

COMPARITIVE STUDY
OF THE EFFECT OF DIFFERENT CURING
CYCLES ON THE DIMENSIONAL ACCURACY
OF HEAT-CURED ACRYLIC BASE MATERIAL

Thesis
Submitted in Partial Fulfilment of
the Requirements for the Master Degree
in Prosthetic Dentistry

BY

Mohammed Mostafa Kamal Shehata

B. D. S. Faculty of Dentistry Tanta Universtry

Faculty of Dentistry
University of Alexandria

1983

Supervisors

Prof. Dr. A. A. Kamar

*Prof of Dental Material Department
Vice Dean of Faculty of Dentistry
Alexandria University*

Prof. Dr. S. M. Soliman

*Prof of Production Department
Faculty of Engineering
Alexandria University*

Asst. Prof. Dr. A. M. El-Sabrouty

*Asst. Prof. of Prosthodontics Department
Faculty of Dentistry
Alexandria University*

Dr. N. El-Khodary

*Lecturer of Prosthodontics Department
Faculty of Dentistry
Alexandria University*

SUMMARY AND CONCLUSION

A comparative study of the effect of five different curing cycles on the dimensional accuracy of one type of heat cured acrylic denture base material was done.

Five bases of double thickness of base plate wax were prepared upon five standard stone casts for every group: total of 25 specimens were prepared for the five groups. Standard processing steps were applied for all groups. Each curing cycle was applied upon each group specimens. The amount of separation at the posterior palatal border of the upper denture bases was measured after deflasking by using tool makers' microscope which measures with least reading 0.01mm.

The results showed that there was a space between the denture bases and their original casts. The space was found not exceeding half millimeter at all points for all groups. This space was greatest at the centre of the palate then gradually decreases toward the the crest of the ridge where it reaches the least amount. On comparing the five curing cycles, it was

found that the third curing cycle (60°C for 30 minutes, 71° for 20 minutes and 100°C for 45°C) showed the greatest total amount of warpage and statistically There was a significant difference between it and the other groups, and there was no significant difference among these other groups.