solventum

Bonding Protocol Library

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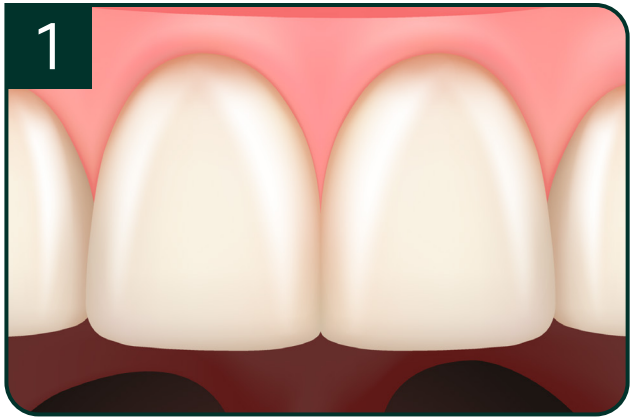
Direct and Digital Bonding

Step-by-Step Bonding Protocol

For digital bonding

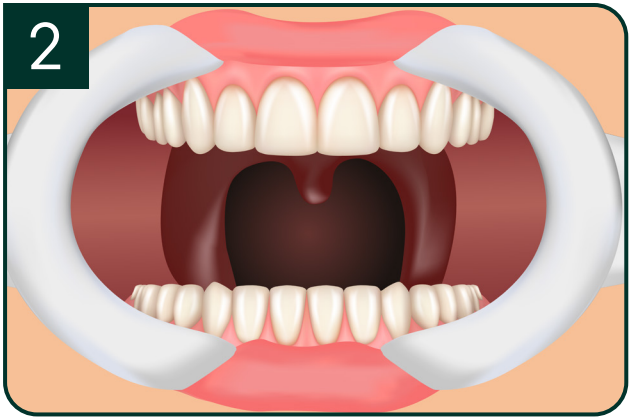
To avoid saliva contamination of bracket bonding surfaces, do NOT perform a trial seating of the tray prior to bonding.

If desired, digital bonding tray can be sectioned.



Ensure good oral hygiene

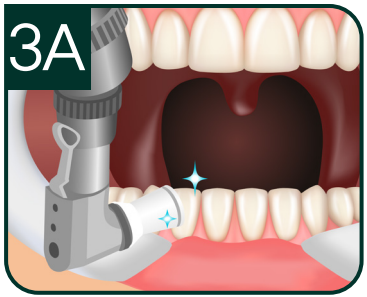
Minimum requirements	Tips & considerations
For patients with good oral hygiene, start at Step 2.	Consider a thorough prophy 2 to 3 days before bonding.

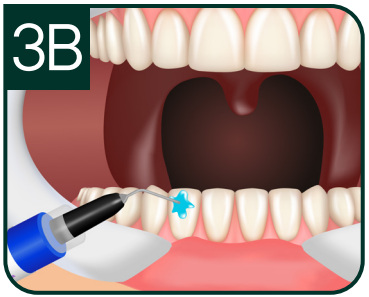


Isolate the teeth

Minimum requirements	Tips & considerations
Isolate the teeth from moisture for the full duration of the bonding procedure.	Use a dry field system such as a Nola.

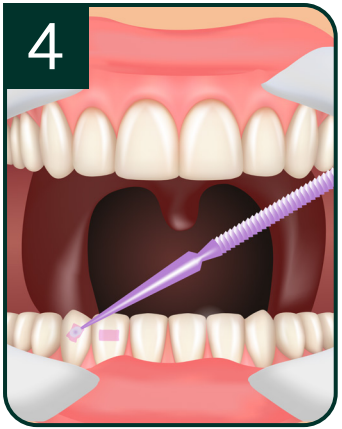
Note: A key element in successful bonding is to minimize the potential for moisture contamination, which is aided by isolation, and reduction of the duration of the bonding process.





