

# Restorative Clinical Cases

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Author: Prof. Dr. Claus-Peter Ernst  
Origin: Mainz / Germany  
Date: 2020  
Brands: Palodent® V3, Prime&Bond® active, Ceram.x Spectra™ ST flow

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## Highly esthetic class II restoration with difficult access and undercuts

**Larger cavities with limited access, possibly still with undercuts, are preferably filled with a flowable bulk fill composite. But what if a good esthetic outcome is also desired? How to meet this challenge is described below.**

You might think that all indications are covered by the large number of filling materials available today. And indeed, there is a solution for nearly every patient, but sometimes you want an easier, faster, safer option. This case of a highly esthetic restoration where access is restricted is one such example.

A 66-year-old female patient presented with a failing restoration and recurrent caries on tooth 44. She had very high expectations for the esthetics of a new restoration..

The existing fillings were removed after rubber dam placement and the undermining caries excavated. Then two class II cavities had to be filled, one in the distal and the other in the mesial region (Fig. 1, 2).

A sectional matrix system (Palodent V3, Dentsply Sirona) was used as the first step of the restoration. Two matrix bands with a pronounced marginal ridge and gingival apron were used. Using a universal ring, tooth 44 was separated from tooth 45; a wedge was used for fixation. The composite was bonded in both cavities with a universal adhesive (Prime&Bond active, Dentsply Sirona).

The distal cavity was first coated with a thin layer of a flowable restorative (Ceram.x Spectra ST flow, A3, Dentsply Sirona). Then an esthetic composite (Ceram.x universal, now available under the name Ceram.x Spectra ST; shade "CLOUD" A3) was applied in three increments. Each was light cured for 20 seconds.

The mesial cavity was filled using only the flowable material. It was applied in three increments and light cured (Fig. 5). The two restorations were then finished and polished (Fig. 6, 7).



**Prof. Dr. Claus-Peter Ernst**  
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### Current professional activities

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|------------|--|
| 2005       | Adjunct professor at Johannes Gutenberg University, Mainz                          |
| 2006-2016  | Parallel to this, work at the zahnÄrzte dental practice in Gutenberg Center, Mainz |
| Since 2016 | Co-founder and co-owner of the medi+ MVZ GmbH dental practice, Mainz               |

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01 The original clinical situation after removal of the previous restorations: Recurrent decay was present under the previous DO and MO restorations.



02 An extensive distal class II cavity plus a mesial class II cavity as a result of undermining caries.



03 Use of anatomically shaped matrices in combination with a nickel-titanium ring to create natural-looking anatomical conditions.



04 The matrices *in situ* from occlusal direction.



05 Filling the mesial cavity with a flowable esthetic composite.



06 The finished and polished restoration from buccal.



07 The completed restoration immediately after finishing and polishing from occlusal.



08 Nearly invisible: the restoration after moistening with saliva.



Ceram.x Spectra™ ST flow, Flowable Composite Restorative

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## Discussion

The restorations were easy to polish and matched the adjacent teeth nicely regarding chroma and opacity, both immediately after treatment and later after having remoisturized with saliva. The fillings proved to be nearly invisible (Fig. 8). The patient was very satisfied with the result. This showed that it was the right decision to use an esthetic material.

This case raised one question: If the (smaller) mesial cavity is filled with a flowable composite (Ceram.x Spectra ST flow), which material is best suited for the larger and more prominent distal cavity? We decided to use an even more esthetic variant based on the same material (Ceram.x Spectra ST). In order to ensure complete coverage of the cavity walls despite the rather difficult access and undercuts, a flowable composite was applied as a liner. This was exactly the same material that was used for filling the mesial cavity.

The esthetic outcome suggests that the combination of the two composite variants was successful. The manufacturer's good balance of the flowable material's optical properties played an important part.

The sectional matrix system proved to be an effective help for shaping. In particular, the contact points to the adjacent teeth were easy to create thanks to the pronounced marginal ridge; the cervical margins could also be reliably sealed due to the apron.

## Conclusion

Bulk fill composites are fast and easy to use for larger cavities, but for esthetically challenging cavities, the use of a conventional, highly esthetic layering composite should be considered as an alternative.

The viscosity of the restorative material can be selected depending on the requirements of the cavity. However, up to now there have been some pronounced differences in opacity between the flowables and the corresponding layering composites of the same manufacturer. Dentsply Sirona has now presented a material, Ceram.x Spectra ST flow, with comparable opacity in the flowable and the layering material – a considerable simplification, as the combined use allows for enhanced customization without impacting the esthetics.

Moreover, all of the used products are part of the class II solution concept. The manufacturer's goal was to provide a system that creates restorations with a reliable seal at the proximal margin and perfect adaptation to the floor and walls of the cavity. The goal is to reliably prevent secondary caries, the most common cause of restoration failure. Unless follow-up examinations show otherwise, these goals seem to have been achieved in the case presented here.