

Why should we press vs. layering?

by Jorg Muller



One of the comments I hear most often: 'Why shall I press, I am much faster with layering.' There are several aspects, which need to be addressed if we compare both procedures.

Most important before we go into details, I have decided to switch my production to a system, which is more significant than just comparing a procedure of layering to pressing.

Treatment consultation:

A diagnostic wax up is a common procedure for most labs.

The purpose of the wax up is not only to show the patient the before and possible after solution, but also the ability to fabricate a temporary to test drive the new smile design.

Any changes to the design should be adjusted by the dentist with light cure composite to determine the exact length, angulations, midline and horizontal.

For the posterior region, a malocclusion can be explained to the patient by comparing a properly designed occlusion compared to the mostly flat and poorly designed tooth fragments.



*photo 1, 2 & 3:
Controlled support
of the ceramics
through planned
framework production*

Framework design: Proper support for stability and color!

To avoid porcelain chipping it is very important to have an even and well supported layer of porcelain. Regardless of the choice of material, whether metal or zirconia, the diagnostic wax up can be transferred with a wax injector for a proper framework reduction.

A properly designed thickness will also serve as a proper color support.



Implementation of the wax up in ceramics



A modern computer software should be able to scan a wax up and reduce the data and to mill a perfectly designed framework with a reduction of 0.7 mm to 1mm. A properly designed thickness will also serve as a proper color support.

Bonding to zirconia, better results through slower rising and cooling phase through a press cycle

A study done by the University of Aachen (Germany), shows the differences in the microscopic porcelain structure between pressed and layered long span bridges.

The preheat time during a press cycle is around 1 to 2 hours for the framework during a press cycle vs. 15 -17 min for the firing cycle using the layering technique. Even the cooling time for the pressed units is typically longer than a layered unit.



2

This clearly shows the difference in bonding to the zirconia framework and explains the porosities in between the pontic areas of long span bridges using the layering technique.

Perfect one to one transfer of the diagnostic wax up to the definite restoration

A consistent level of quality with the same results are a challenge for each technician. There are good day and days, when our performance is lagging. With the diagnostic wax up shown to the patient at the treatment consultation, we make a promise how we envision the definite restoration.

3



However in most labs a different person is responsible for the diagnostic wax up as the person who is responsible for the porcelain. Both technicians have a different handwriting and style.

Even if it is done by the same technician, the diagnostic cast is done several weeks or even month before the final restoration is being completed.

Needless to say, the odds of a difference in form are obvious.

The point here is, that consistency is a professional attitude and the transfer of knowledge and quality is most vital for the business development of each laboratory!



Implementation of the wax up in ceramics



Conclusion: The press technique has proven to be far more consistent in the workflow of my laboratory. Our daily workload has been less stressful and more enjoyable, a key to everyone's lifestyle!

AP

www.apdental.net