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Minimum Thicknesses, Cementation and Finishing

for restorations made with Irix Max, Irix Plus, and Temporis

For the successful processing of prosthetic restorations made by TSLA Dfab laser printing, it is necessary to ensure that the following points are met from the beginning of treatment:

- Clearly visible and clean preparation margins
- Smooth and rounded tooth preparations
- Finished restoration thicknesses in accordance with the Instructions for Use (IFU), summarized below.
- Chamfer or shoulder preparations free of sharp edges

In general, an anatomically conservative preparation should be made. In particular, the creation of sharp corners or edges, which generate tension peaks in the material, should be avoided. Before making an impression by intraoral scanning, check or perform rounding of the corners of the preparation(s) with appropriate tools (burs and/or polishers).

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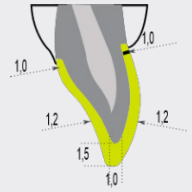
Preparations/Thickness of Restorations

The following table shows the minimum material thickness required for the various types of restorations, along with the type of prosthetic preparation suggested.

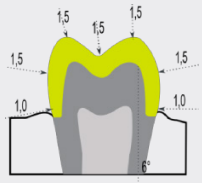
Crown/Bridge abutment in the anterior areas



Reduce the anatomical shape observing the minimum thicknesses shown. Shoulder preparation with rounded inner edge or Chamfer with angulation of approximately 10° to 30°, at least 1.0 mm deep at cervical margin.

- Occlusal/incisal reduction of the coronal third of at least 1.5 mm
- Vestibular reduction of at least 1,2 mm

Crown/Bridge abutment in the premolar sectors

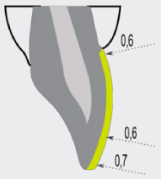


Reduce the anatomical shape observing the minimum thicknesses shown. Shoulder preparation with rounded inner edge or Chamfer with angulation of approximately 10° to 30°, at least 1.0 mm deep at the cervical margin.

- Preparation taper of 6°
- Occlusal reduction of the coronal third min. 1.5 mm; Facial reduction min. 1.5 mm
- For self-adhesive cementation, the preparation must have retentive surfaces and sufficient abutment height

Connector surface area between units: ≥ 24 mm².

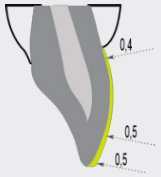
Aesthetic Veneers



Preparation should ideally take place in the enamel. Do not extend the incisal preparation limits in the abrasion surfaces and occlusion dynamics.

- Reduce the labial area by a minimum of 0.6 mm and the incisal edge by a minimum of 0.7 mm

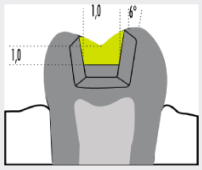
Thin Veneers



Preparation should ideally take place in the enamel. Do not extend the incisal preparation limits in the abrasion surfaces and occlusion dynamics. In case of sufficient space, a preparation can be waived.

- Minimum thicknesses: cervical and labial 0.4 mm; incisal edge 0.5 mm

Inlay Inlays



- Consider static and dynamic occlusal contacts
- Do not make preparation edges in centric occlusal contacts
- In groove area min. 1.0 mm preparation depth and min. 1.0 mm isthmus width
- Slightly divergent proximal box (6° tapered preparation), with 100°-120° angle between proximal cavity walls and proximal prospective surfaces of the inlay. With accentuated convex proximal surfaces without sufficient proximal step support, avoid marginal ridge contacts on the inlay
- Round inner edges and transition areas to avoid stress concentrations in the material

Avoid slice-cut or knife edge preparations.

