



MINIMALLY INVASIVE AIDE WITH A MAXIMUM RANGE OF APPLICATIONS

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INTRO

MINIMALLY INVASIVE DENTISTRY IS NO LONGER MERELY LIMITED TO MICRO-SURGICAL PROCEDURES

Minimally invasive dentistry is no longer merely limited to micro-surgical procedures. For years now, endodontic and restorative dentistry has also been experiencing a shift toward minimally invasive techniques. Inlays, onlays, non-prep or partial veneers, and much more have become part of everyday conservative treatment measures. Without acid etching, this technique would be impossible.

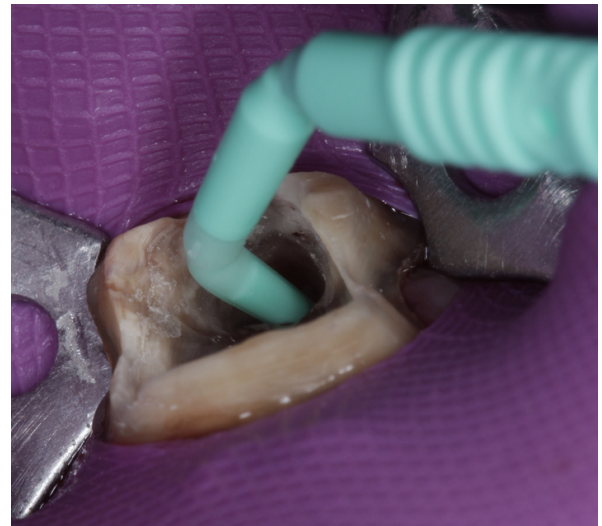


Fig. 1: The ZeroFloX™ Micro Applicator can also be used in difficult-to-reach areas, thanks to its multiple ergonomic options.



Fig. 2: Due to ZeroFloX stable elastomer bristles, even the smallest ceramic components can be fixed into place for permanent bonding or try-ins.



Fig. 3: Particularly in the proximal area or in very small cavities, bonding agents or other liquids can be applied with sufficient pressure.

CONTAMINATION RISKS FROM BRUSH APPLICATORS

BRUSH SYSTEMS ABSORB TOO MUCH LIQUID

Improved restorative materials, such as composites, compomers, and high-performance ceramics, allow for increasingly less invasive tooth-conserving restorations. However, the adhesive bonding agents required remain complex and cost-intensive. In addition to their desired economical application, the practicality and sustainability of the instruments used also play an important role and should not be overlooked.

Brush systems (usually attached onto a handle) often absorb too much liquid, which cannot be applied with sufficient precision. In addition, there is a constant risk that the applicator brush can detach from the handle or the bristles quickly harden or detach due to the chemical agents used (usually light-curing resins). The use of microfiber-flocked applicators also exhibit hardening and detachment phenomena due to the solvents used, which can unintentionally adhere to the enamel or dentin.

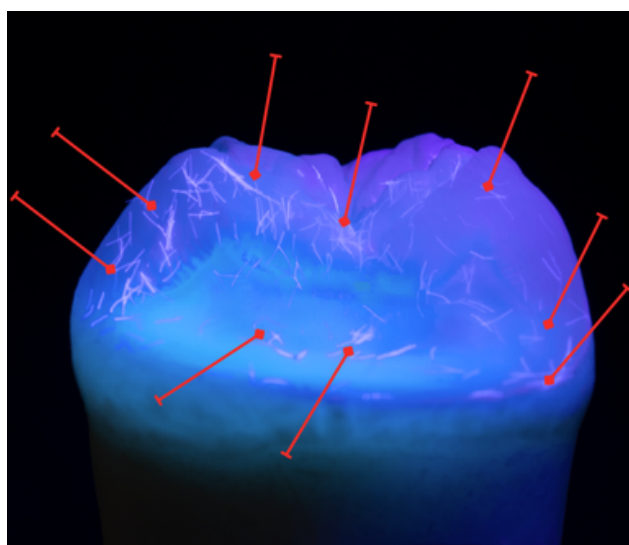


Fig. 4: Clinical application of primer (Optibond FL) followed by fluorescent black light to display fiber flock residues when using a conventional flocked micro applicator. Courtesy of Prof. Fabio M. Salomão DDS, MSc, PhD, Brazil

ZEROFLOX™

THE INNOVATION IN MICRO APPLICATOR

The ZerofloX Micro Applicator is an innovative approach and is manufactured using an injection molding process with a single material; and is therefore dimensionally stable and does not lose any fiber flock particles. This prevents the monoblock elastomer bristles from fraying and also ensures that they retain their shape.

