

**UNIVERSITI TEKNOLOGI MARA**

**ENVIRONMENTAL TESTING STANDARD  
IN MALAYSIAN AUTOMOTIVE INDUSTRY:  
A CASE STUDY OF THE VEHICLE COMPONENT  
ELECTRICAL DOOR CONTROL MODULE**

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Dissertation submitted in partial fulfillment of the requirements  
for the degree of

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## CANDIDATE'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of University Technology of MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This dissertation has not been submitted to any other academic institution or non-academic institution for any other degree of qualification.

In the event that my dissertation is found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulations of University Technology of MARA.

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## ABSTRACT

Environmental crisis is a global issue that generates a massive impact and consciousness in various sectors including in the automotive industry. Environmental sustainability is the ability to sustain devices or qualities that are valued in the physical environment. In the automotive environmental factors, each of vehicle components performance and reliability has to be ensured comply with the requirement under the critical environment characteristics. The purpose of this research paper is to identify the environmental experiment methods of the automotive components in order to establish environmental testing standards and guidelines. This study furthermore examine the characteristics and performance of the vehicles component based on the established environmental experiment guidelines, and then analyze the data of the experiment of the Electrical Door Control Module (EDCM) components, in order to validate the environmental experiment criteria, conform to the automotive environmental regulation and requirements.

This research paper of the automotive component (EDCM) environmental sustainability assessment, involved details study of the experimental procedures, which is determine according to the company requirement of the component reliability test specification, and based on automotive environmental standards references of the Japanese Automobile Standard, General Rules of the Environmental Testing Methods for Automotive Electronic Equipment (JASO, 1994); and Japanese Industrial Standard (JIS, 1999 and 1994). This research describes a structured standard of the testing method related to the environmental factors for automotive component development. Based on the formulate criterion in this environmental testing standards, this paper explain the environmental characteristics framework which can be measure and becomes an effective tools to support and evaluate environmental criteria items in vehicle component product testing and development process.

**Keywords:** Environmental Testing Standard, Environmental Sustainability, Automotive environment characteristics, Automotive Component, Electrical Door Control Module, Automotive component experimental methods.

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