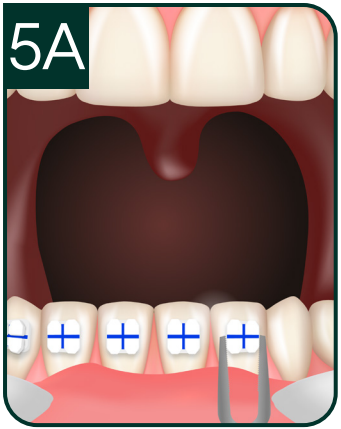
Remove the pellicle

Method 1: Mechanical prophy	OR	Method 2: Chemical etchant	Tips & considerations
Minimum requirements			
Prophy the teeth using the practice's preferred technique.		*Chemical pellicle removal method is an alternative means to remove the pellicle without opening the sulcus, reducing the probability of tooth surface contamination.*	Use a quadrant approach to etching teeth.
Use a prophy powder or an oil-free pumice or paste.		**Minimum requirements**	Begin by only etching teeth with clear facial surfaces, saving teeth that would require brackets to be placed close to the gingiva or where access is difficult until you can work 4-handed.
Rinse thoroughly with water.		To apply a chemical method, use Solventum™ Etching Gel (712-044), starting in the posterior and working to the centrals for approximately 15 seconds per tooth to remove the pellicle.	Rinse etchant thoroughly with water for 15 seconds. Remove rinse water with suction. Do not allow patient to rinse.
Remove excess water. Do not allow teeth to become recontaminated with saliva before applying primer.		Etch all teeth to be bonded so that the entire area of the possible final bracket placement will be etched.	Once the quadrant is complete, move to the contralateral molar and repeat.
			Etched teeth should be bonded as soon as possible to minimize saliva contamination.
			If saliva contacts an etched tooth surface, rinse the tooth and apply etchant for 5 seconds and rerinse. If using cotton rolls, re-isolate the area.



Etch and prime

Minimum requirements	Tips & considerations
A hydrophilic primer system, such as Transbond™ Plus Self Etching Primer (712-090 or 712-091), may increase success for avoiding possible moisture contamination. If your office is not using Transbond Plus SEP, consider using an additional acid etch step after Step 3.	Consider rubbing Transbond Plus SEP for 10 seconds on each molar in the middle third of the clinical crown.
Activate and mix the self-etching primer components, then agitate the mixture thoroughly for 5 seconds and ensure a slight yellow tint is present on the applicator.	
Starting in the posterior, rub Transbond Plus SEP for 3-5 seconds per tooth in the middle third of the clinical crown. If bonding to aprismatic enamel, i.e. molars, deciduous teeth, lingual surfaces, increase the rubbing time per tooth to achieve a desirable etch pattern.	Avoid contacting gingival tissue with the Transbond Plus SEP, where possible, as contact may stimulate weeping of the gingival crevicular fluid onto the bonding area.
Re-dip the applicator after each tooth to ensure the proper quantity of material is being applied.	
When all teeth on one arch are primed, use a gentle 1-2 second oil- and moisture-free air burst on each tooth to dry, mesial-distal, directing the air away from the gingiva to uniformly distribute the Transbond Plus SEP. If ripples remain visible on the tooth, continue drying until ripples have disappeared.	
If saliva contacts the teeth after applying Transbond Plus SEP or bonding is delayed, apply another layer of Transbond Plus SEP followed by a gentle air burst.	
Use one foil pack per arch.	
Do not use applicator on more than one patient.	
Once teeth have been primed, proceed immediately with bonding.	



Place the bracket

— Direct Bonding method

APC™ Adhesive coated brackets

Minimum requirements

Position the bracket on the tooth as soon as possible after the priming step is complete.

Place bracket directly from packaging to teeth. Do not place bracket on any other surface before transferring to the teeth.

Tips & considerations

APC Flash-Free Adhesive: Place bracket, refine position, gently compress against tooth to seat. No need to clean flash.

Other APC Adhesives: Place bracket, gently compress, refine position, seat against tooth. Thoroughly clean flash from around bracket.

If the bracket is moved after final seating, the potential for bond failures may increase (applies to all adhesives).

OR

Uncoated brackets

Minimum requirements

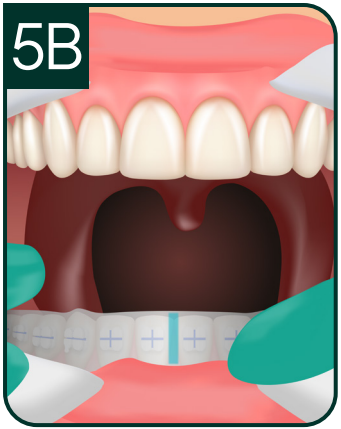
Uniformly apply adhesive, such as Transbond™ Color Change Adhesive (712-103) or Transbond™ XT Light Cure Adhesive (712-036) to the bracket pad, then position the bracket and apply pressure to ensure good contact.

