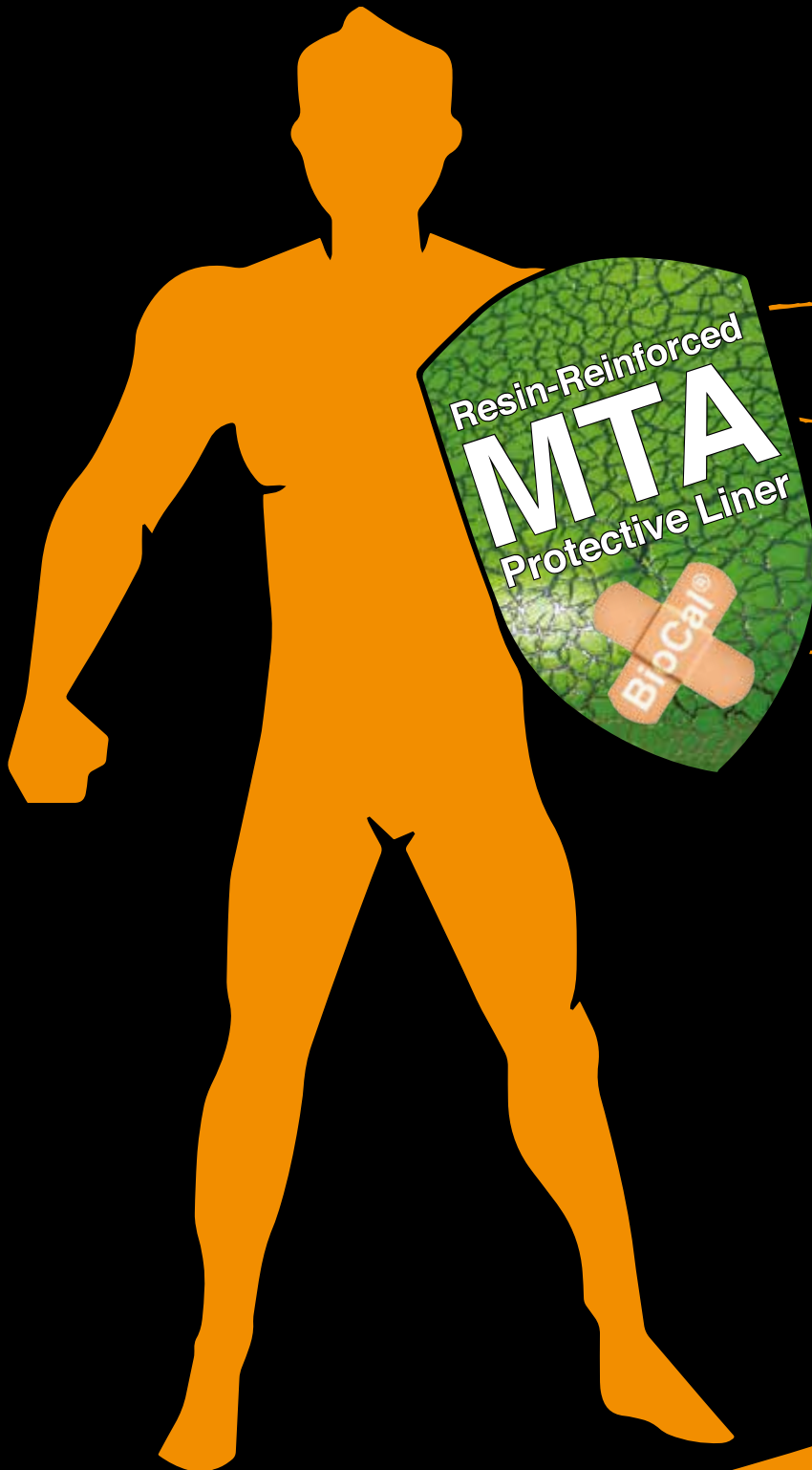




**HARVARD®**

# Harvard **BioCal® - Line**

Bioactive resin-reinforced **MTA** protective liner



→ Bioactive

→ pH protective shield

→ Mineralizing

→ Light cure



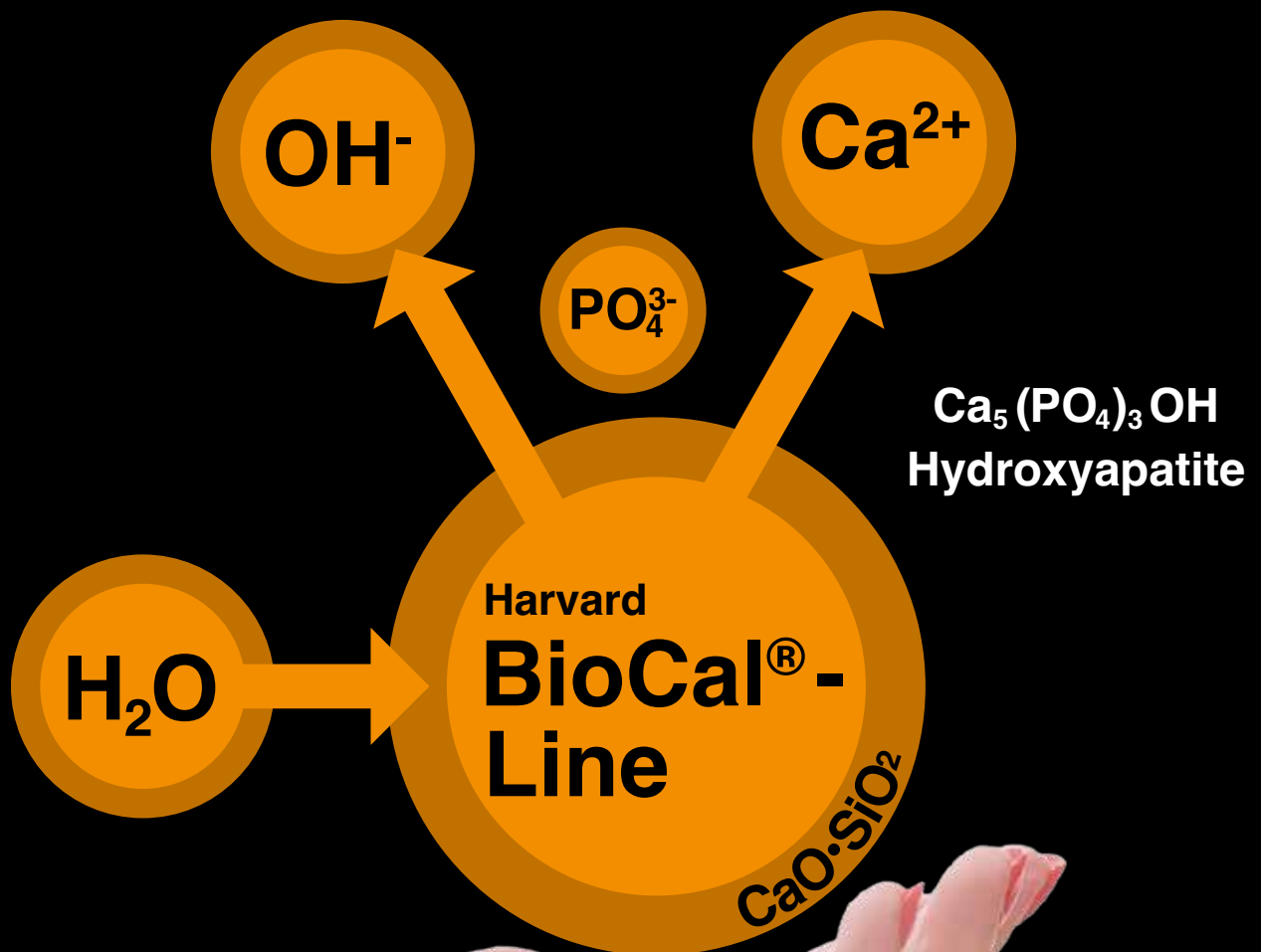
# Harvard BioCal<sup>®</sup> - Line

Harvard BioCal<sup>®</sup>-Line is a bioactive, light cure, resin-reinforced MTA protective liner. The good strength and the protective effect of the MTA components (high alkalinity and mineralization) ensure pulp protection with sufficient stability for subsequent filling at the same time.

Harvard BioCal<sup>®</sup>-Line is moisture-tolerant, insoluble and exhibits high radiopacity. Harvard BioCal<sup>®</sup>-Line can be applied very precisely, even in deep cavities. Light cure ensures a controlled curing.

The release of calcium and hydroxyl ions promotes mineralisation.

A safe and gap-free pulp protection. The high alkaline pH has an antibacterial effect and thus supports healing and protects against hypersensitivity.





