THE PROCESS OF CREATIVE PRODUCT DESIGN FROM LATEX WITHIN A COMMUNITY CONTEXT WITH AN ENVIRONMENTAL FRIENDLY

Noppachai Pujirakasem[1], Noppadon Sangwalpetch[2]
Faculty of Fine and Applied Arts, Suan Sunandha Rajabhat University, Thailand
E-mail: s6556382014@ ssru.ac.th, noppadon.sa@ssru.ac.th***

ABSTRACT

The process of creative product design from latex within a community context with an environmentally friendly It is qualitative research that focuses on finding design processes that are in line with the community context. Taking into account environmental friendliness according to the BCG concept, strengthen the community by introducing latex that improves its properties. According to research, latex can be molded into two processes: sheet molding and foam rubber molding, but the process suitable for the community context is sheet casting because it is a form that can use basic equipment that the community has or can reinvent. The process consists of: 1) preparing the mold, preferably using a material with a smooth surface to create a pattern to prevent material sticking; 2) latex is mixed with the following ingredients:, namely sulfur, wingstay L, oxide, and SSF; and 3) mixing the color as needed.The resulting process can create community innovations that are in line with the BCG Economy concept to meet the needs of today's consumer groups, including the development of export products through uniquely created products. It will also result in income distribution. Strengthen communities, which can reduce inequality. It is environmentally friendly, affecting sustainable development.

Keywords: Creative Products, Latex Community, BCG

INTRODUCTION

Latex and thickener derived from rubber trees (Hevea brasiliensis) are materials with significant potential due to their unique properties such as flexibility, durability, and water resistance. Thailand is also the world's leading producer of natural rubber. This makes it an important option to explore the potential of rubber. in creative product design. However, the use of rubber in Thailand is often limited to tires, gloves, and other industrial products. As a result, the potential of rubber in creative design remains unutilized and has not been adequately studied. (Thailand Institute of Scientific and Technological Research, 2023 and Department of Science Service, 2023)

The development of creative products with the BCG Economy concept is another approach to help create added value, which not only promotes the economy but also holistic economic development that will develop the economy in three dimensions at the same time: Bioeconomy, focusing on the use of biological resources to create added value. It is linked to the circular economy, taking into account the reuse of various materials as much as possible. Both of these economies are under the Green Economy, which is an economic development that focuses not only on economic development. But it must develop in parallel with social development and environmental protection in a balanced manner to ensure stability and

sustainability at the same time. By transforming Thailand's advantages from biodiversity and culture into competitiveness with global competitiveness, Income distribution to communities reduces inequality. Strong communities, eco- friendliness, and sustainable development (National Science and Technology Development Agency, 2023)

Therefore, the creation of a process for designing creative products from latex with the concept of BCG economy, combined with the knowledge base on creative economy that is linked to the community context, will create community innovations that can meet the needs of today's consumer groups. It will also result in income distribution. Strengthen communities, which can reduce inequality. It is environmentally friendly, affecting sustainable development.

RESEARCH OBJECTIVES

To create a process for creating latex products within a community context.

RESEARCH METHODOLOGY

The process of designing creative products from latex Within the community context It is qualitative research that focuses on creating a process for designing creative products that are relevant to the community context. The process and algorithm for conducting research are as follows:

1. Creation of latex-forming processes and methods
2. Analysis of latex molding processes appropriate to the community context
3. Creating prototype products through community involvement

RESULT

The process and methodology for forming latex in this research include:

1. Sheet molding is done by mixing latex with ingredients at the right rate and pouring it into molds. When dried, the workpiece is obtained in the form of rubber sheets.

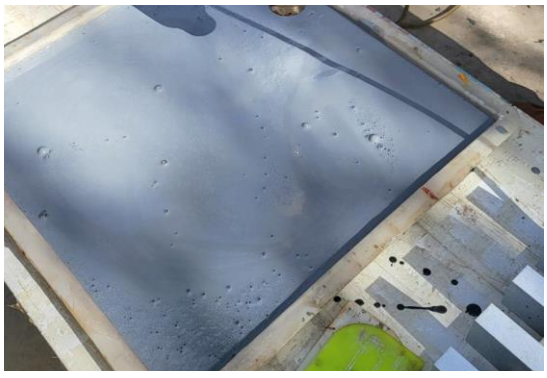

Figure 1 Workpiece from sheet molding
Source: Picture by researcher, Noppachai Pujirakasem

2. Forming with the foam rubber technique by beating rubber to create foam. Add the ingredients and beat well. Pour into molds, bake, or steam. Rinse with clean water and dry, resulting in porous sheet specimens.

