

**HIGHER TECHNICAL INSTITUTE**

**MECHANICAL ENGINEERING DEPARTMENT**

**DIPLOMA PROJECT**

**CHARACTERISTICS AND PERFORMANCE OF  
HOUSEHOLD REFRIGERATING APPLIANCES**

by

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**CHARACTERISTICS AND PERFORMANCE OF  
HOUSEHOLD REFRIGERATING APPLIANCES**

by

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**Project Report**

**Submitted to**

**the Department of Mechanical Engineering  
of the Higher Technical Institute**

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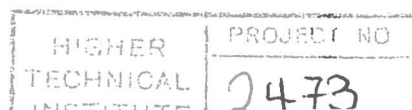
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I feel the necessity to dedicate this trial  
to my parents who didn't deny to sacrifice  
anything for the seek of my studies

## SUMMARY

This diploma project has the following objectives:

1. To study ISO8187:1991 and appreciate the essential characteristics for household refrigerators specified by the above standard.
2. To make measurements and perform tests on a number of household refrigerators.
3. To prepare test reports for the refrigerators under examination.
4. To indicate whether the requirements of ISO8187:1991 are met.

The Terms and Conditions of the project are:

1. The student should find and supply the refrigerators to be tested.
2. Specialised tests were to be carried out at the HTI laboratories.

As far as the refrigerators are concerned only two were found and any inaccuracy is mainly due to the fact that:

The refrigerators used were old and were used in other experiments before.

The refrigerators were supplied by the electrical department.

Although the standard 8187:1991 is specified, due to the fact that I was not able to find it, the standard 7371 was finally used.

This standard has sixteen tests with specified procedure and ranges within which the readings must be.

These tests are separated into the following categories:

1. Dimension measuring tests.
2. Refrigerators construction tests.
3. Electrical characteristics tests.

These tests can also be made individually for the study of a particular characteristic.

The safety requirements applicable to refrigerating systems of household refrigerators are under consideration.

## INTRODUCTION

Although the standard 8187:1991 is specified due to the fact that I was not able to find it, the standard 7371 was finally used.

This International Standard specifies the essential characteristics of household refrigerators with or without chiller ice-making or frozen food storage compartments which are wholly factory assembled, and lays down the methods of test for the checking of this characteristics.

It does not apply to food freezers or combined refrigerator/freezers. It does not include refrigerating performance characteristics and tests or particular definitions for refrigerators cooled by internal forced air circulation.

When it is desired to verify the performance of a refrigerator of a given type in relation to this international standard, all the tests described should be in principle applied to one and the same unit.

These tests can also be made individually for the study of a particular characteristic.

Where no test method is specified, the particular requirement concerned shall be considered as a recommendation.

In the effort to complete the tests specified by the standard, a difficulty I met, was in finding some chemicals which are either not used in Cyprus or are too expensive. Furthermore problems due to lack of experience made it hard to get accurate readings. Lack of time due to industrial training was another drawback.

Generally speaking the need for standardisation is a world need, which finally results in better products. Making standards will certainly help in communication between peoples of different countries.

This task of standardisation of products has been taken up by different organisations one of which is ISO.



ISO (the International Organisation for Standardisation) is a world wide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees.

Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee.

International organisations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75% approval by the member bodies voting.

International Standard ISO7371 was prepared by Technical Committee ISO/TC86, Refrigeration. It cancels and replaces ISO Recommendations R824 and R825, of which it constitutes a technical revision.

ISO has 110 members, one in each country. CYS the (Cyprus organisation for Standards and control of Quality) is a member of ISO.