YAYASAN BADAN WAKAF SULTAN AGUNG
UNIVERSITAS ISLAM SULTAN AGUNG SEMARANG
FAKULTAS TEKNIK**

Jl. Raya Kaligawe KM. 4 PO.BOX. 1054 Telp. (024) 6583584 Ext. 507 Semarang 50122

APPROVAL PAGE OF FINAL ASSIGNMENT

**UTILIZATION OF ASPHALT PAVEMENT RECYCLING FOR NEW
HOT-MIX ASPHALT MIXTURES**

By :



AYU DWI ASTUTI

NIM: 30.2014.03.714

UMI KHOIRUL ANIS

NIM: 30.2014.03.937

Have been approved at Semarang, September 5th 2018

Supervisor

Co - Supervisor

Ir.H. Djoko Susilo Adhy, MT

Ir. Gatot Rusbintardjo, M.R.Eng MSc., Ph.D

Approved by :

Head of The Department of Civil Engineering, Faculty of Engineering



Ari Sentani, ST, MSc.

MOTTO

(Ayu Dwi Astuti)

اتَّقُوا اللَّهَ وَأَعِدُّوا لَهُمْ لَأُولَئِكَ

- Bertaqwalah kepada Allah dan berlaku adil di antara anak-anakmu “.
(HR Bukhari Mulim)
- Tidak ada masalah yang tidak bisa diselesaikan selama ada komitmen bersama untuk menyelesaikannya.

يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ

- Allah meninggikan orang-orang yang beriman di antara kamu dan orang-orang yang diberi ilmu pengetahuan beberapa derajat” (Depag RI, 1989 : 421)

(Umi Khoirul Anis)

فَأَرْغَبْ رَجَبًا إِلَىٰ (7) فَأَنْصَبْ فَرَعْتَ فَإِذَا (6) يُسْرًا الْعُسْرَ مَعَ إِنَّ (5) يُسْرًا الْعُسْرَ مَعَ فَإِنَّ (8)

- “Because in fact after the difficulty there is convenience (5) in fact after the difficulty there is convenience (6) then when you have finished something of an affair, work hard on other matters (7) and only to your god should you hope (8)”.(QS. Al Insyirah : 5-8)
- “O you who have believed, persevere and endure and remain stationed and fear Allah that you may be successful”
(QS. Al Imraan : 200)
- “And (as for) these examples, We set them forth for men, and none understand them but the learned”
(QS. Al Ankabut : 43)

- “And certainly we gave wisdom to Luqman, saying: Be grateful to Allah. And whoever is grateful, he is only grateful for his own soul; and whoever is ungrateful, then surely Allah is Self-sufficient, Praised”

(QS. Lugman : 12)

ACKNOWLEDGEMENT

Bismillahirrahmanirrahiim. Thanks the author to Allah SWT, thanks to His grace and guidance the author can complete this essay. Prayers and greetings were poured out on the Prophet Muhammad, his family and friends.

Furthermore, the author would like to convey infinite gratitude to all parties who helped smooth the writing of this essay, both in the form of moral and material encouragement. Because the author believes without help and support, it is difficult for the writer to finish writing this description.

In preparing this report, i was contact with many people, researches, academicians, and practitioners. They have contributed towards my understanding and thoughts. In particular, i wish to express my sincere appreciation to my study supervisor Ir.H. Djoko Susilo Adhy, MT and Ir. H. Gatot Rusbintardjo, M.R.Eng, MSc., Ph.D. who have taken the time to guide the authors in completing this essay, thanks you for his encourages, guidance, criticism, advice, motivation and friendship. Without their continued support and interest, this final assignment report would not have been the same as presented here.

Special thanks are addressed to Dean of the Engineering Faculty of UNISSULA, Ir. H. Rachmat Mudiyo MT., Ph.,D. and Head of Department of Civil Engineering, Faculty of Engineering UNISSULA, Bapak Ari Sentani, ST. MSc., for permission, to take the final assignment as the requirement for reaching Bachelor Degree in Civil Engineering in Faculty of Engineering UNISSULA.

I would like to thank to PT. Mohandas Oeloeng who helped us provide RAP material so that our research could be carried out and run smoothly.

A very special expression of thanks and appreciation from the author with the humble and respectfulness of the two beloved parents of the author, the father of Mr. Sukirno and Mrs. Ropiah, with all their sacrifices, will never forget their services. Prayer of blessings, advice and guidance from them will be the most

effective moral impetus for the continuation of the study authors to date. And to my broder Afri Budiman who always give support to author.

Thanks to beloved M. Rochman Sulistiyono, Sheila Shafira, Dina Arin, Vera rohmadoniati, who always want to spare their time to give motivation and advice. Also thanks to All of my friends in Department of Civil Engineering 2014 especially class D for have a wonderful memories and support.

Finally the authors hope that the good deeds of all parties that have helped the authors in completing this thesis get a reward from the mercy of Allah SWT. Hopefully what has been written in this thesis can be beneficial for all parties. Aamiin ya Robbal ‘alamin

Semarang, August 2018

Ayu Dwi Astuti

ACKNOWLEDGEMENT

Bismillahirrahmanirrahiim. Thanks the author to Allah SWT, thanks to His grace and guidance the author can complete this essay. Prayers and greetings were poured out on the Prophet Muhammad, his family and friends.

Furthermore, the author would like to convey infinite gratitude to all parties who helped smooth the writing of this essay, both in the form of moral and material encouragement. Because the author believes without help and support, it is difficult for the writer to finish writing this description.

In preparing this report, i was contact with many people, researches, academicians, and practitioners. They have contributed towards my understanding and thoughts. In particular, i wish to express my sincere appreciation to my study supervisor Ir.H. Djoko Susilo Adhy, MT and Ir. H. Gatot Rusbintardjo, M.R.Eng, MSc., Ph.D. who have taken the time to guide the authors in completing this essay, thanks you for his encourages, guidance, criticism, advice, motivation and friendship. Without their continued support and interest, this final assignment report would not have been the same as presented here.

Special thanks are addressed to Dean of the Engineering Faculty of UNISSULA, Ir. H. Rachmat Mudiyo MT., Ph.,D. and Head of Department of Civil Engineering, Faculty of Engineering UNISSULA, Bapak Ari Sentani, ST. MSc., for permission, to take the final assignment as the requirement for reaching Bachelor Degree in Civil Engineering in Faculty of Engineering UNISSULA.

I would like to thank to PT. Mohandas Oelong which has helped us giving Reclaimed Asphalt Pavement.

A very special expression of thanks and appreciation from the author with the humble and respectfulness of the two beloved parents of the author, the father of Mr. H. Mahfudz Shodiq and Mrs. Hj. Hindun, with all their sacrifices, will never forget their services. Prayer of blessings, advice and guidance from them will be the most effective moral impetus for the continuation of the study authors to date.

And to my brother Ahmad Islahuddin, and my sister Putri Rizqi Amaliatunnisa who always give support to author.

Thanks to Setyo Adhi Nugroho, Khalilurrahman P.W, and Galang Aryo Wijaya who always want to spare their time to give motivation and advice. Also thanks to All of my friends in Department of Civil Engineering 2014 especially class A for have a wonderful memories and support.

Finally the authors hope that the good deeds of all parties that have helped the authors in completing this thesis get a reward from the mercy of Allah SWT. Hopefully what has been written in this thesis can be beneficial for all parties. Aamiin ya Robbal ‘alamin

Semarang, August 2018

Umi Khoirul Anis