Onlays

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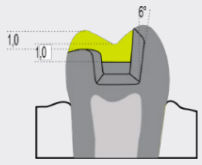
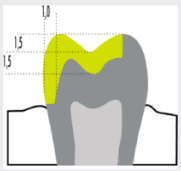


- Consider static and dynamic occlusal contacts
- Do not make preparation edges in centric occlusal contacts
- In groove area min. 1.0 mm preparation depth and min. 1.0 mm isthmus width
- Slightly divergent proximal box (6° tapered preparation), with 100°-120° angle between proximal cavity walls and proximal prospective surfaces of the inlay. With accentuated convex proximal surfaces without sufficient proximal step support, avoid marginal ridge contacts on the onlay
- Round the inner edges and transition areas to avoid concentrations of structural tension
- Avoid slice-cut or knife edge preparations

In cusp capping area, consider a gap of at least 1.0 mm.

Partial Crowns



- Consider static and dynamic occlusal contacts
- Do not make preparation edges in centric occlusal contacts
- In cusp capping area, consider a gap of at least 1,5 mm

Shoulder preparation with rounded inner edge or Chamfer preparation with angulation of about 20° to 30°.

Do not use for	ø Bridges with inlays	ø Cantilever bridges	ø Maryland bridges	ø Post and core	ø Patients with Bruxism	ø Any other use not listed in the directions

CEMENTATION EXTRA-ORAL STEPS

Conditioning of the internal surfaces of the restorations prior to cementation

1. Clean the inner surface of the restoration with 95% ethyl alcohol
2. Protect already polished outer surfaces by covering them (e.g. with a piece of Teflon tape) so as not to inadvertently etch or sandblast them
3. Sandblast the internal surfaces with 50 µm aluminum oxide (Al2O3) at a pressure of 1 bar, max
4. If not present in the formulation of the resin based cement chosen, apply silane (for adhesion to the silica-based filler and improve wettability) on sandblasted surfaces and allow it to evaporate completely

If the indirect restoration is sandblasted before the try-in, etching with phosphoric acid is effective in removing salivary contaminants before applying silane or resinous cement *(Özcan M, Alander PP, Vallittu PK, Huysmans MC, Kalk W (2005) Effect of three surface conditioning methods to improve bond strength of particulate filler resin composites. J Mater Sci Mater Med 16:21 27)*.

CEMENTATION INTRAORAL STEPS

Teeth surface conditioning and cementation with adhesive technique

Self-conditioning (self-etching) technique (e.g., Scotchbond Universal + RelyX Ultimate 3M) A self-etching adhesive system compatible with a dual resin cement is used:

1. Adhesive: apply one layer of the adhesive system according to the manufacturer's directions
2. Cement: mix the resin cement, apply it into the restoration, then place the restoration in the oral cavity, again following the manufacturer's directions

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Recommended cementation materials

RESIN CEMENT	MANUFACTURER	MONOMER
RelyX™ Unicem 2	3M™	Phosphoric Acid | Methacrylate
PANAVIA™ SA Cement Universal	Kuraray Noritake	10-MDP
SpeedCEM Plus	Ivoclar	10-MDP
SmartCem® 2	Dentsply Sirona	UDMA
BisCem®	Bisco	Bis-hydroxyethyl methacrylate phosphate
iCEM® Self Adhesive	Kulzer	Urethane
G-Cem ONE™	GC	UDMA
Maxcem Elite™	Kerr	GPDM

Finishing and Polishing (Intraoral)

Finish and polish restorations using your usual method for hybrid composites, always paying attention to margins and contact points. Avoid overheating. The following is an example of a finishing and polishing technique, *link to 3M procedure guide*.

Color customization and surface finishing of restorations (optional step)

The surface of the restoration to be customized should be rough and non-oily to optimize absorption and retentive adhesion of the color, which should not be applied on polished surfaces. Modern Stain&Glaze systems (e.g., Optiglaze - GC) for dental composites can be used for color customization, following their instructions for use, *link to Optiglaze technical sheet*.

Apply the color and perform intermediate curing. Next, the applied color surface must be sealed. Color curing can be carried out with all commercially available lights having wavelengths between 350 and 500 nm. All treated surfaces must be cured perfectly according to the manufacturer's instructions.