“ Maximum  
pulp protection with  
light-curing bioactive  
MTA liner in deep  
caries lesions. ”

- 1.: Premolar after initial preparation
- 2.: Full caries excavation
- 3.: Cavity lining with  
**Harvard BioCal®-Line** after  
application of adhesive system
- 4.: Composite restoration with  
**Harvard UltraFill**



MSc. Andreas Kluschke  
Hamburg Smile, Hamburg

#### Benefits:

- Easy and fast application
- Gap-free and mineralizing
- Environment hostile to bacteria (pH 11)
- Mechanically stable

- Short setting time due to light cure
- Compatible with all composite restorative materials
- Radiopaque (225 % Al)

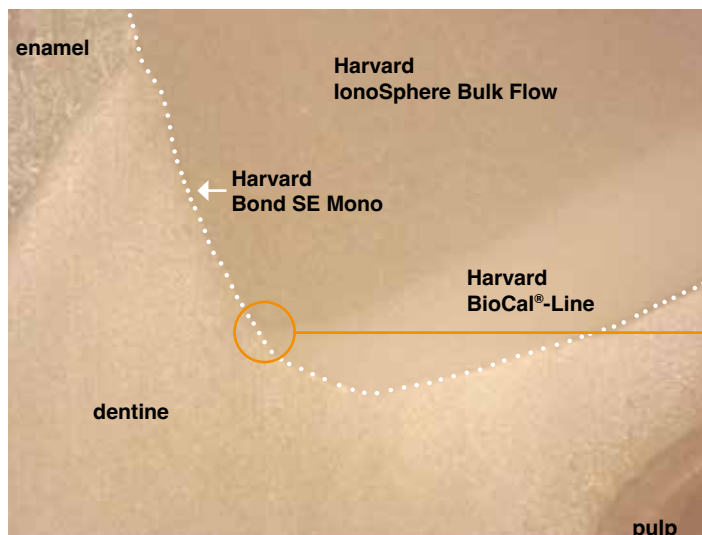
#### Indications:

- Perfect as a thin-layer protective liner in deeper cavities
- Also suitable for indirect and direct pulp capping

## Harvard BioCal® - Line

Harvard BioCal®-Line should be used with a dentine adhesive, ideally with Harvard Bond SE Mono. Harvard Bond SE Mono does not restrict the bioactive effect. A continuous gap-free marginal seal and high alkaline bioactive MTA components protect pulp and dentine equally, especially in deep restorations.

High strength values and minimal layer thickness ( $\leq 1$  mm) form the foundation for safe and reliable restorative therapy.



#### Laser microscopic image (magnification: 5x / 0.13)

Deep composite restoration close to the pulp  
Experimental Tooth Preparation (cross section) after one-week storage  
in artificial saliva (37 °C / 98,6 °F / thermocycling)



#### Image detail (magnification: 50x / 0.95)

Interface: Dentine / Harvard IonoSphere Bulk Flow &  
Dentine / Harvard BioCal- Line  
In between: Harvard Bond SE Mono

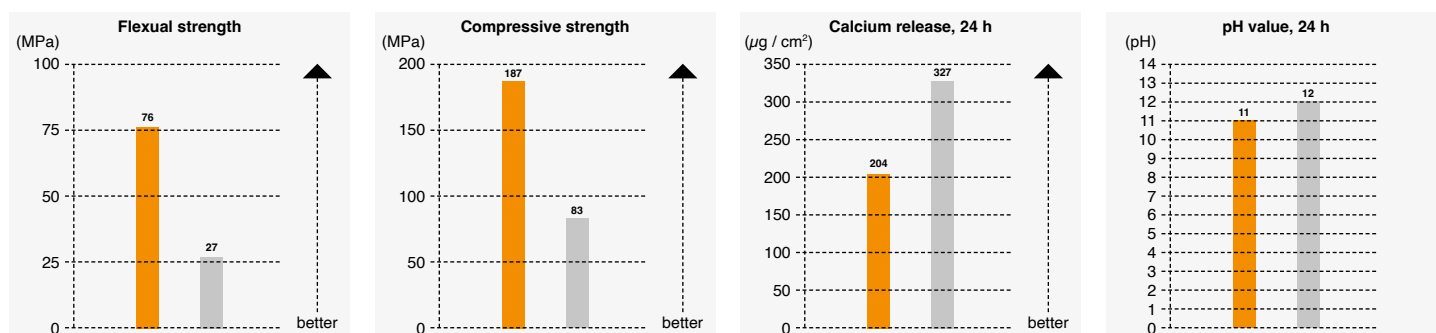


# HARVARD®



## Technical data:

Solid physical values underline the application of **Harvard BioCal®-Line**.



■ Harvard BioCal®-Line  
■ Bisco TheraCal LC

	Harvard BioCal®-Line	Bisco TheraCal LC
Flexural strength	76 MPa	27 MPa
Compressive strength	187 MPa	83 MPa
Calcium release (24 h)	204 $\mu\text{g} / \text{cm}^2$	327 $\mu\text{g} / \text{cm}^2$
pH value (24 h)	11	12

## Order information:

Harvard BioCal® - Line	
1 g syringe, 12 needle tips	7081554

Harvard NeedleTips H20	7091226
refill bag with 50 needle tips	

Harvard Distribution Partner.



## HARVARD®

Marke und Qualität seit 1892

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