

بسم الله الرحمن الرحيم



-Call 6000





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم





جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة يعيدا عن الغيار













بالرسالة صفحات لم ترد بالأصل



The Microshear Bond Strength of Repaired Composite as Affected by Different Surface Treatments

Thesis

Submitted to Faculty of Oral and dental Medicine

Cairo University

In Partial Fulfillment of the Requirements

of Doctor Degree in Dental Surgery

(Operative Dentistry)

By
Dana Ibrahim Ashour

BDS (2000), MDS (2006)

Faculty of Oral and Dental medicine

Cairo University



" رَبِّ أَوْزِعْنِى أَنْ أَشْكُرَ نِعْمَتَكَ الَّتِى أَنْعَمْتَ عَلَىً وَعَلَى أَنْعَمْتَ عَلَى الْتِي أَنْعَمْتَ عَلَى وَالِدَى وَأَنْ أَعْمَلَ صَالِحاً تَرْضَاهُ وَأَدْخِلْنِى وَعَلَى وَالْدَى وَأَنْ أَعْمَلَ صَالِحاً تَرْضَاهُ وَأَدْخِلْنِى بِرَحْمَتِكَ فِي عِبَادِكَ الصَّالِحِينَ"
بِرَحْمَتِكَ فِي عِبَادِكَ الصَّالِحِينَ"

صَدَق الله العَظِيم

(آیة ۱۹ سورة النمل)

SUPERVISORS

Dr. Mai Mahmoud Yousry

Associate Professor of Operative Dentistry Faculty of Oral and Dental Medicine Cairo University

Dr. Randa Mohammed Hafez

Professor of Operative Dentistry
Faculty of Oral and Dental Medicine
Cairo University
Vice Dean for Students affairs
Faculty of Oral and Dental Medicine
Nahda University

Dr. Hassan Mohammed El-Shamy

Lecturer of Operative Dentistry
Faculty of Oral and Dental Medicine
Nahda University

Acknowledgment

Firstly, I would like to express my endless gratitude to ALLAH for giving me the power and patience to carry out this study honestly and faithfully.

I wish to express my deep thanks to my supervisor **Dr. Randa. M. Hafez,**Professor of Operative Dentistry, Faculty of Oral and Dental Medicine, Cairo
University, for her continuous, unlimited, endless help, care, support, guidance and
encouragement during the whole parts of the study.

It has been a great honor and pleasure to undertake this research under supervision of **Dr. Mai M. Yousry**, Associate professor of Operative Dentistry, Faculty of Oral and Dental Medicine, Cairo University. My grateful thanks for her invaluable help, generous support, unlimited understanding throughout this work.

I am immensely grateful to **Dr. Hassan M. El-shamy**, Lecturer of Operative Dentistry, Faculty of Oral and Dental Medicine, Nahda University, for his sincere advice, valuable comments, constructive guidance and continuous encouragement during the course of this study.

A very special tribute is paid to the Head and staff members of Operative Dentistry Department, Faculty of Oral and Dental Medicine, Cairo University, and all my colleagues and the staff members of Misr University for Science and Technology and Dr. Abeer Abo-ElNaga for their help and co-operation during my research work.

Last but not least, No words could express my deepest and unlimited love to my family, my husband and friends, who offered me all the help, real support and encouragement that made this work possible.

<u>Dedication</u>

This work is dedicated to...

The memory of my father Dear family; my mother, sisters, husband and lovely daughter Jumana.

List of Contents

Title	Page
List of Tables	i
List of Figures	iv
Introduction	1
Review of Literature	4
Aim of the Study	43
Materials and Methods	44
Results	65
Discussion	120
Summary and Conclusions	140
References	144
Arabic Summary	

List of Tables

Table No.	Title		
Table (1):	Specification, composition, manufacturer and batch number of each material.	40-41	
Table (2):	Variables of the study	47	
Table (3):	Interaction of variables	47	
Table (4):	The surface treatment method, composition, abrasive particle average size, speed/ pressure, manufacturer and batch number	49	
Table (5):	Descriptive statistics and test of significance for the effect of surface treatments on micro-shear bond strength within each intermediate agent and pre-repair aging time intervals after 1 week post-repair aging.	62	
Table (6):	Descriptive statistics and test of significance for the effect of surface treatments on micro-shear bond strength within each intermediate agent and pre-repair aging time intervals after 1 month post-repair aging	66	
Table (7):	Descriptive statistics and test of significance for the effect of surface treatments on micro-shear bond strength within each intermediate agent and pre-repair aging time intervals after 3 months post-repair aging.	69	
Table (8):	Descriptive statistics and test of significance for the effect of surface treatments on micro-shear bond strength regardless of other variables.	71	

Table (9):	Descriptive statistics and test of significance for the effect of intermediate agents on micro-shear bond strength within each surface treatment and pre-repair aging time interval after 1 week post-repair aging	74
Table (10):	Descriptive statistics and test of significance for the effect of intermediate agents on micro-shear bond strength within each surface treatment and pre-repair aging time interval after 1 month post-repair aging.	78
Table (11):	Descriptive statistics and test of significance for the effect of intermediate agents on micro-shear bond strength within each surface treatment and pre-repair aging interval after 3 months post-repair aging.	81
Table (12):	Descriptive statistics and test of significance for the effect of intermediate agents on micro-shear bond strength regardless of other variables.	83
Table (13):	Descriptive statistics and test of significance for the effect of pre-repair aging time intervals on micro-shear bond strength within each intermediate agent and surface treatment after 1 week post-repair aging.	85
Table (14):	Descriptive statistics and test of significance for the effect of pre-repair aging time intervals on micro-shear bond strength within each intermediate agent and surface treatment after 1 month post-repair aging	86
Table (15):	Descriptive statistics and test of significance for the effect of pre-repair aging time intervals on micro-shear bond strength within each intermediate agent and surface treatment after 3 months post-repair aging	88
Table (16):	Descriptive statistics and test of significance for the effect of pre-repair aging time intervals on micro-shear bond strength regardless of other variables.	89
Table (17):	Descriptive statistics and test of significance for the effect of post-repair aging time intervals on micro-shear bond strength within each intermediate agent and surface	93

treatment after 1	month p	ore-repair	aging	

Table (18):	Descriptive statistics and test of significance for the effect of post-repair aging time intervals on micro-shear bond strength within each intermediate agent and surface treatment after 3 months pre-repair aging.	97
Table (19):	Descriptive statistics and test of significance for the effect of post-repair aging time intervals on micro-shear bond strength regardless of other variables.	98
Table (20):	Percentages of the failure modes for all tested specimens within each subclass after 1 month pre-repair aging at different post-repair aging time intervals	102
Table (21):	Percentages of the failure modes for all tested specimens within each subclass after 3 months pre-repair aging at different post-repair aging time intervals	107