

# Physical Properties and Interfacial Adaptation of Three Epoxy Resin-based Sealers

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## Abstract

### Introduction

The aim of the study was to evaluate the radiopacity, solubility, flow, film thickness, setting time, and adaptation to the root canal walls of 3 epoxy resin-based sealers: AH Plus, Acroseal, and Adseal.

### Methods

Physical tests were performed following American National Standards Institute/American Dental Association's requirements. For interfacial adaptation analysis, 30 maxillary canines were shaped by using ProTaper instruments. The specimens were divided into 3 groups ( $n = 10$ ): group 1, AH Plus; group 2, Acroseal; and group 3, Adseal. The sealers were mixed with rhodamine B dye, and the canals were filled by using the lateral compaction technique. The percentage of gaps and voids area was calculated at 2, 4, and 6 mm levels from the apex. Statistical evaluation was performed by using analysis of variance for physical analysis and nonparametric Kruskal-Wallis and Dunn tests for interfacial adaptation ( $P < .05$ ).

### Results

No statistical differences were found for adaptation, percentage of voids, solubility, flow, and film thickness among the sealers ( $P > .05$ ). AH Plus was significantly more radiopaque ( $P < .05$ ). For the setting time, there were statistical differences among all the studied sealers ( $P < .05$ ).

### Conclusions

AH Plus, Acroseal, and Adseal presented similar root canal adaptation, solubility, flow, and film thickness. Statistical differences were found for radiopacity and setting time ( $P < .05$ ).