



## GreenGrid Guard

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## **1.0 EXECUTIVE SUMMARY**

The goal of this product is to provide a sustainable packaging solution by using recycled materials like books and papers. Its primary goals are to assess bubble wrap in keeping with sustainable packaging guidelines and investigate the potential benefits of utilising post-consumer books and papers. The goal is to determine the beneficial qualities of bubble wrap that can be used to create substitute protective packaging materials. Additionally, post-consumer paper and books are being suggested as a sustainable material for protective packaging.

Next, the effectiveness, efficiency, and cyclicity of bubble wrap are compared to sustainable packaging principles in this study. The evaluation revealed that bubble wrap has three key characteristics: its ability to function as a versatile packaging material, its cost-effectiveness and minimal material consumption, and its cyclicity due to its recyclability. Making bubble wrap out of paper requires a few different steps in the process.

In order to create sustainable packaging, the project's conclusion suggests using recycled materials like books and papers. This approach would not only cut trash but also represent an innovative and significant step toward packaging that is sustainable. The study emphasizes the need of engineering and designing mindful products, the need for increased recycling rates, and the necessity of creative solutions for post-consumer textile waste.

Through our data we collect from the respondent, we can see that the most important factor for them when choosing bubble wrap is durability. In our product we take this factor as our number one aspect to look into in making good used paper and books bubble wrap. People also stated that they prefer to buy from online rather than buying it from supermarkets, speciality stores, and some of them only use bubble wrap from their shopee parcel.

## **2.0 INTRODUCTION**

In today's changing business setting, creative solutions are in high demand, particularly those that address critical environmental problems without losing functionality. The introduction of eco-friendly bubble wrap created from waste represents a significant advance in sustainable packaging options. Unlike traditional bubble wrap, which is known for its negative environmental impact due to its non-biodegradable nature, this innovative product combines cutting-edge technologies and environmentally friendly practices to transform waste materials into a useful alternative.

Its design revolves around a geometric pattern that improves material usage while keeping strong protective properties. This purposeful approach not only minimises the quantity of material needed per unit, but also improves its durability and shock-absorbing properties, ensuring that it passes demanding packing criteria while minimising its impact on the environment. The use of such environmentally friendly materials supports global efforts to reduce waste from plastic and encourage the use of recycled materials. Businesses and individuals can contribute meaningfully to waste reduction and sustainable practices by converting waste into a valuable commodity for packaging. This innovation shows a dedication to environmental care while providing practical, accessible solutions for a variety of industries, including logistics, e-commerce, manufacturing, and retail.

### **2.1 Problem Statement/Issues**

Nowadays, people tend to use delivery and e-commerce services. Therefore, the use of plastic bubble wrap is increasing day by day to fulfil customer needs. Function of bubble wrap in this industry which is packaging and shipping is to protect parcels from impact, shocks and vibration during transit. It is to minimise the risk of damage towards fragile items. Not only that, it also offers to prevent items from shifting and colliding with each other inside the box.

Unfortunately, the use of plastic bubble wrap leads to several problems. Firstly, it was made from non-biodegradable plastic which contributed to pollution and landfill waste. The

production of it keeps increasing but it will take hundreds of years to decompose. Moreover, to produce bubble wrap, it will require significant amounts of raw materials, energy and water that contribute to resource depletion. Lastly, bubble wrap is often not accepted in regular recycling programs because it can clog the machinery. This leads to increased disposal challenges and waste management issues. Therefore, our company came out with GreenGrid Guard, a bubble-like wrap but uses recycled waste which can give alternative solutions in this matter while applying the same function just like bubble wrap. Thus, not only we can create eco-friendly products but we can reduce waste at the same time.

## **2.2 Methodology**

Our organisation has used a variety of approaches to collect data for feedback on the services we have offered to consumers.

### **1. Surveys**

The poll was done online using Google Forms and circulated to people via social media. The objective of this strategy is to raise respondents' awareness of environmental issues while simultaneously achieving to save trees on earth. Not only that, but responders may provide their feedback and recommendations on our items created from recycled materials such as papers and books.

### **2. Research**

Our team members have previously conducted research, and the findings relate to the materials used in the creation of the wrap. Trees are usually the victims while making papers and books, which can also harm the environment throughout the process. That is why we sought to educate people about using recycled products to prevent harm and save the environment. Finally, we will analyse the responses obtained through a survey in order to provide answers to the difficulties identified by respondents with our goods, as well as the improvements that are required in terms of their efficacy and efficiency.