NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

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Investigating the cost effectiveness, optimality and robustness of a decision made at General Beltings on a developmental Rubber Conveyor Belt Cover compound.

BY

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ABSTRACT

Multiple regression techniques were used to estimate parameters for the proposed model for the rubber conveyor belts at General beltings whose tensile strength should be at least 25Mpa.

General Beltings have difficulties in coming up with a reliable production process which meet the current specifications. In trying to deal with the quality requirement issue, management can not cope with the resource demand. An optimal solution/model has been suggested which takes into account costs involved.

Data from the company were collected and analysed to estimate the parameters that can satisfy current specifications. The estimates were used to develop and evaluate a mathematical model of the production process.

Robust parameter design was carried out to focus on the choice of levels of the controllable variables to achieve insensitivity to inevitable changes in the noise variables.

A numerical application of the multiple regression model developed was done using data from the same production process after natural noise factors were varied to find the most robust conditions.