

**NEW**

**Signum  
universal bond**

For PEEK,  
Zirconium & Metal



**NEW: Signum universal bond**

Your universal bonding system.  
For dental framework materials.

- » For crowns, bridges and partial frameworks
- » Secure and reliable bonding strength
- » For frameworks made of metal alloys, zirconium dioxide and PEEK high performance polymers

Giving a hand to oral health.



**KULZER**  
MITSUI CHEMICALS GROUP

# Signum® universal bond – always keeps its bond.

Universal. Reliable. Efficient.

Signum universal bond is a new, multi-material bonding system that ensures strong, reliable bonds for crowns, bridges and partial frameworks. The proven high-strength bonding agent, ensures long-lasting bonds for metal alloys, zirconium dioxide and PEEK high performance polymers. Signum universal bond can free up your shelves by replacing several of your current bonding solutions.

## What dental technicians are saying:



*“Thanks to Signum universal bond, I’m able to cover all relevant indications in my lab with only one bonding system. It supports the Signum system’s wide range of application possibilities and, thanks to its simple and reliable processing, increases the economy and efficiency of my laboratory.”*

Björn Maier, MDT, Germany



*“I use materials in my lab that allow me to focus on creating perfect restorations. Products that deliver value, reliability and comfort. Signum universal bond was therefore an obvious choice. For me, it’s the number one among all other bonding systems. Finally, for all surfaces I can use one bond that’s effective and reliable, making it easier to work with, saving time and guaranteeing a secure bond.”*

Agata Jankowska, DT, Poland

## Easy application process – same process for all applications

### Framework preparation, conditioning, opaque



Sandblast the surface of the framework with Al<sub>2</sub>O<sub>3</sub>

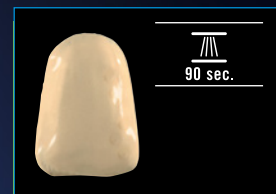
- **Zirconium dioxide** and **PEEK:**  
110–125 µm, 2 bar
- **Metal alloys:**  
110–125 µm, 3 bar



Then clean with clean tap water (no steam jet) and dry carefully with clean compressed air (oil-free). Apply 1x **Signum universal bond I** to the dry, dust- and grease-free surface with a disposable brush. Allow to air dry.



**Signum universal bond II** should then be applied and polymerised for 90 sec. with HiLite power 3D.



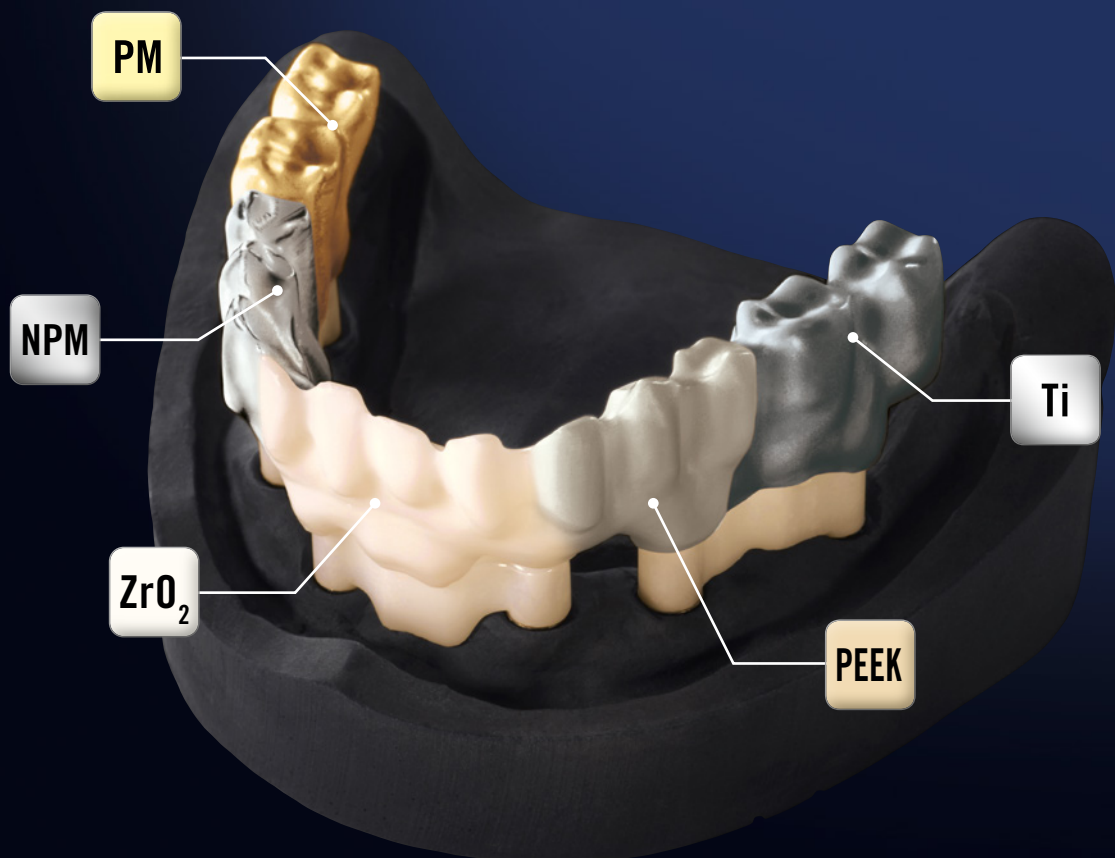
**Signum opaque F** then be applied and polymerised for 90 sec. with HiLite power 3D.