Thoroughly clean flash around the bracket.

Tips & considerations

Uncoated brackets should be stored and handled properly to avoid contamination on bracket base.

Solventum recommends using the accessory of an MBT™ Appliance System positioning gauges for accurate, efficient bracket placement (applies to all brackets).



Place the tray

APC™ Adhesive coated brackets

Minimum requirements

Load the precoated brackets into the bonding trays and store in a light-tight box until the bonding appointment.

Place tray into mouth evenly to ensure a complete fit. Do not press laterally on to the trays, and do not ask the patient to bite down.

Keep trays in mouth for light curing in next step.

Tips & considerations

Place both upper and lower trays, then remove the isolation equipment to better ensure good access for light curing.

OR

Uncoated brackets

Minimum requirements

Load the brackets into the bonding trays

Apply adhesive to the bracket bases, being careful to apply a uniform layer and minimize excess adhesive.

Place tray into mouth evenly to ensure a complete fit. Do not press laterally on to the trays, and do not ask the patient to bite down.

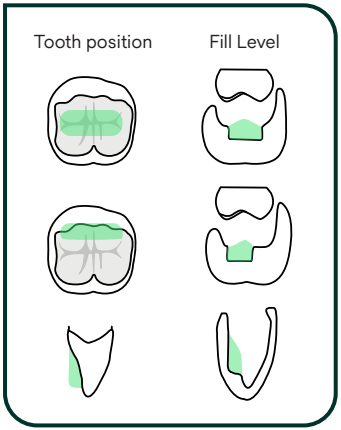
Tips & considerations

Place both upper and lower trays, then remove the isolation equipment to better ensure good access for light curing.

See next page for how to fill the bite block or bite ramp wells.

Including Bite Ramps or Bite Blocks During the Clarity™ Digital Bonding Procedure

Clarity Digital Bonding offers the option of creating bite ramps or bite blocks as a part of the bonding procedure. Use the following guidance to help ensure successful bonding of bite ramps or bite blocks.



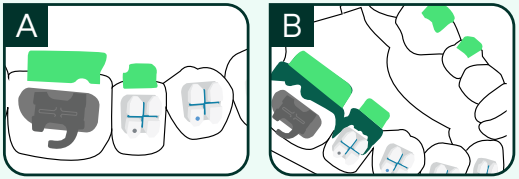
Fill the bite block or bite ramp wells

Observe the occlusal/lingual surface of the teeth and fill the well to match the shape of the tooth surface so you obtain a slight convex shaped mound of material to flow into the tooth surface.

Tips & considerations

Samples that are nearer to the teeth cusps need less of a mound than those covering the ridges on the occlusal surface. Under filling can lead to voids and bond issues (A), while overfilling can lead to excess flash (B).

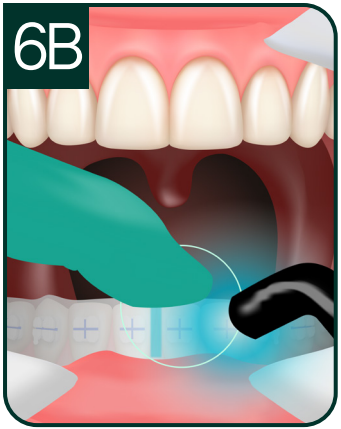
- Best to use a fine tip and start with the tip fully inserted in the well.
- If using a large tip syringe or paste, packing and cleaning around the well may help to minimize flash and voids.
- Dipping micro brush or composite instrument in primer aids in material not sticking to the instrument during fill adjustment, shaping, or packing.



Initiate adhesive cure

— Direct Bonding method

Minimum requirements	Tips & considerations
Verify that the intensity of Ortholux™ Luminous Curing Light is at 80% or higher in the built-in light meter. If lower than 80%, clean necessary parts or check for damage.	Consider initiating adhesive cure by tacking each bracket on the gingival seam immediately after the bracket is positioned. This may provide protection from possible moisture wicking or crevicular fluid contamination from the gingiva. Make one pass with one 3-second beep per tooth, then a second pass again with one beep per tooth. Then cure mesially and distally per the Cure Time Instructions (See page 24).
For ideal curing when bonding metal brackets, ensure the light guide is adjacent to the base of the bracket. For ideal curing when bonding ceramic brackets, ensure the light guide is placed just above the labial surface of the bracket.	
Curing time should be with light guide in place for full cure duration. Keep light steady for full cure duration, don't wave or move the light.	
If less than 1,600 mW/cm2 intensity is used, increase curing time.	
If the positioning angle of the cure is not perpendicular or adjacent, at a minimum, the curing time should be doubled. If the light beam cannot be placed adjacent to the bracket, curing time should also be increased.	



