



U.S. Orthodontist Turns to EnvisionTEC for Invisible Aligner Production

Established and owned by Dr. Cosmo Haralambidis (Dr. Cosmo), Cranston Orthodontics is an orthodontic practice serving several communities (Cranston, Providence, Johnston, Scituate, Warwick, West Warwick, Coventry, East Greenwich, East Providence) and the surrounding Rhode Island and southern Massachusetts areas.

Dr. Cosmo holds certifications with a number of medical institutions, including the American Academy of Oral and Maxillofacial Radiology, in 3D CT imaging. He is also in the top 5% to achieve the diplomate status of the ABO (American Board of Orthodontics).

Under Dr. Cosmo's leadership, his talented and experienced staff provides a state-of-the-art orthodontic service in a comfortable and family-friendly environment.

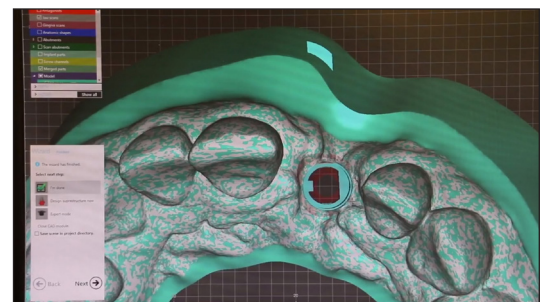
As an expert in the production of invisible aligners and braces, the team at Cranston Orthodontics uses the latest 3D scanning and design software combined with EnvisionTEC 3D printers to give patients the most accurate and effective solutions.

Why look at 3D printing?

3D printing and scanning technology has had a massive effect on orthodontics, allowing for the production of more accurate and more effective appliances than ever before. The increased use has resulted in an improved experience for patients, from the use of less intrusive techniques by taking scans of their teeth instead of impressions. And by providing much faster turnarounds, the team is able to produce appliances in a fraction of time over traditional methods.



Dr. Cosmo scans the mouth of a patient using an inter-oral scanner.



The scans are manipulated before being laid out, and sent to the printer for production.

Cranston Orthodontics

Industry:
Dental/Orthodontic

Machines:
Vida

Materials:
E-Model Light

“Having the ability to see the teeth in model form and then fine tune from there, the ability to scan now and look at the models and do a select fit, and having a one day turnaround time is truly where we are providing a service to our patients”

- Dr. Cosmo, Founder, Cranston Orthodontics

Dr. Cosmo wanted to produce clear aligners in house, an effective alternative to traditional braces. These are vacuum formed clear, removable trays that are used to straighten teeth. Each aligner is custom-produced to fit the individual patient and designed to gradually move teeth into their correct position.

Why EnvisionTEC?

Having seen the rise in the use of 3D CAD/CAM within orthodontics, Dr. Cosmo understood the importance of embracing 3D printing technologies. He started looking for a company that would provide, not only a fast accurate printer, but also the correct materials with the right properties for his needs.

This is when he researched EnvisionTEC. EnvisionTEC’s many years of experience in the dental industry were obvious from the outset compared to rivals. The 3D printers available include small desktop models, capable of producing a few models to large frame 3SP machines with the capacity to print hundreds of models simultaneously at extremely high resolutions. This is combined with a range of materials designed specifically for dental and orthodontic use, including a huge range of FDA and CE approved materials.

Dr. Cosmo examined his options and after seeing the Vida desktop printer with E-Model material he settled on two for the practice.

“E-Model material gives us the high detail and accuracy and ease of function and use allowing our assistants to make clear aligners quickly and smoothly,” said Dr. Cosmo. “It is a very strong material and it never breaks. It’s reproducible, multiple aligners can be made from the same model so we don’t have to rescan and reprint.”

- Dr. Cosmo, Founder, Cranston Orthodontics

The Vida machines are now used constantly to print models both horizontally and vertically; allowing the team to produce tight fitting, accurate aligners for their patients.

The Future

Dr. Cosmo has seen a dramatic increase in the demand for the invisible aligners he produces, as such he is approaching the capacity of his current two machines. Impressed with the printers, their print quality, speed and reliability; Dr. Cosmo is looking to expand production by buying more to meet his demand.

“The EnvisionTEC Vida is simply an amazing tool that we can’t live without. That’s why we purchased two and now we’re probably going to be purchasing another two.”

- Dr. Cosmo, Founder, Cranston Orthodontics



Dental arches printed vertically on the Vida.



Below the printed arches are dried and cleaned.



The arches are then placed on a vacuum forming machine and material is formed over them.



Aligners are then cut out and finished ready for use (below).



EnvisionTEC materials and 3D Printers for Dental and Orthodontic applications

EnvisionTEC offers a full range of desktop, full-production and high-speed continuous 3D printers for dentists, orthodontics and dental labs. EnvisionTEC 3D printers deliver tight-fitting crowns and orthodontic models with a best-in-class smooth surface that results in crystal-clear thermoformed aligners.

Paired with an industry-leading materials library, featuring a variety of FDA and CE-approved materials, EnvisionTEC machines offer unmatched flexibility and a complete solution that delivers reliable, proven results.

Clinicians are rapidly adopting EnvisionTEC technologies to lower costs, provide more convenient chair-side care and have tighter control over treatment plans. Dental labs, meanwhile, are finding 3D printing technologies are allowing them to increase competitiveness and re-shore production.

EnvisionTEC materials

- **E-Denture** - A biocompatible Class IIa material suitable for 3D printing all types of denture bases.
- **E-Denstone** - A material developed specifically for the rapid production of highly accurate, scannable dental models.
- **E-Dent 100/400** - printing materials for the production of crowns, bridges and veneers for long-term temporary use.
- **Press E-Cast** - A wax-filled material for the production of partial frameworks and full anatomical crowns and bridges.
- **E-Gum** - developed for use in the creation of flexible gingival masks for use in combination with 3D printed dental models.
- **E-Guard** - A biocompatible transparent material for the production of accurate bite splints and night guards.
- **E-Guide Tint** - A biocompatible Class I material for the production of high precision surgical drill guides for use in implant surgery.

About EnvisionTEC

EnvisionTEC is a leading global provider of professional-grade 3D printing solutions. Founded in 2002 with its pioneering commercial DLP printing technology, EnvisionTEC now sells a range of printer configurations based on six distinct technologies that build objects from digital design files.

The company's premium 3D printers serve a variety of medical, professional and industrial markets, and are valued for precision, surface quality, functionality and speed.

"The EnvisionTEC Vida is a game changer for patients and for our orthodontic office...We're so dependent on it. It is the foundation of our office and just simply incredible."

- Dr. Cosmo, Founder, Cranston Orthodontics

- **E-IDB** - A material allowing for the production of indirect bonding trays.
- **E-Model** - A tough material that is ideal for the production of dental and orthodontic models.
- **E-OrthoShape** - A grey ABS-like material recommended for the affordable volume production of models or thermoformed aligners.
- **E-Partial** - A castable material developed for the creation of delicate partial frameworks with thin features and some flexibility.

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