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Microbiology Research Report

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Properties of a VPS Impression Material

Purpose: The project evaluated physical and mechanical properties of a new VPS impression material.

Materials and Methods:

VPS impression material:
Imprint 4 *(3M ESPE)*

Consistencies and setting times tested:
Regular, Super Quick Regular (SQ Regular), Light, Super Quick Light (SQ Light), Heavy Garant and *Super Quick Heavy Garant (SQ Heavy Garant)*

Tests Performed:
Elastic recovery, strain-in-compression, linear dimensional change and compatibility with gypsum were determined using ISO 4823:2000 (ANSI/ADA Standard No. 19:2004). Specimens were tested on a universal testing machine (Instron 5866) at the crosshead speed recommended by the standard with n=5 for all tests. Compatibility with gypsum refers to reproduction of the 50 um line with ISO Type 3 gypsum. Data were analyzed by analysis of variance and means were compared by Fisher's PLSD test at the 0.05 level of significance.

Results:

The means and standard deviations (in parentheses) of the physical and mechanical properties for each material are listed in the table. For each property, means with the same superscripted letters are statistically the same.

Summary of Elastic Recovery, Strain-In-Compression,
Linear Dimensional Change, and Gypsum Compatibility of ***Imprint™ 4***

Imprint™ 4 Type	Elastic Recovery, %	Strain in Compression, %	Linear Dimensional Change, %	Gypsum Compatibility, %
Regular	99.52 (0.03)[a]	4.00 (0.11)	-0.56 (0.04)	100
SQ Regular	99.43 (0.05)[b]	4.34 (0.10)	-0.47 (0.09)	100
Light	99.61 (0.04)	4.69 (0.03)[a]	-0.42 (0.06)[a]	100
SQ Light	99.53 (0.09)	4.71 (0.17)[a]	-0.38 (0.05)[ac]	100
Heavy Garant	99.47 (0.03)[a]	3.32 (0.07)[b]	-0.36 (0.04)[b]	100
SQ Heavy Garant	99.38 (0.02)[b]	3.25 (0.07)[b]	-0.40 (0.04)[bc]	100

Conclusions:

Elastic recovery, strain in compression, linear dimensional change and compatibility with gypsum of ***Imprint 4*** were within the acceptable ranges specified by ISO 4823:2000.

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