Initiate adhesive cure

— **Digital bonding method**

— **3D-printed tray method**

Minimum requirements
Verify that the intensity of Ortholux™ Luminous Curing Light is at 80% or higher in the built-in light meter. If lower than 80%, clean necessary parts or check for damage.
While holding firmly in place, cure the brackets directly through the bonding tray.
Curing time should be with light guide in place for full cure duration. Keep light steady for full cure duration, don't wave or move the light.
If less than 1,600 mW/cm2 intensity is used, increase curing time.
If the positioning angle of the cure is not perpendicular or adjacent, at a minimum, the curing time should be doubled. If the light beam cannot be placed adjacent to the bracket, curing time should also be increased.
Remove the tray using a scaler to peel the tray from the lingual to the buccal.

APC™ Flash-free Adhesive Coated Appliance System	Step One: With tray inserted	Step Two: After tray removal
Metal brackets	6 second mesial + 6 second distal	6 second mesial + 6 second distal
Ceramic brackets	3 seconds through the brackets	3 seconds through the brackets
Buccal tubes	6 second mesial + 6 second occlusal	6 second mesial + 6 second occlusal

Only two curing cycles are needed; once after application and once after tray removal. There is no need to cure through each tray layer.

For more information, contact Clinician Support at 1-800-423-4588.

Clarity™ Precision Grip Attachments

Step-by-Step Bonding Protocol

Case Selection Criteria

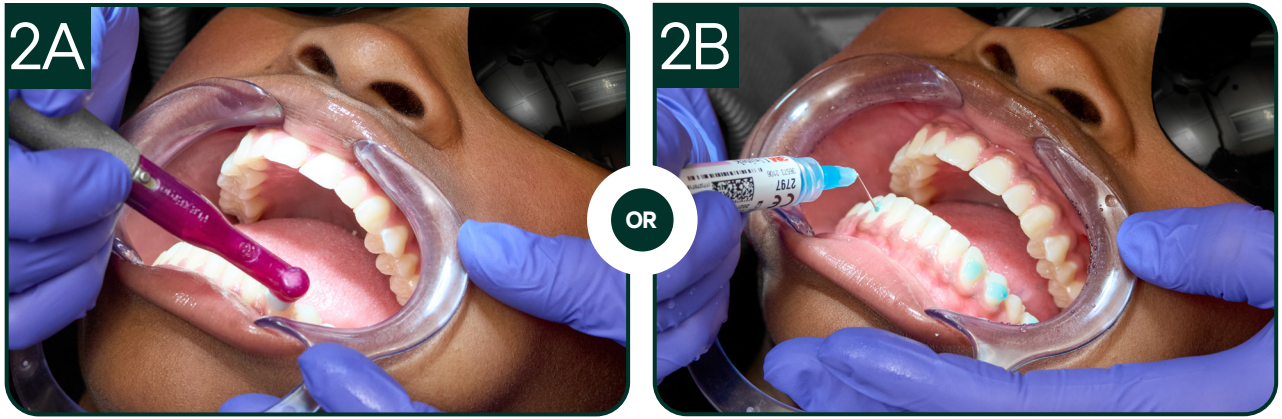
- Attachments must be placed at Stage 1
- Attachments cannot be placed on non-enamel surfaces
- Extraction or eruption cases are excluded from treatment
- Two attachments placed on one tooth cannot be accommodated at this time
- Attachments can only be placed on the buccal/labial surface of the tooth

Before you start
To avoid saliva contamination of attachment bonding surfaces, do NOT perform a trial seating of the tray prior to bonding.

If desired, tray can be sectioned.

Isolate

Isolate teeth using a dry field system.



Remove the pellicle using one of the following methods:

Mechanical prophy

1. Prophy teeth where attachments will be bonded with an oil-free pumice or paste.
2. Rinse with water and dry teeth thoroughly.

