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# how to guide **composite** layering techniques



**ESTHET•X<sup>HD</sup>**  
HIGH DEFINITION MICRO MATRIX RESTORATIVE

For better dentistry

**DENTSPLY**

# how to guide

## Composite & layering techniques



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Resin composite provides the most aesthetic direct restorative material for restoring teeth. Composites offer the opportunity for minimal preparation compared to more destructive indirect alternatives. Composite resins are available with a range of optical characteristics, having a range of translucencies and colours.

Whilst in certain situations, it may be feasible to create an adequate appearance by using a single composite shade (e.g. Ceram.X™ mono), composite systems intended for layered restorations are now composed of distinct enamel and dentine shades (e.g. Ceram.X™ duo, Esthet-X HD). The difference between the enamel and dentine composite in these materials is marked with a high opacity and chroma for dentine shades and high translucency and low chroma for enamel. This difference in optical characteristics is designed to mimic natural dentine and enamel and can lead to improved aesthetic integration of restorations.

In addition to standard cavity preparations, direct composite can also be used in a number of situations where indirect restorations have typically been employed. Such indications include; discolouration / hypoplastic defects, fractured teeth, management of tooth wear and correction of tooth size / shape discrepancies.

The range of indications for placing direct composite restorations is increasing as materials improve. When reconciling the conservation of tooth tissue with the desired outcome of treatment, direct composite is increasingly becoming the option of choice ahead of indirect restorations.

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### Objectives

Upon completion of this guide, the clinician will be able to do the following:

- A** Appreciate the reason for using a layering technique for direct restorations
- B** Understand the benefits of Ceram.X duo and Esthet-X HD
- C** Learn more about the two and three layer technique
- D** Understand the range of composite materials available

### Introduction:

Esthet-X HD can be successfully used for Class IV, Diastema Closure, Class II & Direct Veneers. This How to Guide details a Class IV restoration. Please see our website for details on the other procedures.

### Indications for use - Esthet-X HD

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1. Esthet-X HD material is indicated as a direct restorative for all cavity classes in anterior and posterior teeth.
2. Esthet-X HD material is indicated as a direct esthetic veneering material and for cosmetic reshaping (e.g. diastema closure, incisal lengthening).
3. Esthet-X HD material is indicated for the indirect fabrication of inlays, onlays and veneers.

### Contra-indications

If skin sensitisation occurs or if a known allergy to methacrylate resin exists

See DFU's for Warnings & Precautions

**Always read the manufacturer's full directions for use**



### 5 Application of the Regular Body Layer

Build up the body shade (up to 2mm) over the opacous foundation and reproduce the dentine mamelon form. Feather the Esthet-X HD restorative onto the enamel bevel. Light cure for 20 seconds.



### 6 Application of the Translucent Enamel Layer

Finish the build up of Esthet-X HD restorative with the Translucent Enamel Shade (up to 2mm). Feather the enamel shade over the bevelled enamel and onto the label surface. Light cure for 20 seconds.

### Indications for use - Ceram.X duo

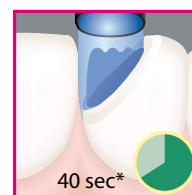
Direct restorations of all cavity classes in anterior and posterior teeth

### Contra-indications

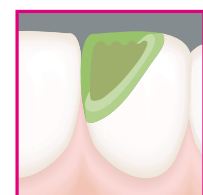
Known allergy to methacrylate resins or any other of the components

See DFU's for Warnings & Precautions

**Always read the manufacturer's full directions for use**



- 5** Light-cure dentine layer  
\*Light output  $\geq 500\text{mW/cm}^2$  only.



- 6** Restore enamel layer with **duo** enamel shade.

## Why use a layering technique?

Both colour (shade) and translucency (contrast ratio) determine the aesthetic quality of a composite restoration. Colour is important because the shade match between the restoration and its surrounding teeth must be indistinguishable. Translucency of a restorative will provide the added "life-like" vitality and natural appearance of the completed restoration.

Translucency may be measured as contrast ratio, wherein a material becomes less translucent (more opaque) as the contrast ratio increases. Custom blending of differing opacities allows the clinician to create restorations possessing natural aesthetic beauty; giving the patient the best possible result.

### Esthet-X HD



**1 Shade Selection** Select the shade tab from the Esthet-X HD TruMatch™ Shade Guide that matches the patient's natural dentition. Refer to the back of the Shade Guide Holder or to the silver shade tab to review the composite selection ("recipe") used to create the shade tab. The Opacious **Dentine** Shades will block out the darkness of the mouth in a Class IV restoration. The Regular **Body** Shades will provide the lifelike translucency and color to the restoration. The Translucent **Enamel** Shades will create natural-looking incisal edges.



**2 Preparation and Etch** Create a bevelled preparation, preserving the enamel at the gingival margin (30° to 45°, 3mm average). Condition the enamel for at least 15 seconds and dentine for 15 seconds or less. Rinse conditioned areas for 10 seconds. Blot dry but do not desiccate the dentine; keep moist.



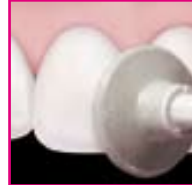
**3 Bonding** Apply Prime&Bond® NT™ Adhesive to the preparation and saturate all surfaces for at least 20 seconds. Remove excess solvent by gently air drying for 5 seconds. Surfaces should have a uniform, glossy appearance. Light cure for 10 seconds. If not glossy, repeat steps 3A and 3B.



**4 Application of the Opacious Dentine Layer** Apply the Opacious Dentine Shade increment (up to 2mm). Feather material to the bevel. Light Cure for 20 seconds.



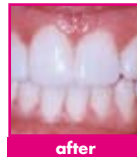
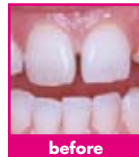
**7 Finishing** A. Define the final anatomy with a multi-fluted finishing bur or a diamond finishing bur. B. Continue to finish with Enhance® Discs, Cups or Points. Lighter pressure leaves a smooth surface.



**8 Polishing** For a glass like luster, polish the restoration with the PoGo® One Step Diamond Micro-Polisher System and/or Prisma® Gloss™ Polishing Pastes.

### other procedures

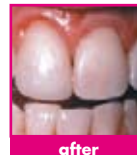
#### Diastema Closure



#### Class II



#### Direct Veneer

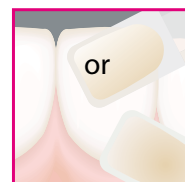


Please visit  
[www.dentsply.co.uk](http://www.dentsply.co.uk)  
for further information

### Ceram.X duo



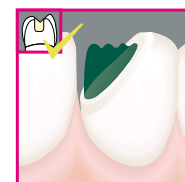
**1** Use the Vita-Shadeguide and shade label.



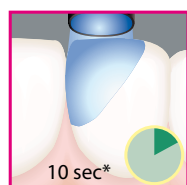
**2** ...or the Ceram.X shadefingers.



**3** Select Adhesive, please consult directions.



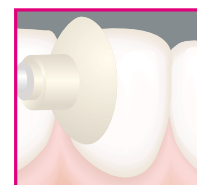
**4** Restore dentine core with **duo** dentine shade.



**7** Light-cure enamel layer  
\*Light output ≥ 500mW/cm2 only.



**8** Shade and contour.



**9** Finish and polish with Enhance® Discs, Cups or Points and PoGo® One-Step Micro-Polisher System.



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