

EFFECTS OF THICKNESS DIFFERENCE AND LOADING
DIRECTION ON FATIGUE PROPERTIES OF TAILORED WELDED
BLANKS

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Thesis submitted in fulfillment of the requirements
for the award of the degree of
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JUNE 2013

EXAMINER'S DECLARATION

I certify that the thesis entitled "Effect of Thickness Difference and Loading Direction on Fatigue Properties of Tailored Welded Blanks" is written by Angelina Anak Lawrence. I have examined the final copy of this report and in my opinion, it is fully adequate in terms of language standard, and report formatting requirement for the award of the degree of Bachelor of Mechanical Engineering. I herewith recommend that it will be accepted fulfillment of the requirements for the degree of Bachelor of Mechanical Engineering.

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LIST OF SYMBOLS

N	Spindle speed
CS	Cutting speed
d	Work piece diameter
v_f	Feed rate
f	Feed
σ	Engineering stress
ϵ	Engineering strain
E	Modulus of elasticity

LIST OF ABBREVIATIONS

TWB	Tailor welded blank
TIG	Tungsten inert gas
MIG	Metal inert gas
GTAW	Gas tungsten arc welding
GMAW	Gas metal arc welding
LDH	Limiting dome height
FLD	Forming limit diagram
SEM	Scanning Electron Microscope
HAZ	Heat affected zone
EDM	Electro Discharge Machine
ASTM	American Society for Testing and Materials
SAE	Society of Automotive Engineers
AISI	American Iron and Steel Institute