Chemical prophy

Note: Do not allow teeth to become re-contaminated with saliva before applying the Transbond™ Plus Self Etching Primer.

1. Apply Unitek™ Etching Gel System or another phosphoric acid etching agent for 15 seconds where attachments will be bonded.
2. Rinse with water and dry teeth thoroughly.

Prepare the tooth surface

Transbond™ Self Etching Primer is the required bonding agent for the tooth surface

Note: Do NOT cure the bonding agent prior to seating the tray.

1. After thoroughly mixing the Transbond Self-Etching Primer, rub the saturated tip of the applicator onto the tooth surface where the attachments will be bonded. Continue rubbing bonding agent onto enamel while applying some pressure for a minimum of 3-5 seconds per tooth.
2. Re-dip applicator in reservoir to saturate tip before applying the bonding agent on the next tooth.
3. Deliver a gentle air burst for 1-2 seconds to each tooth to evenly disperse bonding agent into a film.

Prepare the attachment surface

Transbond™ XT Light Cure Adhesive Primer is the required bonding agent for the attachment surface

Note: Do NOT cure the bonding agent prior to seating the tray.

1. Using a superfine microbrush, apply a bead of the bonding
   agent to the back of the attachment only.
2. Avoid allowing the bonding agent to run onto the surrounding surfaces.
3. Re-dip applicator in reservoir to saturate tip before applying the bonding agent on the next attachment.

Tray placement and light cure

Note: If using a curing light from another manufacturer, reference and follow that manufacturer's instructions for use related to the proper curing light techniques.

1. Position tray into patient's mouth.
2. Start at most distal attachment on one side of the arch, bond attachments one at a time working towards the midline.
3. Apply gentle occlusal finger-pressure in a lingual to buccal direction to the support structures of the attachment before turning on the light.
4. Light cure each attachment for a minimum of 6 seconds using the Ortholux™ Luminous Curing Light or for a minimum of 10 seconds using the Elipar™ Curing Light.

Remove attachment tray

1. Break the support structures away from the attachments by rolling the tray from the lingual to the buccal surface. Do NOT remove tray vertically.
2. If an attachment remains in the tray, it can be bonded a second time.

Check

Note: Repeat steps 3-7 for an opposing arch.

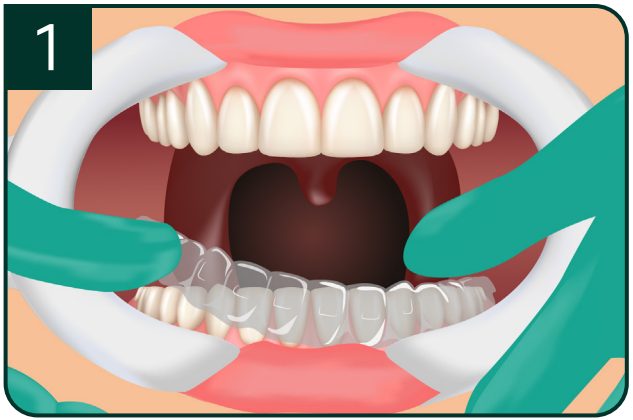
1. Confirm the secure bond of each attachment.
2. Check for any residual sprue support structures and remove using a sharp scaler. Avoid applying force that pulls the residual sprue away from the tooth.
3. Remove any excess material from the tooth if needed using a scaler, polishing disc or bur.

Scan here to view the bonding protocol video.

For more information, contact Clinician Support at 1-800-423-4588.

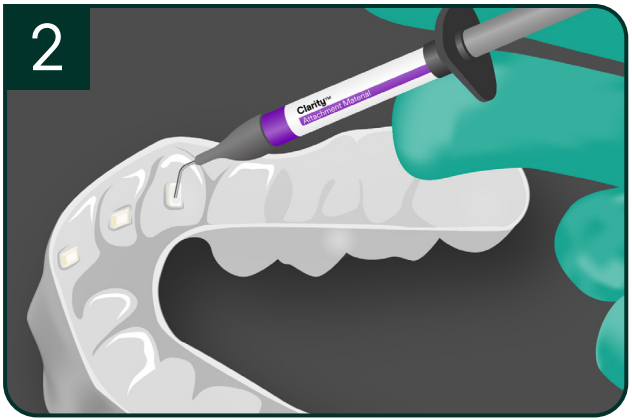
Clarity™ Attachment Material

Step-by-Step Bonding Protocol



Isolate and trial fit (optional)

