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Formulate a Compound for Internationally Competitive Resin Rubber Shoe Soles

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ABSTRACT

Sole is a major component of shoes. Shoe soles can be manufactured by using different types of materials as well as techniques.

30% of the soles are being manufactured in sheet form and later cut the soles of required size. The materials such as leather, vulcanized rubber, resin rubber, polyurethane rubber and ethylene vinyl acetate polymer are used to manufacture soling sheets. The unit soles are produced from poly vinyl chloride, thermoplastic rubber and polyurethane. [1]

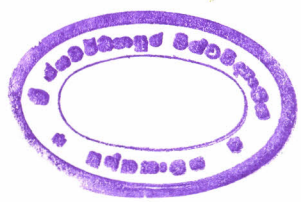
The two basic moulding techniques used are compression moulding and injection moulding.

In this project we have concentrated on compression moulded resin rubber soling market, which continuously expands with a high demand for highly fashionable footwear where leather can be directly substituted with high quality resin rubber soles. Resin rubber soles are as light as leather in weight and can be produced in many different colours and fashions.

The objective was to develop a compound formulation, which satisfies the internationally recognized requirements for resin rubber shoe soles. We tried to get the best formulation, which is cost effective to manufacture in Sri Lanka and also to give final product properties required in the international market.

We have studied the possibility of using a blend of natural and synthetic rubber in the compounds in order to improve most of the properties of the final product in a cost effective manner. The processing techniques were the same as for the existing compound with minor modifications to make the production more flexible.

The product obtained has good properties in compliance to the international footwear standards, however the formulation needs further modifications to over come certain processing difficulties. Results show that the replacement of standard raw materials with cheaper substituents have led to disagreement with one factor or other either in processing or in properties of the finished product. Therefore, it is necessary to carry out further studies on raw materials and their effects more closely against the existing operation system in order to find out the optimum dosage and the best combination of ingredients.



LIST OF CONTENTS