

FATIGUE LIFE AND CRACK GROWTH ANALYSIS OF KEYHOLE SPECIMEN

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## TABLE OF CONTENTS

<b>SUPERVISOR’S DECLARATION</b>	ii
<b>STUDENT’S DECLARATION</b>	iii
<b>DEDICATION</b>	iv
<b>ACKNOWLEDGEMENTS</b>	v
<b>ABSTRACT</b>	vi
<b>ABSTRAK</b>	vii
<b>TABLE OF CONTENTS</b>	viii
<b>LIST OF TABLES</b>	x
<b>LIST OF FIGURES</b>	xi
<b>LIST OF SYMBOLS</b>	xiii
<b>LIST OF ABBREVIATIONS</b>	xiv

### **CHAPTER 1            INTRODUCTION**

1.1	Introduction	1
1.2	Problem Statement	3
1.3	Objectives	4
1.4	Scope	4
1.5	Organization of Report	4

### **CHAPTER 2            LITERATURE REVIEW**

2.1	Introduction	5
2.2	Fatigue Analysis	5
2.3	Crack Growth Analysis	8
2.4	Conclusion	10

### **CHAPTER 3            METHODOLOGY**

3.1	Introduction	11
3.2	Flow Chart	11

3.3	Structural Modeling	12
3.4	Finite Element Based Fatigue Life Analysis	13
3.5	Strain-life Method	14
3.6	Structural Analysis	15
3.7	Crack Growth	16
	3.7.1 Concept of Stress Intensity	17
	3.7.2 Fatigue Crack-Propagation and LEFM	18
3.8	Material Information	20
3.9	Loading Information	21
3.10	Conclusion	21

## **CHAPTER 4          RESULTS AND DISCUSSION**

4.1	Introduction	23
4.2	Finite Element Modeling and Analysis	23
4.3	Comparison Between Predicted Existing and Experimental Results	29
4.4	Crack Growth	32
4.5	Crack Size	36
4.6	Conclusion	36

## **CHAPTER 5          CONCLUSION**

5.1	Introduction	37
5.2	Conclusion	37
5.3	Recommendation	37

<b>REFERENCES</b>	<b>38</b>
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**LIST OF TABLES**

<b>Table No.</b>	<b>Title</b>	<b>Page</b>
2.1	Composition of 309S stainless steel (wt%)	9
2.2	Tensile properties of 309S	9
3.1	Monotonic and cyclic properties of the MANTEN and RQC100 materials	20
4.1	Monotonic and cyclic properties of the MANTEN and RQC100 materials	25
4.2	Experimental actual life and predicted fatigue life using the strain-life method	30
4.3	Comparison crack size between the different loadings for MANTEN and RQC100 for various loading time histories	36

## LIST OF FIGURES

<b>Figure No.</b>	<b>Title</b>	<b>Page</b>
2.1	Load time histories	8
3.1	Flow chart shows the overall flow of the process of this project	11
3.2	Flow chart of fatigue analysis	14
3.3	The transition from stage I to stage II crack growth	16
3.4	The concept of stress intensity	17
3.5	Elastic stress concentration	17
3.6	The 3 modes of cracking used in fracture mechanics	18
3.7	Crack propagation rates at constant $\Delta K$	19
3.8	SAE load-time histories	21
4.1	SAE keyhole specimen in millimeters	24
4.2	Load-time histories based on SAE	25
4.3	Loading and constraints of the SAE keyhole specimen	26
4.4	Location of strain gauge for the SAE keyhole experimental setup	27
4.5	von Mises stress contour of the SAE keyhole specimen	27
4.6	Maximum principal stresses contour plotted for the SAE keyhole specimen with 30 kN	28
4.7	Predicted fatigue life contours for RQC100 material with the maximum load 30 kN	28
4.8	Comparison of the predicted fatigue life using variable loading to experimental fatigue life for MANTEN and RQC100 material	31
4.9	Crack growth rates versus stress intensity ( $\Delta K$ ) for R-ratio 0.5	33
4.10	Crack growth rates versus stress intensity ( $\Delta K$ ) for R-ratio 0.5	33
4.11	Life (cycles) versus loading (N) for MANTEN and RQC100 using SAETRN loading method	34

4.12	Life (cycles) versus loading (N) for MANTEN and RQC100 using SAESUS loading method	35
4.13	Life (cycles) versus loading (N) for MANTEN and RQC100 using SAEBKT loading method	35

## LIST OF SYMBOLS

$N_f$	fatigue life
$\sigma'_f$	fatigue strength coefficient
E	modulus of elasticity
b	fatigue strength exponent
$\varepsilon'_f$	fatigue ductility coefficient
c	fatigue ductility exponent
$K_{IC}$	fracture toughness
$\Delta K$	crack tip intensity factor
$\Delta K_{th}$	stress intensity factor range
$\Delta K_{eff}$	stress intensity factor range
$da/dN$	crack propagation rate
$\beta$	crack inclined angle
$\theta_o$	crack growth direction
E	Young's modulus
$S_U$	Ultimate tensile strength
$\sigma'_f$	Fatigue strength coefficient
b	Fatigue strength exponent
$\varepsilon'_f$	Fatigue ductility coefficient
c	Fatigue ductility exponent
$s_f$	Fatigue strength
$k'$	Cyclic strength coefficient
$n'$	Cyclic strain hardening exponent

**LIST OF ABBREVIATIONS**

LEFM	linear elastic fracture mechanics
S-N	total-life
SAETRN	tensile mean loading history
SAESUS	compressive loading history
SAEBKT	zero mean loading history
SEM	scanning electron microscopy
BEM	Boundary Element Method
SWT	Smith-Watson-Topper
CAD	computer-aid design
PSB	persistent slip band
FEA	finite element analysis
SAE	Society of Automotive Engineers