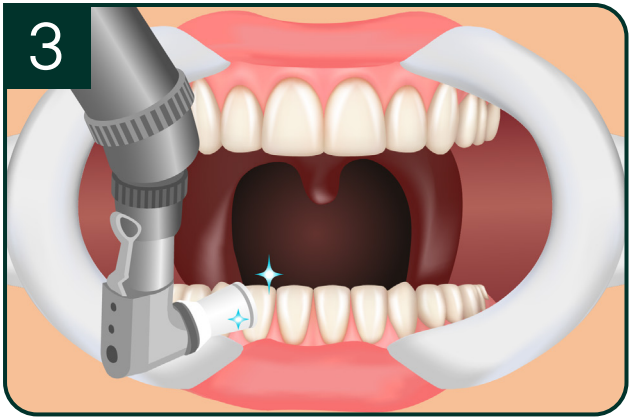
Isolate teeth and trial fit the attachment template.
Rinse and dry afterwards.



Fill

Using Clarity Attachment Material, fill the wells in the attachment template.

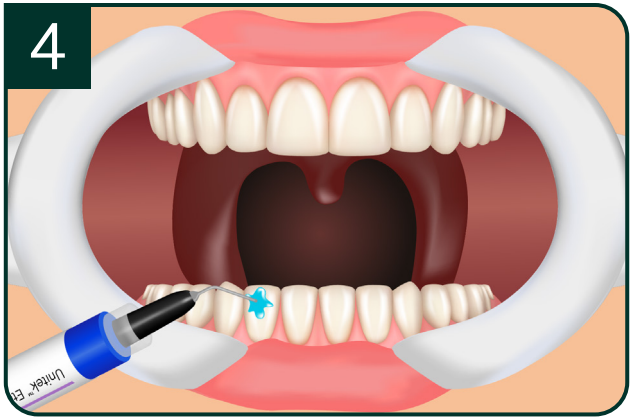
! Avoid overfilling to reduce flash clean up.
! Avoid underfilling to reduce voids and possible bond failures.
! Protect the filled template from light until ready to use.



Prophy

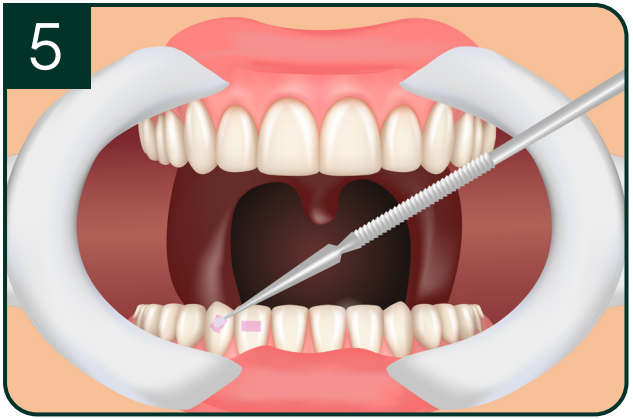
Prophy teeth with an oil-free pumice or paste. Rinse and dry thoroughly.

Note: If using Transbond™ Plus Self Etching Primer (SEP) in this procedure you can prophy with the pumice OR a chemical prophy using the etching gel from step 4 and then proceed directly to step 5 using SEP.



Etch

Etch teeth with Solventum™ Etching Gel System or another etching agent with phosphoric acid. Rinse and dry thoroughly.



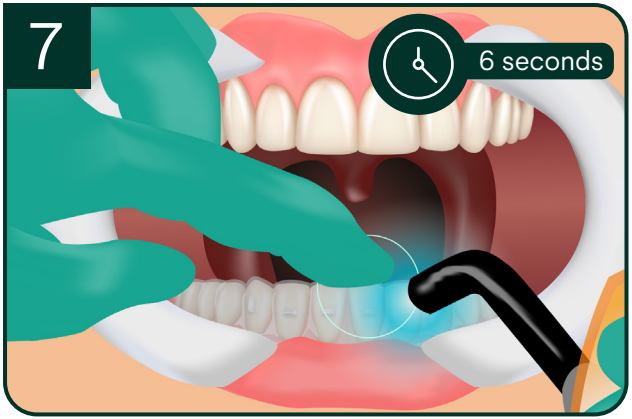
Prime

Add primer to teeth with Transbond™ XT Light Cure Adhesive Primer or other primer.