## Signum<sup>®</sup> universal bond

Kulzers first universal bonding agent for PEEK high performance polymers and other materials.

Benefits in brief:

- **One bonding agent system rather than many:**  
for PM, NPM, Ti, ZrO<sub>2</sub> & PEEK high-performance polymers
- **High process reliability:** use the same process for all these applications
- **Strong:** high shear bond strength and tensile bond strength
- **Proven:** effectiveness, durability and strength tested for all materials in multiple studies<sup>1,2,3</sup>



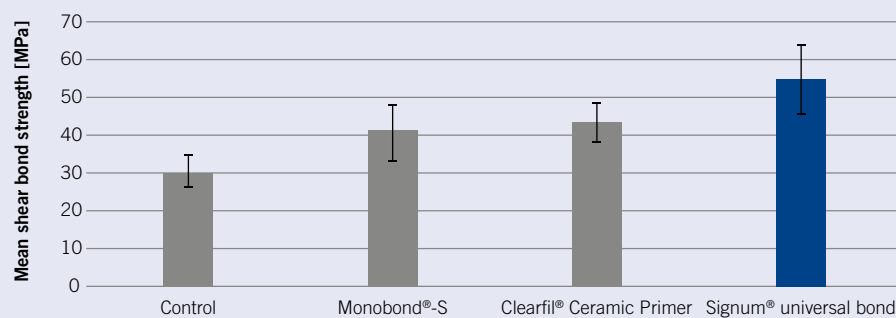
# Signum® universal bond

Proven performance on dental framework materials.

Proven bonding strenght by multiple university studies.

Case in point: Zirconium dioxide<sup>1</sup>:

Signum® universal bond shows the highest bond strength values to zirconia in comparison to other tested bonding agents

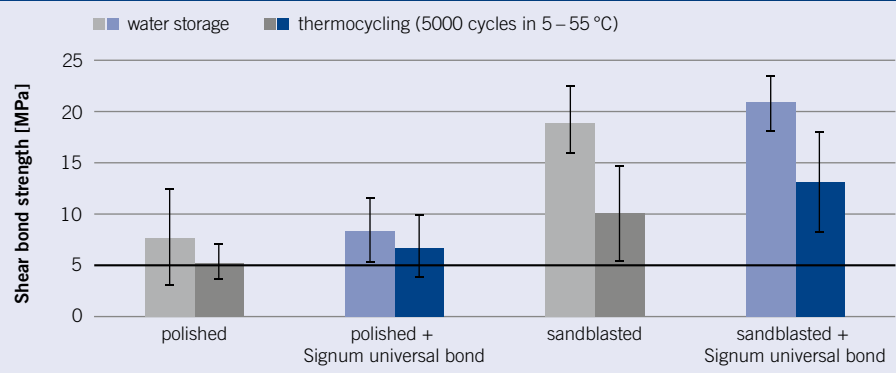


<sup>1</sup>Source: Ural C, Külünk S, Kurt M, Baba S: Determination of Resin Bond Strength to Zirconia Ceramic Surface Using Different Primers. Acta Odontol Scand. 2011 Jan; 69(1):48-53.

