

# The Dent-Liner™

*A Bulletin Dealing With Issues For Dental Health Professionals*

## Adhesive Bonding Technique for Attachments



Peter T. Pontsa, RDT is president of Dent-Line of Canada Inc. with over 37 years of experience in the dental profession as a laboratory owner and a technician. He is a leader in superior professional techniques in fixed and removable restorations and he shares this knowledge through articles and seminars which he regularly provides. He is also a past president of the College of Dental Technologists of Ontario. Currently he is a member of the Ontario Study Club for Osseointegration.

Currently there are many attachments on the market and just as many techniques and corresponding parts that are incorporated into the prosthesis in order for them to function effectively. Some of them are rather difficult and technique sensitive with many complicated parts that are tricky at best, to assemble and complete. The adhesive resin bonding technique is one that is rather easy to use, with such predictable results it is a wonder that it is not used more often in the dental laboratory. Adhesive resin-bonding is the union of components using a bonding agent. Through adhesion and cohesion, the adhesive which is a non metallic substance connects the surfaces together. This procedure has been an essential factor in fabrication and construction in many areas of dentistry today, an example is the Maryland bridge. The fixation of orthodontic brackets and the use of bonding agents in the oral cavity have become common place and are considered state of the art. Recently an adhesive bonding technique for connecting attachments to enamel had been documented. An especially

remarkable procedure in dental technology is the bonding of attachments to Removable Partial Denture cast frameworks, such as with Bredent's "Stud Fixator" attachment (part no. 44002651) which uses a soft integration into the anchoring crown. The adhesive bonding technique has some advantages in bonding to crown and bridge, implant bars, root caps and partial dentures. Some of these advantages are that the negative hurdles in casting on are eliminated and minor inaccuracies are compensated for thereby assuring superior precision in the path of insertion. There is an option of using alloys with greater physical properties. Also retained is the advantage of the improved properties obtained from hardened CAD-CAM attachment materials such as titanium. Another convenience is a larger choice of gold or base alloys of which some may have a greater melting temperature than the attachment. There is also the issue of compatibility with different metals such as titanium. Finally there is no change to the

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- Aesthetic Dentures; Removables on a Come Back.

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## Aesthetic Dentures; Removables on a Come Back

With the advent of all ceramic CAD-CAM, pressables and aesthetics moving forward in our profession, there seems to be a perception that the removable denture segment is declining and will eventually vanish. The demand for functional and aesthetic partial and full dentures is on an upswing and there will be a greater demand because of our aging population. The denture specialist who can deliver them should be leading the market place. In the United States, a recent denture fee survey indicated low median fees were charged for removables across the nation. This hardly astonished anybody, however, it indicates that removables are perceived to have less value. Dental Health Professionals in both the United States and Canada are

being motivated by an increased consumer demand and expectation for natural looking restorations. Because of television advertising and popular make over shows, exposure to the public has become overwhelming and this increased awareness emphasizes that even dentures can look natural. This bigger need for aesthetics has motivated manufacturers to expand production on new and innovative ways to produce a new standard in denture construction; one that can also be a profit centre. The complete Enigma Denture System can provide the aesthetics patients now demand and also provide your practice with increased profits. The system won the Queen's Award for Innovation in 2000 and just

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Adhesive Bonding for Attachments

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Auxiliary Modelling Element for vks-oc and vks-sg and the titanium housing, suitable for the adhesive bonding technique.

physical properties of the attachment by thermal heating, whether by soldering or by casting. The adhesives available today are organic compounds that have been synthetically altered. Generally two compound adhesives are used, such as paste to paste, powder to liquid or paste to liquid. They are usually set by chemical reaction when mixed together, cold cured or by ultra violet light. To ensure success when using the adhesive bonding technique, always arrange for an adequate amount of adhesive to complete the procedure. The most recent attachment Bredent has introduced at the International Dental Show in Köln this year is the VKS-

OC/SG exchangeable attachment. This attachment was designed to be bonded into the prosthesis with a bonding adhesive. The original exchangeable stud and gold sleeve was devised to be soldered or cast on. The HSL sleeve is made of AU,Pt, Pd and has a melting range between 1320 °C and 1460 °C. The manufacturer recommended that the temperature for soldering or casting not exceed 1270 °C, before damage was done to the threads. The other sleeve, Pt-Ir is for high fusing ceramic alloy with a range between 1820 °C to 1850 °C, however, with the advent of the adhesive bonding technique, many

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The auxiliary modelling element is integrated with the paralleling mandrel into the model according to the path of insertion.



The shape of the auxiliary modelling element allows recognition of the final alignment of the attachment.



Remove the auxiliary modelling element prior to investing.