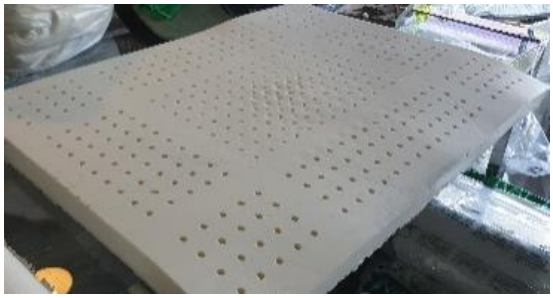

Figure 2 Workpiece from foam rubber molding
Source: Picture by researcher, Noppachai Pujirakasem

The molding process in this research, in both forms, contains ingredients consisting of latex mixed with sulfur to stabilize the rubber. Wing Stay L (prevention of degeneration), Xing Oxide (stimulants), SSF (accelerators), and color The addition of such substances can give latex the properties of 50+ shore A strength, 6MPa tensile strength, and 350% stretch resistance. (Pujirakasem, & Sangwalpetch, 2023)

Table 1: Advantages and disadvantages of latex molding process

process	Advantage	disadvantages
Sheet molding	- Easy formability It is well distributed in molds. - Able to maintain the image in a timely manner.	- Weighted - The surface has air bubbles and marks from the mold.
Forming by foam rubber technique	- Easy formability It is well distributed in molds. - Dry within 1 minute (very fast). - Highly flexible, soft	- The surface of the rubber is porous. When there is tension, tearing occurs easily. - There is a collapse due to compressive force

From Table 1, it is found that both molding processes can create rubber material parts. It has corresponding advantages, including easy forming. It has good distribution in the mold and can stabilize well in a given time, with the foam rubber form being able to dry within 1 minute.

Table 2: Analysis of the molding process with community in mind

format	**Equipment**	**process**	**suitability**
Sheet molding	Basic equipment that the community has can be used, or the community can reinvent it.	is simple and does not require advanced technology.	suitable

format	Equipment	process	suitability
Forming by foam rubber technique	Specific equipment is required.	It requires a multi-step process, and technology is required to produce it.	Inappropriate

From Table 2, the appropriate process for creating a product is sheet casting because it is a form that can use basic equipment that the community has or can reinvent. The process is simple and does not require advanced technology.

From the results of the analysis, the process was developed to be suitable for use in product design, with additional steps including mixing colors and creating molds with textures and patterns to make the product have beautiful colors and patterns and interesting textures.

1. Prepare the mold. Should choose materials with a smooth surface to create patterns to prevent sticking to the material.
2. Prepare latex. Mix the latex with ingredients including sulfur, wingstay L, and SSF oxide, and mix the color as desired.
3. Pour the pre-mixed latex into a mold.
4. Steam it up.
5. It is bent to the desired shape.

Figure 3 Prototype
Source: Picture by researcher, Noppachai Pujirakasem

CONCLUSION AND DISCUSSION

The context of the community is an important part of creating a suitable process for creating latex products, with the steps consisting of: 1) preparing the mold; 2) choosing materials with a smooth surface to create the pattern to prevent the sticking of the material; 3) pouring the finished latex into a mold; 4) steaming it; and 5) bending it to the desired shape. From this step, it can be seen that it is a model that can use basic equipment that the community has or that the community can invent new ones. Creating processes that are relevant to the community context can create community innovations that can meet the needs of today's consumer groups, including developing and exporting products through uniquely creative means. It will also result in income distribution. Strengthen communities, which can reduce inequality. It is environmentally friendly, affecting sustainable development. This is in line with Phriwanrat, K. (2020), who has given guidelines for community development towards creative cities that should be a collaboration between local communities and the public sector. In the creation of cities through the development of the environment. Social structure, economic structure, and the integration of cultural assets, history, customs, and local customs with modern technology to create a city with an atmosphere conducive to business creation or creative industries

REFERENCES

Thailand Institute of Scientific and Technological Research. (2023). Processing rubber into value-added products. Retrieved from https://www.mhesi.go.th/index.php/ news/ 5261-2021-12-08-04-35-16.html

National Science and Technology Development Agency : NSTDA - Thailand. (2023). BCG Economy. Retrieved from https://www.nstda.or.th/home/knowledge_post/bcg-by-nstda/

Department of Science Service. (2023). Natural rubber products. Retrieved from http://otop.dss.go.th/index.php/knowledge/interesting-articles/257-2018-11-30-02-25-50

Pujirakasem, N., & Sangwalpetch, N. (2023). Innovative design approaches: Exploring the potential of latex in creative material production. International Academic Multidisciplinary Research Confrerence In Oxford 2023. From http://icbtsproceeding.ssru.ac.th/index.php /OXFORD2023/article/view/1088

Phriwanrat, K. (2020). The research and development of tie-dyed handicraft products form Krabi Province for the designing of Ko Klang Community's contemporary souvenirs, leading Krabi Province to Creative city. Journal: Humanities, Arts and Social Sciences Studies, (20)1, 119-137, Dec 2018.