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Proud of our History, Looking Forward to the Future

Why you can't work without the Anaxdent System!

By Sean Landberg RDT

This article discusses the subtle and often overlooked discrepancy that occurs when one does not use the Anaxdent system, but traditional techniques for the production of acrylic restorations. The discrepancy takes the form of a small growth in all dimensions. It is only by using a metal flask (Anax Form) and injecting the restorative material, that this discrepancy is eliminated. As the acrylic temporary restoration forms such an integral building block in the successful outcome of a large portion of dental cases undertaken, it seems is paramount that this discrepancy is eliminated.

Overview

Below are two images showing the difference, when processing temporary restorations, between the old techniques and the Anaxdent technique. To reveal and quantify the difference, I produced one removable white wax-up on one green model as shown in the images.



Image 1: This image shows the inaccuracy of the old techniques.



Image 2: This image shows the accuracy of the Anaxdent system.

After which, in unison, I produced two, 2-stage temporaries, including cutback, custom staining on dentine and then laminating it, in enamel, using New Outline Acrylic from Anaxdent. After the manufacturing of each temporary with its corresponding technique, a simple silicone mask was produced against the lingual and incisal of each temporary. The white wax up was then returned to the model and each of the silicone masks were placed on the lingual of the white wax-up. Any discrepancy in the temporary compared to the wax-up, would then become apparent.

If one now looks at the incisal area of image 1, there is a gap revealing the discrepancy. It shows that the old technique results in a small growth in all directions.

If one now looks in the incisal area of image 2, it is fitting remarkably well. Therefore the accuracy shown here proves, "Why you can't work without the Anaxdent system!"

“When one brings two parts of a mould together with the filler material already loaded in one or more parts of said mould, no matter the evasive technique, the proper closure of the mould will always be compromised, in one or more dimensions.”

Step by Step Comparison

- First stages



Image 3 & 4: Putty moulds made in each System's respective material, over the removable diagnostic wax-up. This is cut and verified for fit on the single green model.



Image 5 & 6: Macro photo showing adaptation and fit on the palatal of each putty on the single green model.



Image 7 & 8: Macro photo showing adaptation and fit on the Buccal of each putty on the single green model.

At this stage there is no difference between the old and new techniques.

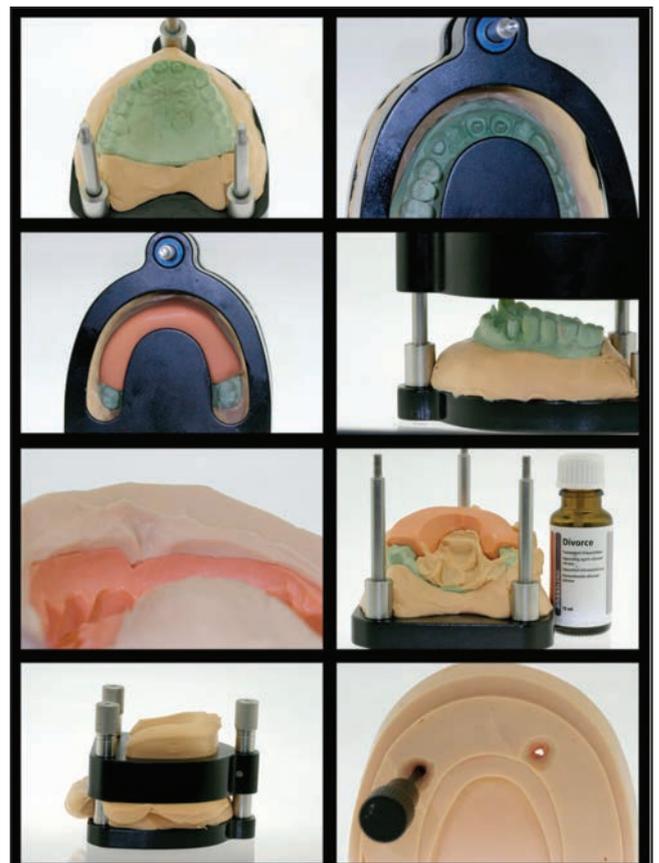
We have found the results and surface details reproduced with the Anaxdent putty (Matrix Form 60 A+B[®]) to be far superior than an ordinary putty but this is a personal/ business preference and not essential.

Step by Step Comparison Preparation and Loading

On the right are the simple steps before loading the filler material in the mould of the old technique.



Overleaf are all the steps needed before loading the filler material into the mould for the new Anaxdent technique. There are more steps and more material needed, but these steps are paramount in attaining the very accurate baseline result, we require. If we are to produce temporary restorations, it will become apparent that there is only one way to achieve accuracy and that, the old methods are obsolete.