Featured Product: Renfert's Suction Unit - The Silent



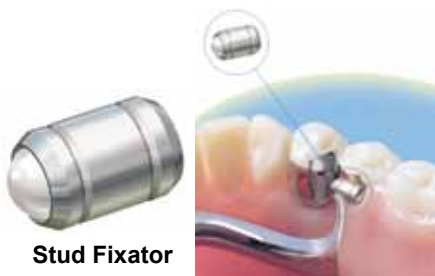
Renfert's New Extraction Unit - The Silent

The new powerhouse dust extraction unit from Renfert has enormous extraction efficiency. Its compact dimensions means it can be stored under the bench, while the low noise operation and convenient automatic start up means it can be used in virtually any department in the laboratory. This unit is almost completely maintenance free and like all other Renfert units comes with a 3 year guarantee. There are nine power levels of extraction, with 99.9% extraction efficiency through a two-filter system.

There is dust free disposal of the dust bag while the HEPA filter is washable and can be used many times before replacement. There is also a "bag full" warning which is both visual and audible. The motor is modular and easy to change. The Silent has a self-diagnostic system and is available in 120 Volts for North American use.

For additional information or to order this product contact the Dent-line of Canada Order Desk at 1-800-250-5111.

Bredent's Stud Fixator



Stud Fixator

This state of the art intra coronal attachment provides retention for new restorations and can be used to refurbish existing restorations therefore increasing their retention. The snap element is made of a ceramic stud and the cavity is filled with silicone which serves as a buffer to ensure durability and a soft integration of

the restoration. The stud fixator is glued in place onto the cast partial framework with an adhesive bonding material such as DTK from Bredent. Due to the quick and easy integration of the stud fixator into the prosthesis, both time and effort can be saved For further information, contact the Dent-line Order Desk at 1-800-250-5111.

Adhesive Bonding for Attachments

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of the variables resulting from currently employed production methods can be eliminated. A benefit to the new VKS-OC/SG exchangeable stud attachment is that the threaded sleeve is made of grade four titanium and can be incorporated with many different alloys with diverse physical properties. The stud is also titanium and can be replaced if it wears out. The production method uses an auxiliary element which is mounted to a parallel mandrel and then the crown, bar or root cap is waxed up. The auxiliary element is removed, revealing a space adequate for the threaded sleeve. The restoration is invested and then cast up. There will be a space created between the titanium thread sleeve and the receiving walls of 0.05 mm which is an appropriate gap for the adhesive to create a proper bond. Follow the instructions for the use of the bonding agent and verify that the expiry date is valid before proceeding. By utilising the ultrasonic cleaner or the steam cleaner, the surface areas to be bonded will be entirely clean. The interface should be sandblasted with Al<sub>2</sub>O<sub>3</sub>, 110 microns, making sure not to touch the adhesive receiving areas with your fingers. The external surface not contacting the adhesive has to be isolated with an insulating agent, such as Bredent's FGP Insulating Agent

(part no. 54001027). The interface area can be silicoated with Bredent's Silano Pen (part no. 32000470). This would increase the strength of the untreated surface of 5 Mpa to 27 mega pascals; an extraordinary increase in shear strength. After mixing the adhesive paste from tube K and B of Bredent's DTK Adhesive (part no. 54000106), apply the mixture in a thin layer to both interface surfaces, ensuring air is not incorporated into the mix. Keep the male attachment in position until the adhesive has set. Remove any excess and allow a further curing time of 12 to 24 hours. This will ensure final setup of the adhesive before inserting the prosthesis. During the final curing, an overdenture or cast partial can still be fabricated utilising the female attachment housing. The procedure of adhesive bonding is relatively easy compared to investing, casting or soldering the male or threaded sleeve into the restoration. As we know, many variables in methods and temperature control may have adverse effects to the pre-manufactured housing and threads, so it is important to realise that alternative methods have been developed due to very good research and development.

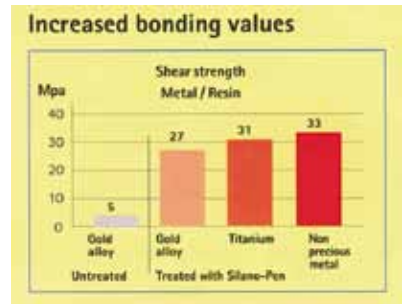
Source; Peter T. Pontsa, RDT. For further details contact us at [info@dent-line.com](mailto:info@dent-line.com).



DTK Adhesive Assortment Kit



The Silano Pen



New research results of the bonding strength and the areas of usage of the Silano-Pen are published in issue No. 3/2001 "Quintessenz für Toothtechnik" carried out by the Zentrum für Toothmedizin, Charité / Berlin under the guidance of Prof. Dr. H.-J. Tiller and Prof. Dr. J.-F. Roulet.



