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TOTAL QUALITY MANAGEMENT APPLICATION ON MEDIUM DENSITY FIBER BOARDS INDUSTRY



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Supervised by

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This thesis was submitted to the Department of Mechanical Engineering of the University of Moratuwa in partial fulfilment of the requirements for the Degree of Master of Engineering in Manufacturing Systems Engineering

**Department of Mechanical Engineering
University of Moratuwa
Sri Lanka
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DECLARATION

This Dissertation paper contains no material which has been accepted for the award of any other degree or diploma in any University or equivalent institution in Sri Lanka or abroad, and that to the best of my knowledge and belief, contains no material previously published or written by any other person, except where due reference is made in the text of this Dissertation.

I carried out the work described in this Dissertation under the supervision of
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ABSTRACT

A TQM based approach has been developed to improve the quality of products of MDF boards manufacturing industry. The methodology developed has been implemented in a selected local company and a considerable improvement in the quality of boards have been observed. As the MDF boards manufacturing process is almost the same everywhere, the methodology implemented for quality improvements can be used for the entire MDF industry.

As an initial step, a customer survey was carried out on the external customers. This survey covered the customer perception about quality of purchased boards and the product variety needed by the customers. For this survey, it used five MDF board manufactures both locally and in abroad. A questioner survey method was used for this purpose. Outcomes of this are poor quality boards, poor response for the customer complains and unavailability of customer preferred boards.

Depending on the external survey outcomes, another survey was carried out on internal customers to reveal the exact reasons for poor quality. Main outcomes of this are, poor quality control method implemented, poor customer orientation, inadequate quality parameters and lack of quality related parameters exist within the industry.

As a solution for these problems, a new TQM based quality control methodology has been developed and implemented for the entire production process. Further a quality council system and work team involvement method has been introduced to address the issues from both internal and external customers.

Then process improvement technique was implemented in order to further improve quality and minimize waste. Here the Kaizen theory has been used as the main tool for process improvement. A performance measure was introduced to measure the success of the newly implemented system.

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