The ZerofloX Micro Applicator allows precise application of all necessary liquids while also significantly reducing the amount of materials used. Even partial wetting of the applicator is possible which allows for universal and greater accuracy (Fig. 6).

The same applicator can be used for multiple bonding applications and applying the adhesive composites.

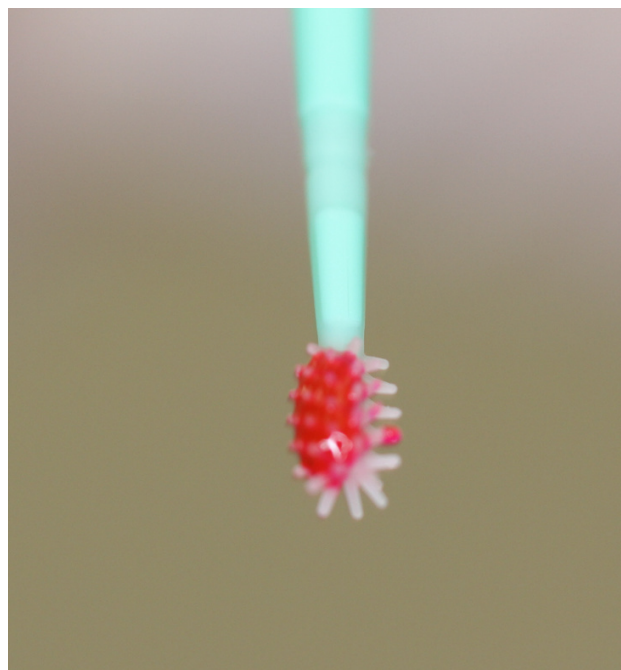


Fig. 5: The partially coated ZerofloX Micro Applicator demonstrates economical and precise absorption of liquids.



Fig. 6: For ceramic etching or also final bonding procedures, the inlay is already precisely bonded to the applicator in the dental laboratory, thus ensuring for convenient handling.

USED IN BONDING APPLICATION

WITH ZEROFLOX™

For this purpose, I remove any remaining bonding residue from the applied materials using compressed air. It is even helpful for placing and adapting composite materials using conventional filling therapy, since filling materials do not adhere to the applicator and no bonding agent is required as a lubricant. Despite its visible elastomer bristles, the bonding agent can be precisely coated and is therefore easier to apply compared to applicator brushes or conventional flocked micro applicators. When used in conjunction with a caries detector (dye in propylene glycol), the ZerofloX Micro Applicator absorbs far less of the expensive detector fluid and can be applied more precisely.



Fig. 7: The elastomer bristle structure of the applicator head allows the caries detector to be applied in difficult-to-reach areas.



Fig. 8: The stable shaft and elastomer bristles allow for sufficient disinfection of the pulp cavity as well as flock-free removal of cell particles, which can then be easily rinsed out using micro cannulas.

THE RESULT

After the root canal filling is complete, the ZerofloX™ Micro Applicator is also effective for cementing endodontic stabilization posts. The design of the elastomer bristle head allows bonding agents to be applied deeply into the root canal, even in the difficult-to-reach drill channels of the respective root canal post systems. And finally, thanks to its stable tip and applicator shaft with two bending points, the ZerofloX Micro Applicator also allows veneers or inlays to be fixed into place for easier bonding.

Flocked fiber particles do not stick to the ceramic, and the bonding agent required for fixation can be easily removed due to the stable elastomer bristles. The two bending points also make it easier to position the applicator, thereby helping to ensure precise bonding and easy removal of residual adhesive.

All in all, the ZerofloX Micro Applicator with its fiber-free elastomer bristles represents a true evolution in adhesive technology; and thanks to its wide range of applications has become an everyday companion in our practice.

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