

## Study of Mechanical Properties of Leno Woven Bags in Lower Weight Capacities

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**Abstract :** The study aimed at analyzing and understanding the design and performance properties of leno woven sacks specifically meant for holding lower-weight goods under the category of lower-weight capacities. The sacks are a huge part of the agro-based packaging industries, which helps in keeping the perishable produce, especially fruits, fresh during transit and storage. Nowadays, Leno bags are primarily made from polypropylene, mainly due to its cost-effectiveness, reusability and high strength with low weight properties, making it an ideal packaging solution for transportation. The design parameters are noted, and major properties like tensile strength, abrasion resistance, puncture resistance, bursting strength, impact resistance, stiffness and bagging behaviour have been analyzed for lower weight capacities. An examination of these particular weight categories will provide valuable information on how to scale performance. Currently, there are standards available for only 25 kg and 50 kg Leno sacks, and this study will further enhance the already existing testing standards and also provide tested structure-property analysis for lower-weight Leno sacks. Hence, the results of this research can provide significant insights for researchers, manufacturers and industry experts with the goal of improving the quality and longevity of Leno woven sacks, thereby developing the packaging technology.

**Keywords :** leno bags, structure-property analysis, agro-based packaging, lower weight sacks

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