

**INVESTIGATE THE DELAY OF CRACK  
INITIATION USING STOP DRILLED HOLES ON  
MILD STEEL**

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We certify that the project entitled “Investigate the Delay of Crack Initiation Using Stop Drilled Holes on Mild Steel” is written by Ridzuan Shah Bin Razi Varathau Rajoo. We have examined the final copy of this project and in our opinion; it is fully adequate in terms of scope and quality for the award of the degree of Bachelor of Engineering. We herewith recommend that it be accepted in partial fulfilment of the requirements for the degree of Bachelor of Mechanical Engineering.

Examiner

Signature

INVESTIGATE THE DELAY OF CRACK USING STOP DRILLED HOLES ON  
MILD STEEL

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Thesis submitted in fulfillment of the requirements  
for the award of the degree of  
Bachelor of Mechanical Engineering

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## **SUPERVISOR'S DECLARATION**

I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Mechanical Engineering.

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Date: November 2009

## **STUDENT'S DECLARATION**

I hereby declare that the work in this project is my own except for quotations and summaries which have been duly acknowledged. The project has not been accepted for any degree and is not concurrently submitted for award of other degree.

Signature

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## LIST OF SYMBOLS

$A$	Cross Sectional Area
$mm$	Millimetre
$s$	Second
$t$	Thickness

$l$	Length
$w$	Width
$d$	Diameter
$x$	Horizontal distance
$y$	Vertical distance
$N$	Newton
$\sigma_y$	Yield Stress
$P$	Load
$K_t$	Stress concentration factor
$\delta$	Ancillary hole
$E$	Modulus of Elasticity
$\sigma$	Stress
$\varepsilon$	Strain

### **LIST OF ABBREVIATIONS**

AISI	American Iron and Steel Institute
ASTM	American Society for Testing Materials
FE	Finite Element

FEA      Finite Element Analysis

FEM      Finite Element Model