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Newsletter

Smile Design Center

Implant Specialists - Home of the Flex Temps

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Bonding Zirconia Restorations has improved greatly in recent months. We have included information to help share some of the recent products and data.



New E Zirconia Multilayer, High Translucent and 1000 MPa Restoration

The clinical procedures for cementation of zirconia restorations are similar to those used when cementing gold crowns. The primary resistance and retention form of the preparation is mainly responsible for the long-term success of the restoration. Because zirconia cementation uses a traditional cementation procedure, there are many material options.

Glass ionomer and resin modified glass ionomer cements are the most commonly used. My recommendation is to follow the recommended protocols for the brand you currently use.

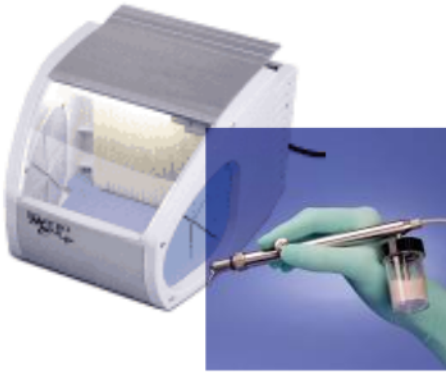
When considering possible bonding of zirconia restorations to the tooth, realize that the conventional methods applied to the bonding of silica-based ceramics are not successful. You cannot acid etch and silanate the intaglio surface as you can with lithium disilicate (e.max) or other glass ceramic restorations.

Recently, new products have been developed that increase the bond of resin cements to zirconia. Data from outcome studies have confirmed that a combination of airborne particle abrasion (50 micron Al₂O₃ at 2.5 bar) and resin composites containing 10-methacryloyloxydecyl dihydrogen phosphate (MDP) monomer, achieve a durable bond of zirconia to a prepared tooth. For example, the 3M Scotchbond Universal Adhesive contains the MDP monomer, which optimizes its self-etch performance when used in combination with RelyX Ultimate adhesive resin cement. The bottom line is that cementation of zirconia restorations is highly successful when there is adequate resistance and retention form. With current advancements of dental adhesives, it is now possible to increase the retention of the restoration of the bonding process with the appropriate materials.

Bob Winter, D.D.S., Spear Faculty and Contributing Author

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Equipment and Products for Cementation of Zirconia Restorations

Sandblast the crowns. Then blow out the sand residue. Sand 2.5 bars using 110 micron for 10 to 20 seconds. Here may lie the issue. I will be checking on this fact. Most sanders give you 50 micron aluminum oxide.



After trying in the crown clean the surface of the tooth with Ivoclean to clean out any bacteria residue.

Then treat the inside of the crown with monobond or any other silanate liquid to help promote a strong ceramic bond.



Apply Scotchbond Universal as your bonding agent. Make sure to follow all of the manufacture's directions with any of the products involved.

Use RelyX Ultimate as your bonding material. Use this procedure especially on any crowns where retention may be compromised due to prep size or crown preparation.

You can build natural retention with a 6 degree tapered prep. This is not a lot of taper. When you do the 6 degree taper make sure you use a good chamfer prep at the margins so if there is an undercut on the prep the shoulder will allow us to work around the undercut.



Torque of Implant Screws

Old Astra 3.0mm	15 Ncm
3.5/ 4.0 mm	20 Ncm
4.5/ 5.0 mm	25 Ncm
All Astra EV	25 Ncm
Uni-abut. EV	15 Ncm
Hex .050 Inch Driver	

Biomet 3I	20 Ncm
Hex .040 Inch Driver	
Camlog	20 Ncm
Hex .050 Inch Driver	

Nobel Biocare most implants	35 Ncm
Nobel 3.0mm Active	15 Ncm
Multi-Unit abutment	15 Ncm
Uni-grip Driver	

Straumann	35 Ncm
SCS Driver	
Zimmer	30 Ncm
Bio Horizon	30 Ncm
Hex .050 Inch Driver	

Angulated Screw Drivers:

Nobel Biocare "Omni Driver"	35 Ncm
Preat "Dynamic Driver"	25Ncm
Panthera Angle Drive	25Ncm ?
Panthera wrench uses the Implant Company's screws and only the driver is changed. Each driver is different for each implant system.	