



How to Fabricate In-House Aligners

An AAO TechSelect Guide



1 Block out necessary undercuts.

- Use block out material to cover edentulous spans and undercuts to prevent aligner material from tightly forming to these areas.
- Failure to block out could result in difficulty inserting/removing aligner.

NOTE: Tooth movement software may have options to do this virtually, but still double check each model.



2 Spray model with silicone release spray.

- This allows for easier removal of aligner from model.



3 Use pressure forming machine to form aligner.

- Use recommended PSI on pressure forming machine and appropriate heating code/time for selected plastic.
- Plastic packaging will designate the heating time.

NOTE: Material selection at this stage will affect the stiffness and force levels of the aligner. Different materials can be used at different stages.



4 Separate aligner from model.

- Be careful not to distort aligner or break model when separating.
- Typically, a rough initial trim of the aligner is needed with a lab handpiece or large scissor before removing the aligner from the model.



5 Cut out aligner.

- Use plate shears for bulk cutting and curved, fine tipped scissors for more precise cutting.
- An accurate and smooth trim will dramatically reduce the time for finishing.

NOTE: The trim level will significantly affect the retentiveness of the aligner. A straight cut 2mm above the gingival zenith will be around twice as retentive as a scalloped cut without attachments – that jumps to 4 times as retentive with attachments.



6 Buff aligner for a smooth finish.

- Use rotary buffing wheel on the edges to create a smooth finish.
- This will make aligner more comfortable to wear.



7 Sterilize aligners.

- Consider UV light sterilization to ensure aligners are sterile. There are other sterilization options besides UV light.
- Do not use heat: Heat sterilization will deform the aligner so it can't be used.
- Viable options: Cold sterilization or a high-level disinfection spray are safe to use.

Additional Notes:

Some aligner materials will have a protective sheet on each side of the material. For some materials, this needs to be removed prior to thermoforming, while others are meant to be removed after polishing. Please review the directions for your aligner material of choice.