

RelyX™ Unicem Self-Adhesive Universal Resin Cement

2002 IADR/AADR Abstract Highlights and Internal Test Data

Proven Results

Abstracts presented at 80th IADR Meeting, San Diego, USA, March 5-9, 2002

RelyX™ Unicem Self-Adhesive Universal Resin Cement from 3M ESPE is quickly becoming the universal solution for dentists worldwide as studies prove its strength, reliability, versatility and ease of use. Scientific testing is confirming its many benefits, including marginal adaptation and sealing, shear bond strength, high adhesion value and high strength values.

Internal 3M ESPE Tests: Not Presented at IADR

Additional results from internal tests at 3M ESPE show low linear expansion and low levels of water uptake for RelyX Unicem cement.

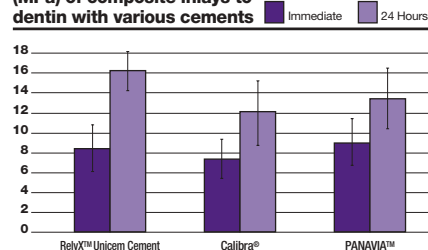
Effect of One-Day Storage on Bond Strength of Composite Inlays (Abstract 3365)

M. IRIE, K. SUZUKI,
B. WINDMÜLLER
(Okayama University Graduate
School, Okayama, Japan; 3M
ESPE AG, Seefeld, Germany)

Objective: The aim of the study was to evaluate the immediate and 24-hour shear bond strength of composite inlays (Filtek™ Z250 Universal Restorative from 3M ESPE) to dentin using different cements.

Results: RelyX Unicem cement provided for high bond strengths of the composite inlays to dentin using no pretreatment steps. The results for RelyX Unicem cement were comparable to and higher than the other resin cements tested.

Data: Shear Bond Strength (MPa) of composite inlays to dentin with various cements



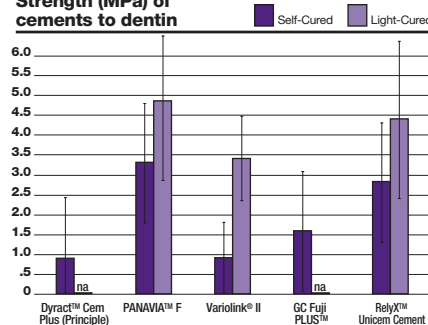
Tensile Bond Strength of First Self-Adhesive Resin-Based Dental Materials (Abstract 398)

R. HECHT, M. LUDSTECK
and G. RAIA (3M ESPE AG,
Seefeld, Germany)

Objective: The study was designed to evaluate the tensile bond strengths of various cement systems to bovine dentin in their recommended modes of curing.

Results: RelyX Unicem cement showed high adhesion values to dentin using no pretreatment steps. The results were comparable to and higher than other cement systems.

Data: Tensile Bond Strength (MPa) of cements to dentin



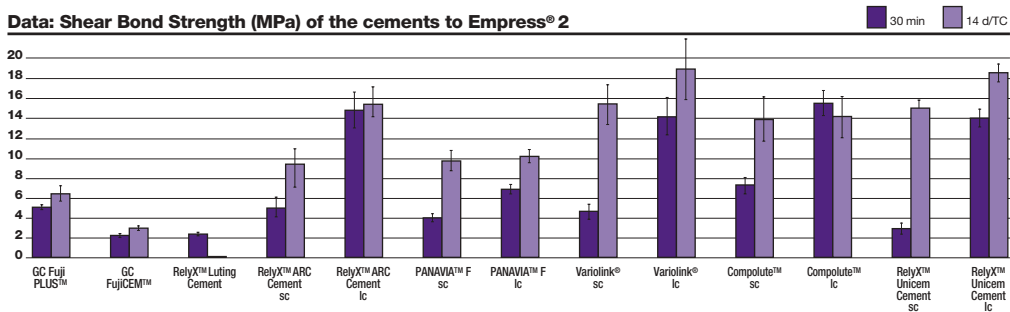
Shear Bond Strength of Cements to Zirconia and Lithium Disilicate Ceramics (Abstract 3241)

A. PIWOWARCZYK, H.X. BERGE, H.-CH. LAUER, J.A. SORENSEN (Johann Wolfgang Goethe University, D-60590 Frankfurt, Germany; OH & SU, Portland, OR, USA)

