

FINAL YEAR PROJECT REPORT

FATIGUE BEHAVIOUR OF SINTERED STEEL (HAP 10) UNDER DIFFERENT TEMPERING TEMPERATURES

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ADVANCED DIPLOMA IN MECHANICAL ENGINEERING
(EN23/05)

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MAY 1996

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ACKNOWLEDGEMENT

Praise and grace to Allah s.w.t. Creator of the universe for under His command, we manage to complete and present our final project.

This final project (KJM 565) is prerequisite in attaining an Advance Diploma in Mechanical Engineering from the engineering school, I.T.M. In completing this project, we are totally indebted to our fellow lecturers, technicians of Mechanical Engineering Department of Engineering School and our friends. Their contributions are vital and very helpful.

The credit also goes to Standard Industrial and Research Institute of Malaysia (SIRIM) for conferring us the material HAP10 that enables us to proceed with this project.

We are very grateful to Dr. Mohamad Nor Berhan, our project advisor for having a faith in our capability to carry out this project. Since this is the first of its kind and lacking of references, we were faced with uncertainty. However we managed to get through. Thank you to Dr. Mohamad Nor Berhan. His guidance, advice, information and knowledge ease the difficulties.

We would like to thank Dr. C.K. Ow, our academic advisor for his continues support, counsel and encouragement. Thank you for your time and thoughts and your keenest interest in the progress of this project.

We would also like to express our gratitude to the staff of Mechanical Engineering Department especially En. Abu (Fracture Lab Technician), En. Abdul Halim (Machine Shop Technician) and En. Ayub (Material Science Lab Technician) for their contribution and for helping our way in conducting tests and handling various types of machines. Their expertise provides the knowledge and information that we really need.

Lastly, but never the least, to our friends and lecturers who involve directly or indirectly to this project, we owe you. Thank you.

Awg. Faizol
Habiborlah

1.0 INTRODUCTION

1.1 Introduction of Steel

Steel is a material composed primarily of iron. Many steels contain more than 90% iron. Most carbon steels contain more than 99% iron.

All steel contains a second element, which is carbon. Many other elements, or alloy, are contained in most steels, but iron and carbon are the only elements that are in all steel. The percentage carbon in steel ranges from just above 0% to approximately 2.0%. Most steels have between 0.15% and 1.0% carbon.

Steels with least carbon are more flexible and ductile, but they are not as strong. However, as the carbon content increases, so do strength, and brittleness.

Steel can be classified on the basis of:-

- (i) Composition - Carbon Steel
 - Alloy Steel
- (ii) Finishing Methods - Hot-rolled steel
 - Cold-rolled steel
- (iii) Product Form
 - bar
 - plate
 - sheet
 - strip
 - tubing
 - Structural shape

1.2 Steel Making Process

In the first step, iron ore mined from the ground and shipped to the steel-making centre. There, the iron ore will mix with coke, limestone, and hot gases inside a blast furnace. The products coming out of the blast furnace are pig iron, slag and hot gases. The pig iron used to make steel or cast iron.