Note: For dental professionals, select a dental adhesive and follow the manufacturer's instructions for use.

Insert

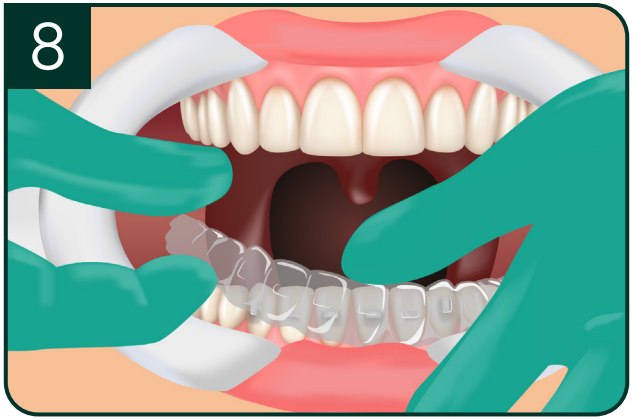
Insert the attachment template and apply light pressure to ensure a correct fit.



Light cure

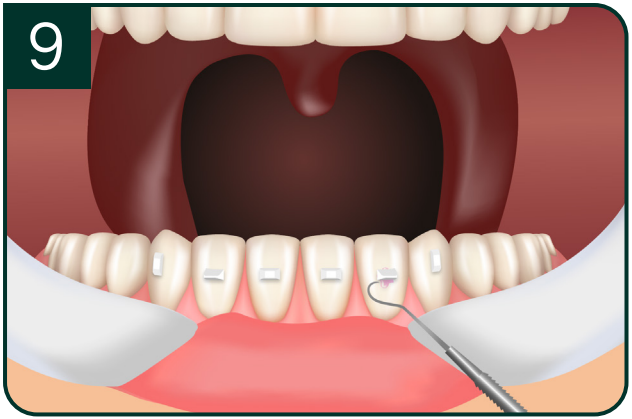
1. Apply light pressure with the finger on the occlusal surface and with the tip of the curing light directly over the attachment.
2. Light cure each attachment for a minimum of 6 seconds with the Ortholux™ Luminous Curing Light.

Note: If using a curing light from another manufacturer, reference and follow that manufacturer's instructions for use related to proper light curing techniques.



Remove

Remove attachment template from the patient's mouth.



Check

1. Confirm the secure bond of each of the attachments.
2. Remove any excess flash using a bur, polishing disk or scaler.

For more information, contact Clinician Support at 1-800-423-4588.

Recommended curing times for Solventum orthodontic adhesives.*

Adhesive	Appliance	Ortholux™ Luminous Curing Light
APC™ Flash-Free Adhesive Coated Brackets	Metal brackets	6 seconds mesial × 6 seconds distal
	Ceramic brackets	3 seconds through the bracket
	Buccal tubes (direct bond)	6 seconds mesial × 6 seconds occlusal
APC™ II Adhesive Coated Brackets, APC™ PLUS Adhesive Coated Brackets, Transbond™ PLUS Color Change Adhesive, Transbond™ XT Adhesive	Metal brackets	3 seconds mesial × 3 seconds distal
	Ceramic brackets	3 seconds through the bracket
	Buccal tubes (direct bond)	6 seconds mesial × 6 seconds occlusal
Transbond™ XT Adhesive	Aligner attachments	6 seconds through the template
Transbond™ LR Adhesive	Lingual retainers	3 seconds mesial × 3 seconds distal
Transbond™ Plus Band Adhesive	Molar bands	12 seconds (3 seconds per cusp)
Unitek™ Multi-Cure Glass Ionomer Band Cement		
Transbond™ Supreme LV Low Viscosity Light Cure Adhesive	Indirect trays (metal brackets)	6 seconds mesial × 6 seconds distal through the trays
	Indirect trays (ceramic brackets)	6 seconds through the bracket and trays
	Aligner attachments	6 seconds through the template

*These curing times assume proper angle and distance of the curing light to the teeth. Also assumes intensity of 1,600 mW/cm2. If less intensity is used, increase curing time.

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