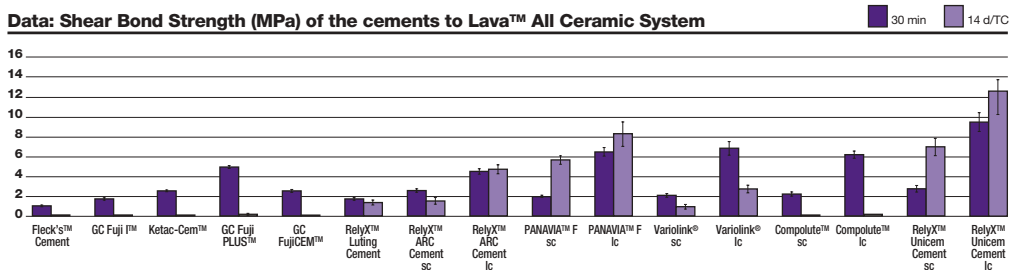
Objective: The study was designed to evaluate the shear bond strength of various cements (in their recommended mode of curing) to a lithium disilicate ceramic (Empress® 2, Ivoclar Vivadent) and to a new all-zirconia ceramic (Lava™ All Ceramic System from 3M ESPE). Samples were tested at 30 minutes and after 14 days followed by thermocycling.

Results: RelyX™ Unicem Self-Adhesive Universal Resin Cement from 3M ESPE showed high bond strengths to both ceramic substrates. Results were comparable to or higher than other cement systems.

Data: Shear Bond Strength (MPa) of the cements to Empress® 2



Data: Shear Bond Strength (MPa) of the cements to Lava™ All Ceramic System



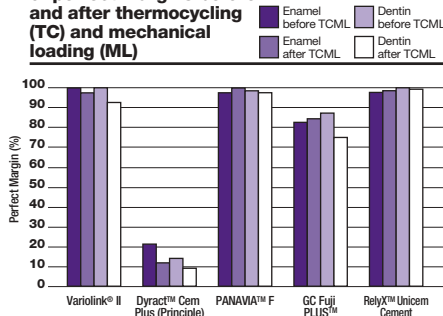
Marginal Adaptation of Ceramic Inlays Using Different Types of Cements (Abstract 53)

M. ROSENTRIT, M. BEHR, R. LANG, G. HANDEL (Department of Prosthetic Dentistry, University of Regensburg, Germany)

Objective: The study was designed to evaluate the marginal adaptation of ceramic inlays to enamel and dentin using different cements. The restorations were stressed by both thermocycling and repeated mechanical loading (simulated mastication).

Results: RelyX Unicem cement showed good marginal adaptation compared to other commercially available resin cements and was superior to the compomer and resin-modified glass ionomer cements.

Data: Results show the % of perfect margins before and after thermocycling (TC) and mechanical loading (ML)



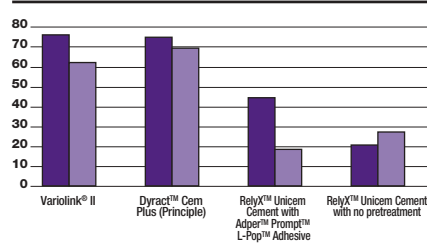
Marginal Adaptation of All-Ceramic Crowns Using Different Luting Cements (Abstract 3412)

M. BEHR, M. ROSENTRITT,
R. LANG, T. REGNET, G. HANDEL
(Department of Prosthetic
Dentistry, University of
Regensburg, Germany)

Objective: The study was designed to evaluate the marginal sealing of all-ceramic crowns to human dentin using various cement systems. The bonded crowns were thermocycled and mechanically stressed (simulated mastication). Microleakage was measured at the cement/tooth and cement/crown interfaces.

Results: RelyX™ Unicem Self-Adhesive Universal Resin Cement from 3M ESPE showed very good marginal sealing and adaptation at both the cement/tooth and cement/crown interface and was superior to the other cement systems tested.

Data: Results show the % penetration of dye (microleakage) after thermocycling and mechanical loading