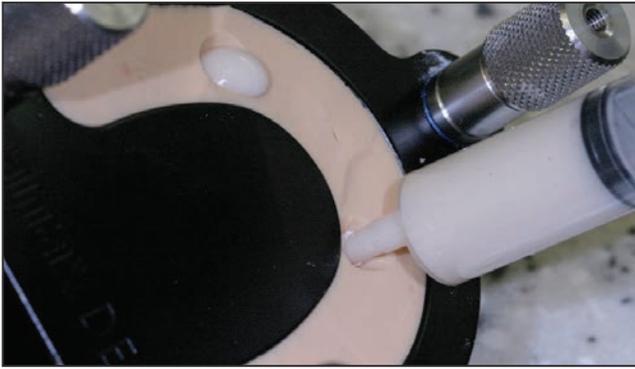


Image 12

Step by Step Comparison Analysis of the Dentine stage

Dentine stage cross checking from linguals of the temporary dentine against the wax-up. Referring to images 9,10, the dentine is removed from mould, the flash is trimmed, margins exposed and returned to the model. Putty is adapted to the lingual of the acrylic. Once set, the dentine stage is removed from the model and the wax-up is re-seated. We can now check the accuracy of the old technique. As we can see the putty is re-seated completely on the model but there is a gap now between the putty and the wax-up! It is this gap that shows discrepancy of the old technique. Above, referring to images 11 and 12, with the new technique, you can see the putty fits back down to the wax-up as it should do, showing no growth.



Image 9



Image 10



Image 11

Step by Step Comparison



Image 13



Image 14

Cutback, LC BOND (Anaxblend), composite and stain (Anaxblend) build up are performed identically. (The stain and minute composite built up are optional and they are used to achieve the highest aesthetics)

Then old technique was used on the above image 13, for filling the enamel. The new technique was used on the above, image 14, injecting the enamel to fill the mould.

Flash Differences

After the enamel stage you can see the amount of flash that occurs with both systems. The old system reveals extensive flash that appears thick. The Anaxdent system has less flash that is thinner in sections. Although there is flash with both systems, the biggest difference between them is that the acrylic is injected into the void within the mould, unlike the old technique. Anaxdent's New Outline Acrylic is the perfect choice, as it has been specially designed to be injected. There is also flash occurring, however there is no resultant discrepancy, it just rejects any excess pressure that may have forced a small flash into the split mould. The flash was removed, trimmed back to the margins and the analysis made.



Old technique resultant flash



New Anaxdent technique resultant flash

Analysis Post Enamel Layering

If you now refer to images 15,16,17,18, this shows the old technique at work, which again shows the distortion Post Enamel Layering. So even though the dentine had been cutback, trimmed carefully in all areas, making sure the mould returns to its original position, before processing the enamel layer, it shows the discrepancy has returned again. One might say that it is even more distorted than the Post Dentine Phase. The reason for this discrepancy is because of the pneumatic effect of acrylic in thin sections. If the acrylic is filled in the mould and the mould is placed on the model over the preps, the acrylic will inevitably spread across the adjacent teeth in varying amounts and even the soft tissue, where the mask is locating against. Given that now there is even less room this pneumatic effect of acrylic in thin sections is compounded.

The pneumatic pressure is so great, created by this thin layer of acrylic that no amount of location or squeezing with elastic bands or trying to clamp the mould in an articulator, will lead to accuracy. Once the acrylic has come between the mould and existing teeth or any surface, it will never return to the exact original position of the wax up, it will always be open. The two parts of the mould need to be together within the confines of a metal clamp and then the filler material injected. Referring to the images 19,20,21,22, we see the results of this technique and how accurate it is.

I must reiterate again that the analysing putty is new, has been mixed and adapted to the lingual of the acrylic temporary, post the enamel layering, and with no adjustment or polishing that could affect the calculations, other than flash removal & margin exposing. The removable wax up is returned once again to the model and the analysing putty is placed behind the removable wax up, thus revealing any discrepancy.

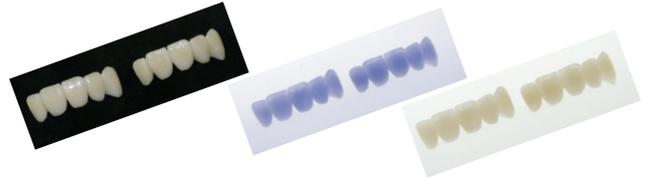


Old technique Images 15,16,17,18.



Anaxdent technique Images 19,20,21,22.

