

SOCIALIST REPUBLIC OF VIETNAM

Independence - Freedom - Happiness

Ho Chi Minh City, May 25, 2026

WRITTEN CERTIFICATION OF WORK APPLICATION

I. AUTHOR'S DECLARATION

1. General information about the author of the work/topic:

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Study/work unit: Faculty of Environment and Natural Resources – University of Science and Technology, Vietnam National University of Ho Chi Minh City (HCMUT).

List of co-authors (RENOVA Research Group):

1. **Le Nhat Huy** (Team Leader - Environmental Engineering)
2. **Nguyen Phuc Minh Anh** (Member - Circular Economy)
3. **Nguyen Tran The Vinh** (Member - Automotive Engineering)
4. **Nguyen Phuc Minh Thu** (Member - Major in Industrial Management)
5. **Tran Thi Tuyet Minh** (Member - Textile and Garment Major)
6. **Le Phuc Khang** (Member – Computer Engineering)

Scientific instructors:

1. **MSc. Duong Thi Thanh** (Lecturer, Faculty of Environment and Natural Resources, University of Science and Technology - VNU-HCM)
2. **Assoc. Prof. Dr. Vo Thanh Hang** (Lecturer, Faculty of Environment and Natural Resources, University of Science and Technology - VNU-HCM)

2. General information about the project/project:

Name of the project/project: "RENOVA Wind Cement Brick Project"

Fields of study: Green Building Materials Science and Technology, Environmental Protection and Circular Economy (ESG & EPR).

Implementation time: From September 2024 to May 2026.

Achievements and awards of the project/project:

Third Prize in the EPICS 8 (Engineering Projects in Community Service) contest.

The VNWRA 2025 Consolation Prize is awarded by the Vietnam Waste Management Association for its breakthrough multi-layer packaging recycling solution.



II. CONFIRMATION OF THE APPLICATION UNIT

1. General information about the application unit:

Name of application unit: ANH THUY TECHNOLOGY, EQUIPMENT, SERVICE AND ENVIRONMENT JOINT STOCK COMPANY

Address: 793/55/12/5 Tran Xuan Soan, Tan Hung Ward, Ho Chi Minh City.

Phone: 028) 73000 581 – (028) 73000 587

Email: anhthuytech.vn@gmail.com

Enterprise code (MST): 0312653484.

Main areas of activity: Intensive activities in the field of environment and waste treatment technology. The company provides consulting, designing, constructing and operating automatic wastewater, exhaust gas, water supply and environmental monitoring systems for industrial parks, factories, hospitals, residential and commercial areas. Manufacturing and processing environmental equipment, developing maintenance services, renovation and transfer of environmental treatment technology. To invest in the development of environmental analysis laboratories and waste treatment projects and industrial parks in the orientation of sustainable development.



Full name of the head of the agency: Ms. Nguyen Thuy Anh

Position: Director.

2. Contents of application of the work:

Anh Thuy Environmental and Service Equipment Technology Joint Stock Company has collaborated with the RENOVA research team to successfully integrate the solution "Circulating heat pressing of multi-layer plastic packaging - rice husk" at the Company's mechanical workshop.

Application of non-peeling composite forming technology: Taking advantage of multi-layer packaging plastic (MLP) and thermoplastic substrate additives combined with rice husk by-products as bio-enhancers. Under the influence of heat-pressure simultaneously the rice husk combines the resin, optimizing the interface bonding and locking in impurities without the need for complex aluminum-polymer peeling.

Fabrication and trial construction: Experimental casting of brick samples.

3. Application efficiency of the project:

Scientific and technological efficiency: The closed circulating heating pressing process has no secondary emissions. The product achieves a stable experimental compressive strength of 8.0 – 10.0 MPa (meeting the standard of non-baked building materials). Ultra-light brick weight (~1.5 kg/brick), reducing the load of the foundation structure by 50% compared to traditional cement bricks. In particular, the polymer-silica structure helps control the water absorption mechanism to reach an extremely low level of < 1%, completely resistant to mold and cracking due to weather.

Economic efficiency: Optimize the value chain by using multi-layer packaging of

"environmental burden" rice husks into high-commercial value ventilation bricks. The project effectively takes advantage of the recycling subsidy cash flow from the EPR mechanism to reduce production costs. Thanks to the low thermal conductivity of composite materials, the tiles act as a "heat shield" that helps to lower the room temperature from 3°C to 5°C, promote natural ventilation, and support a significant reduction in the power consumption of the air conditioning system.

Social efficiency: Contributing to raising public awareness and promoting waste separation at the source. Ensuring ventilation and optimizing the living space experience for users. Providing clear and transparent physical and mechanical parameters to help investors easily quantify the carbon emission reduction index to support the project to achieve LOTUS, LEED, EDGE certifications and make ESG reports.

Environmental efficiency: Reduce the pressure on the environment, isolate multi-layer packaging that is difficult to recycle, avoid having to put it in conventional solid waste incinerators, and minimize the emission of CO₂ and harmful substances into the air. Replacing traditional terracotta bricks and cement bricks with RENOVA composite bricks directly cuts CO₂ greenhouse gas emissions, and saves mineral resources (clay, limestone) contributing to supporting the Construction Industry Decarbonization Roadmap. Create a sustainable chain of rice husk by-products for farmers, contributing to reducing fine dust pollution in the Mekong Delta region due to rice husk burning.

Conclusion: We realize that the project has great potential and brings many core values to the community - environment - economy. The Company agrees to coordinate with the project including:

Coordinating research and testing of mixing technology, improving processing processes to optimize the quality, durability and safety of RENOVA wind cement tiles products.

Promote the inclusion of products in projects that are applying sustainable development standards, in order to meet green building certifications such as LOTUS, LEED, EDGE and ESG integrated reports.

Accompanying in communication campaigns to raise awareness of the circular economy, shaping the trend of using green building materials in the future.

**ANH THUY TECHNOLOGY AND EQUIPMENT
SERVICE AND ENVIRONMENT JOINT STOCK
COMPANY**

GENERAL DIRECTOR



Nguyễn Thùy Anh