

Ideal technique to restore a deep carious premolar tooth using Aura (SDI Ltd.) composite system



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CASE STUDY

A 25 year old female presented with very deep caries, near exposure, but the pulp was symptomless.

The restorative technique chosen recognizes that deep dentin is difficult to bond to, hence to help control potentially weak bond to deep dentine, a technique known as decoupling was used.

This technique utilizes a layer of Ribbond fibre in the depth of the cavity which acts as a decoupler, protecting the deep bond from potential damage from high C-factor and volumetric composite shrinkage in overlaying large volume of composite.

DIAGNOSIS & TREATMENT

The depth of the decay in relation to the pulp was highlighted in red on the Xray for the patient to see in order to emphasize at the exam appointment that she needed to make an appointment immediately, before the pulp got infected. It was already reacting with reactionary secondary dentine. **(Fig 1)**

Pre-treatment image. Absolutely no clinical sign of the depth of the decay. **(Fig 2)**

Initial cavity prep and bevelled margins. Sound dentin periphery, some slightly affected dentine over the pulp. **(Fig 3)**

The enamel margins were selectively etched then bonded with a two step self-etching primer and resin. **(Fig 4)**

A thin layer of radio-opaque flowable composite such as Wave (SDI Ltd.) was then applied and cured. **(Fig 5)**



Fig 1. The depth of the decay in relation to the pulp was highlighted in red.



Fig 2. Pre-treatment image.



Fig 3. Initial cavity prep and bevelled margins.



Fig 4. The enamel margins were selectively etched then bonded.



Fig 5. A thin layer of radio-opaque flowable composite was applied.

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DIAGNOSIS & TREATMENT

A layer of Ribbon Thin High Modulus Ultra was placed into a thin layer of composite and pressed through to the underlying set flowable composite. (Fig 6)

Aura E1 enamel shade was used to create the marginal ridge and was sectioned vertically to control C-Factor shrinkage stresses. (Fig 7)

The marginal ridges were completed with a further increment of Aura E1. (Fig 8)

Aura DC5 was built up in 1mm increments. (Fig 9)

Final contoured increment of Aura DC5. (Fig 10)

Aura E1 enamel shade contoured over the dentine base. (Fig 11)

An opaque white tint was added to duplicate the pre-treatment shade of the tooth. By bringing the darker Aura DC5 dentine shade up to the correct depth, contouring of the enamel layer exposed the darker dentine shade, creating a colour depth to the fissures. (Fig 12)

Final restored tooth. (Fig 13)



Fig 6. A layer of Ribbon Thin High Modulus Ultra was placed.



Fig 10. Final contoured increment of Aura DC5.



Fig 7. Aura E1 enamel shade was used to create the marginal ridge.



Fig 11. Aura E1 enamel shade contoured over the dentine base.



Fig 8. The marginal ridges were completed.



Fig 12. An opaque white tint was added to duplicate the pre-treatment.



Fig 9. Aura DC5 was built up in 1mm increments.



Fig 13. Final restored tooth.