Usage of zirconia bonders for the adhesive cementation of zirconia has a positive effect on the shear bond strength between zirconia ceramic and resin cement. Signum® universal bond showed the highest bond strength values in the present investigation.

Case in point: PEEK high performance polymers<sup>2,3</sup>:

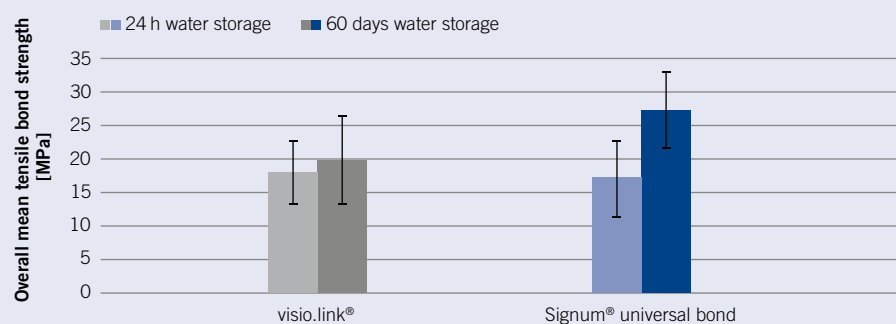
Signum universal bond increases shear bond strength to PEEK



<sup>2</sup>Source: With kind permission of Evonik Industries AG (Denseo GmbH) – University of Berlin, Charité. PEEK VfK Project 2017/18. Unpublished data. Data on file.

Comparison of overall mean shear bond strength values with standard deviation of Signum opaque F and composite to polished or sandblasted PEEK surfaces with and without Signum universal bond after water storage or thermocycling.

Signum® universal bond shows significantly higher tensile bond strength to PEEK than visio.link after long-term water storage



<sup>3</sup>Source: Stawarczyk B, Jordan P, Schmidlin PR, Roos M, Eichberger M, Gernet W, Keul C: PEEK surface treatment effects on tensile bond strength to veneering resins. J Prosthet Dent. 2014 Nov; 112(5):1278-88.

Comparison of overall mean tensile bond strength values with standard deviation of different veneering resins to unetched PEEK after using either Signum® universal bond or visio.link®

Signum® universal bond – always keeps its bond.

Universal. Reliable. Efficient.

A bond that's hard to break –  
like your love for coffee.

Discover the only bonding agent  
system you'll ever need.

Let's talk! #Bettertogether



PEEK high performance polymers



Precious Metal



Non-Precious Metal



Zirconium dioxide



Titanium

\*Cups are made of Signum composite and denture acrylic PalaXpress to show the combination possibilities to common framework materials (here: visualised as saucers) using Signum universal bond.

Learn more about Signum universal bond:



kulzer.com/  
signum-universal-bond



## Signum veneering system – Signum® is, when one thing perfectly fits another.

### For the love of perfection

Signum is a modular system of universal and special veneering composites, colouring kits, tools, bonding agents and devices for near-perfect restorations based on Kulzer research. Regardless of how you like to work, the Signum range will have a product to suit you.

#### HiLite® power 3D:

- High-performance light curing unit
- HiLite power 3D is our all-rounder light curing unit. Ideal for pre and final polymerising light-curing composites from the Signum, 3D print, Pala and many other product ranges

#### Indication Signum metal bond:

- Precious metal
- Non-Precious metal
- Titanium



Add on:  
opaque colored  
component II



#### Contact in Germany

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