After polishing turn the stud-head screw into the thread sleeve and glue in to the sandblasted space using DTK adhesive.



Place the matrix on the stud-head screw and continue processing in the usual way.



Processing if vks-oc is carried out using the same auxiliary modelling element.

Aesthetic Dentures; Removables on a Come Back

recently in 2004. It has natural looking teeth and gingival colour tones in which to enhance a smile in the aesthetic zone. As the baby boomer generation moves forward, by the time 2006 arrives, the number of people over the age of 65 will double. Statistics Canada reports that from 1991 to 2001, the population aged 80 and over increased 41.2% to 932,000. These numbers are expected to increase by an additional 43% from 2001 to 2011, by which

time it will have exceeded an estimated 1.3 million people. The proportion of people aged 65 and over will start to increase more rapidly by 2011. This is when the oldest baby boomers, those born in 1946 reach 65. The population aged 65 to 69 grew 6% to just over 1.1 million between 1991 and 2001. However, it is expected to soar up to 31% between 2001 and

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### About Our Organization...

The Dent-Liner; Vol. 9 No. 4  
Publisher; Peter T. Pontsa, RDT  
Editor; A. van Breemen, BA

Subscription Rates:  
Canada 1 Year \$ 5.00  
USA 1 Year \$ 7.00  
International 1 Year \$15.00

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## Aesthetic Dentures; Removables on a Come Back

2011. A good percentage of this population will be needing one or two dentures by this time. Even with implants as an option for edentulous patients this area isn't expected to compete to any great degree with the removable denture market. This expansion in the population statistics should awaken dental health professionals, manufacturers, associations and school boards into providing leadership in the removable prosthesis market place. For the last twenty years, dentistry schools provided limited exposure to removable prosthodontics, which has generally compromised the degree of expertise in this area. The trend in dental technology is to focus on ceramics that can pay exceedingly well. Another trend, shows that denturists who provide services for the removable markets find their ranks are also thinning due to retirement and the aging population. This has resulted in a shortfall of qualified dental health professionals that specialize in dentures. With all this information, it would seem that the current situation is an opportunity for motivated, educated and experienced denture specialists to set up and take on the role of a removable expert. Aesthetic dentures command a premium price over standard dentures and patients who know the difference will choose quality. Denturists and dental technologists should charge a premium price, because of the proficiency that they offer and the advice they give due to their extensive knowledge. Change the stigma of removables as a second choice and the profession will change by positioning

the aesthetic denture as a new standard. Why do dental health professionals charge less for removables than crown and bridge work when removables demand more construction and chair side time? Offering a removable case that commands a superior price, fits the mouth well and mimics natural dentition is the next step in reaching a higher standard, not only for the profession but also to provide the patient with a restoration that is of superior quality and construction. It can be difficult to become accustomed to a quality versus quantity attitude when we mostly see laboratories with high volume production as opposed to those who provide custom services. The dental technologists and denturists who have the knowledge can handle these select clients. This specialization in quality driven aesthetic dentures will be the way of the future. This may be the time when the better dental laboratories and denture clinics can increase fees. There is an unserved segment of the public that has expendable income for aesthetic driven procedures. When the data from Statistics Canada becomes the norm and the baby boomers continue to age, then the profession had better be prepared to accommodate future generations of patients. In view of this important development in our industry, Dent-Line of Canada will be offering educational programs on advanced denture techniques and aesthetics. Watch for future announcements on these courses in this publication.

Source; Peter T Pontsa, RDT

## Trade News: The Bredent FDI Team in Montreal

Dent-line of Canada and Bredent would like to thank all of the delegates and customers who stopped by our booth in Montreal for the FDI Conference, August 24th to the 27th. The Sky implants, smile cone abutments and FRP system were of great interest to many visitors. The 3D Bar Abutments, however, stole the show with many visitors very interested in getting this product once available for importation into Canada.

### Upcoming Events:

**Denttechnica** will be held from Friday October 28th to 29th in Montreal at the Hotel Montagne, 1228 rue Nobel Boucherville. Mr. Peter T. Pontsa, RDT and Mr. Hatem Raslan, BA will provide a seminar entitled "**Attachments for Removable Prosthetics**" participants will see new approaches, techniques and



L to R: Mr. Carl van Harck, Mr. Peter Pontsa, Mr. Rainer Christiansen, Mr. Hatem Raslan.

attachments that will improve treatment planning for implants, over dentures and partial dentures. Mr. Raslan will translate the seminar into French. **For further details concerning Denttechnica contact Mr. Jean Compagna at 1-514-728-5352 or Jocelyne Bouchard at 450-929-0153.**