

## ABSTRAK

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Judul : Pengaruh Aplikasi Bonding Agent terhadap Kedalaman Intrusi Air pada Semen Ionomer Kaca (SIK)

**Latar Belakang:** Semen Ionomer Kaca (SIK) adalah bahan restorasi yang terdiri dari bubuk kaca kalsium fluoroaluminosilikat dan asam poliakrilik. Pada tahap awal reaksi setelah pencampuran, SIK sensitif terhadap udara dan air yang dapat menghambat reaksi pengerasan sehingga perlu perlindungan dengan material yang kedap air dan salah satunya adalah bonding agent. **Tujuan:** menganalisis efek bonding agent terhadap kedalaman intrusi air pada SIK. **Metode:** 12 spesimen SIK diameter 5 mm dan tebal 2 mm, dibagi menjadi 3 kelompok: kelompok 1 tanpa pelapisan, kelompok 2 dilapis varnis, dan kelompok 3 dilapis bonding agent. Seluruh spesimen direndam dalam *methylene blue* 0,1% selama 24 jam dan dimasukkan dalam inkubator dengan suhu 37<sup>0</sup> C. Kemudian setiap sampel dibelah menjadi 2, yang satu sisi diukur kedalaman intrusi airnya menggunakan *measuring microscope* dan bagian lainnya diukur kekerasannya menggunakan *Knoop Microhardness Tester*. Kemudian hasilnya dianalisis secara statistik. **Hasil:** Pada ketiga kelompok terlihat adanya perbedaan bermakna dengan nilai kedalaman intrusi air tertinggi ada pada kelompok tanpa perlakuan dan paling rendah pada kelompok bonding agent. **Kesimpulan:** Aplikasi bonding agent dapat menurunkan kedalaman intrusi air pada SIK.

Kata kunci:

Bonding agent, intrusi air, Semen Ionomer Kaca (SIK).

## ABSTRACT

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Title : Effect of Bonding Agent Application on Water Intrusion in Glass Ionomer Cement (GIC).

**Background:** Glass Ionomer Cement (GIC) is a restorative material containing calcium fluoroaluminosilicate glass powder and polyacrylic acid. At initiation stage of reaction after mixing, GIC becomes sensitive with air and water which can inhibit setting reaction so it needs to be protected with waterproof material, the one is bonding agent. **Aim:** To analyze bonding agent's effect in depth of water intrusion in GIC. **Method:** 12 GIC specimens with 5 mm in diameter and 2 mm in height were divided into 3 groups: group 1 without any protecting layer, group 2 was coated with varnish, and group 3 was coated with bonding agent. All specimens were immersed in methylene blue 0,1% as long as 24 hours and was put into incubator 37<sup>0</sup> C. Then, each samples was cut off into 2 pieces, one side was measured for water intrusion using measuring microscope dan the other was measured for surface hardness using Knoop Microhardness Tester. After that, the result was analyzed statistical. **Result:** At 3 groups showed there was significant difference, the highest water intrusion depth score was group without any protecting layer and the lowest score was bonding agent's group. **Conclusion:** Application of bonding agent could decrease the depth of water intrusion in GIC.

Keywords :

Bonding agent, water intrusion, Glass Ionomer Cement (GIC).