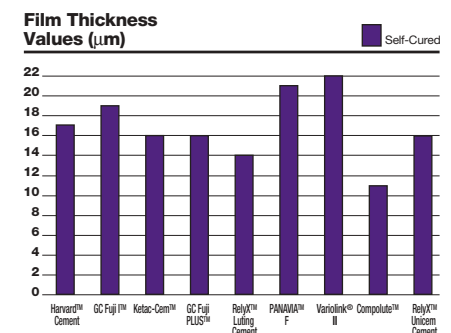
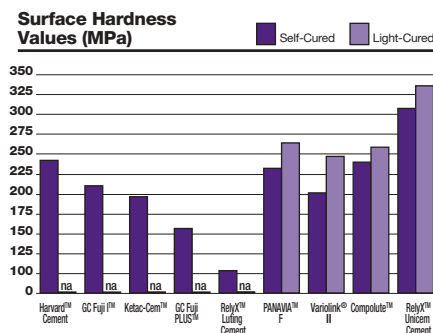
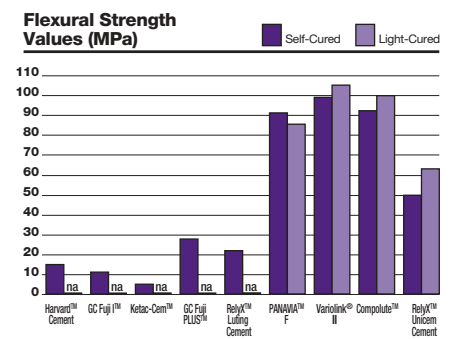
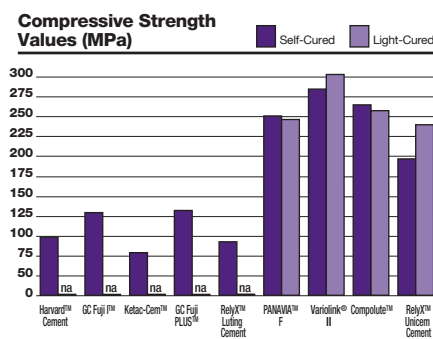
In-Vitro Study of the Mechanical Properties of Luting Cements (Abstract 3342)

A. PIWOWARCZYK,
B. WINDMUELLER, A. MAHLER,
H.-CH. LAUER (Department of
Prosthetic Dentistry, Johann
Wolfgang Goethe University,
D-60590 Frankfurt, Germany;
3M ESPE AG, Seefeld, Germany)

Objective: The study was designed to evaluate the compressive and flexural strengths, surface hardness and film thickness of different cement systems in their recommended modes of curing.

Results: RelyX Unicem cement achieved high strength values. Results show the strength values comparing resin and non-resin cement systems.

Data: Mechanical property test results for various cements



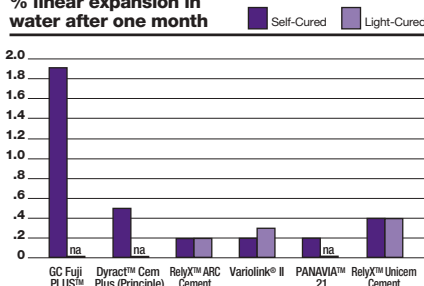
Linear Expansion Study

Results from internal 3M ESPE tests not presented at IADR

Objective: The purpose of the study was to determine the amount of linear expansion of cements stored in water after one month. This is important information to have to feel comfortable with using the cements under all-ceramic restorations.

Results: RelyX™ Unicem Self-Adhesive Universal Resin Cement from 3M ESPE shows low linear expansion after being stored in water. The expansion is considerably lower than resin-modified glass ionomer cements and is comparable to other resin cements. RelyX Unicem cement will work well under all-ceramic restorations without risk of fracture from expansion.

Data: Results show the % linear expansion in water after one month



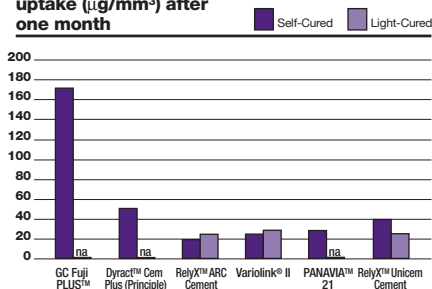
Water Uptake Study

Results from internal 3M ESPE tests not presented at IADR

Objective: The purpose of the study was to determine the amount of water that will be absorbed into cured cement samples after one month. There is a direct correlation to the amount of water the cement absorbs to the amount of expansion or swelling of the cement.

Results: RelyX Unicem cement shows very low levels of water uptake after being stored in water for one month. The uptake is considerably less than resin-modified glass ionomer and compomer cement systems and is comparable to other resin cement systems.

Data: Results show the amount of water uptake ($\mu\text{g}/\text{mm}^3$) after one month



A Complete Family of Solutions

*Easy to choose,
easy to use.*

3M ESPE offers a complete line of RelyX™ Cements for all your cementation needs.

- RelyX™ Veneer Cement
- RelyX™ Temporary Cements
- RelyX™ Luting Cement
- RelyX™ ARC Adhesive Resin Cement
- RelyX™ Unicem Self-Adhesive Universal Resin Cement

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70-2009-3530-5