Comparison of shape and size



Conclusion

In the world of dentistry, where the scale on which we work is very small any uncontrolled dimensional change is critical. We also acknowledge that replicating the exact dimensions, established and agreed chair-side and/or in the laboratory, in the temporary phase is of paramount importance. This master base-line in each case takes the form of the diagnostic wax-up or a direct wax-up try-in, (verified chair-side or in-situ by clinician and most importantly by the patient) as the product verified and requested. Using an old system to try and replicate this master base-line is futile and is not being efficient at all. One can use the old seemingly quicker method and fool oneself that it looks great but we all know that this type of technique leads to work that has grown in all directions, which we cannot present to the patient. So we end up trimming the whole appliance in all dimensions. If we are honest with ourselves, we are wasting our time and the proper height dimensions, occlusion, shape, surface texture etc. (established in the preparation work i.e. the verified diagnostic wax-up) have been altered or even lost completely.

Unless one uses a two part mould that is clamped together within a metal ask (Anax Form) before the acrylic (New Outline) is injected, the result will not be accurate. No matter how you perform the old technique, cut notches, use elastic bands or try and incorporate the old technique within an articulator as a clamp it will make no difference. The anomaly will re-occur every time. The solution is provided in the Anaxdent technique, where first the two parts of the mould are placed together i.e. the model and the silicone form and the whole assembly is passively clamped together in a metal flask (Anax Form) and locked down. Only then is the filler material (New Outline Acrylic) injected into the channels of the mould.

The results from this article also have implications for the constructions of occlusal appliances, stents and especially composite restorations. To conclude there is only one way of accurately performing temporary restoration construction and that is with the metal flask system from Anaxdent.

The Completed Temporaries

With only the flash and margins trimmed and a very thin layer of skin glaze we can make visual comparisons of the different results from the different techniques. One might say that image 23, looks better but this would prove the point even more, this is the old technique on the left! The Temporary has more enamel on it and slightly more translucency at the tips but this is only there because the whole temporary has grown slightly i.e. more enamel all



Image 23: Old technique Temporary



Image 24: Anaxdent technique



Old technique



Anaxdent technique

Sean Landberg RDT



My dental career began with studies at the Technikon Natal and work at Dolphin Coast Dental overlooking the Indian Ocean, just North of Durban, South Africa. I have been working in the UK for 16 years, mostly at Lab 39 Ltd. In the early years I worked alongside Wilky Bunyan focusing on high precision in dentistry and occlusion philosophies.

From 2000 - 2003 I was a technical advisor for Dental Technologies magazine. In 2003 and 2008 the British Institute of Dental and Surgical Technologists asked me to participate in a one day seminar demonstrating new techniques for producing soft tissue silicone work on implant models.

I follow the occlusal principles of Dawson and attend John Cranham's lectures when he visits the UK. On many occasions I have attended the Stockport seminars founded by Roy Higson and graced by the late lecturer Bill Comcowich from Aspen USA.

In 2011 I had the pleasure of being invited to the USC in Los Angeles by Mamaly Reshad, where I saw Dr. Pascal Magne in action. This also included a one week hands-on course at the Oral Design Centre on-campus.

In the May 2012 edition of Aesthetic Dentistry Today I featured as 'Technician of the Moment'.

I am currently managing Lab 39 Ltd and have the privilege of being part of an amazing team, who discreetly look after famous actresses, actors and playwrights amongst others.

For further information on the techniques and products used in Sean's article please call Skillbond on 01494 448474 or email info@skillbond.com

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Q1.) Explain the flaw found in current systems to produce temporaries that are not found in the Anaxdent system?

Q2.) In the section 'flash differences', the pictures look similar in the amount of flash produced. Explain the difference between the two types of flash.

Q3.) Is there any difference in the cutback of the dentine, internal staining in effects or quantities between the two systems?

Q4.) Looking at the pictures of the completed temporaries, old and Anaxdent techniques, there doesn't seem to be much of a difference between the two. What is the difference in dimension and why in the world of dentistry would it make a difference?

Q5.) What are the key items to the precision found in the Anaxdent system? (3 items)

Q6.) What is the recommended acrylic to be used with this system, as it needs to be injected into the flask?

Q7.) Looking at image one, what is clearly visible with the silicone mask and the diagnostic wax-up?

Q8.) Why can you not work without the Anaxdent system?

Q9.) In order to make highly aesthetics temporary restorations what extra optional steps should be taken to achieve this?

Q10.) Given that we are used to the old technique producing restorations with increased overall dimensions. What should we watch out for when producing restorations with the new Anaxdent technique?

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