

# Lucent<sup>®</sup> Ti-Bond<sup>®</sup>

## Lumbar Interbody Systems



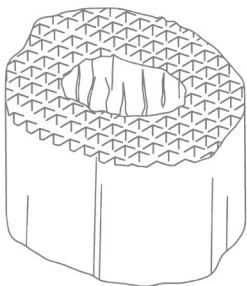
The New Standard  
in Interbody Fusion.



## A Brief History of the Interbody Implant

### 1950 - 1990

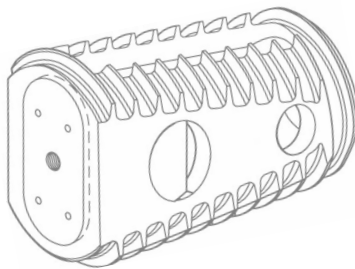
Allograft and autograft spacers provide a stable, osteoconductive scaffold for early lumbar interbody procedures, but concerns about supply, disease transmission, second site pain, and subsidence lead to the advancement of titanium spacer technology.



Femoral Ring Allograft

### 1990 - 2000

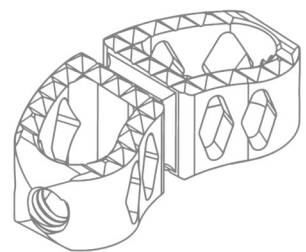
Titanium cages take over the market, but fall out of favor due to a high incidence of subsidence, nerve injuries, and unfavorable imaging characteristics.



Titanium Cage

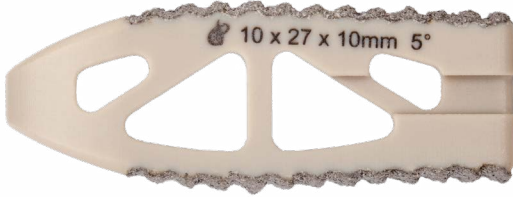
### 2000 - 2012

PEEK cages become the new standard of care due to their favorable imaging characteristics, lack of supply constraints, and modulus of elasticity that closely resembles natural bone. However, PEEK is an inert substance that does not participate in or enhance the fusion process.



PEEK Cage

# Ti-Bond® and Lucent® | An Attractive Combination



Spinal Elements' Ti-Bond titanium porous coating is combined with the outstanding clinical history of our Lucent PEEK interbody implants.

## Today

Porous titanium coated PEEK cages - Ti-Bond

The radiolucency, elastic modulus, and strength of PEEK join the benefits of microtextured titanium.



- **Excellent Radiolucency**

The radiolucency of Lucent Ti-Bond implants is maintained by the fact that the body of the implant is made from PEEK, a radiolucent material.

- **Immediate Stability and Long-Term Fixation**

The plasma-sprayed coating results in increased surface topography.

- **Proven Clinical History**

Spinal Elements' Lucent PEEK devices have been marketed since 2004. Coated orthopedic implants have been marketed since 1977.<sup>1</sup> Lucent Ti-Bond is the culmination of these two technologies.

# Lucent® Ti-Bond® | Lumbar Interbody Systems

## The Science Behind the Bio-Technology

### Hydrophilic

Ti-Bond's structure provides for its hydrophilic (fluid absorbing) properties. PEEK is naturally hydrophobic (repelling fluid).

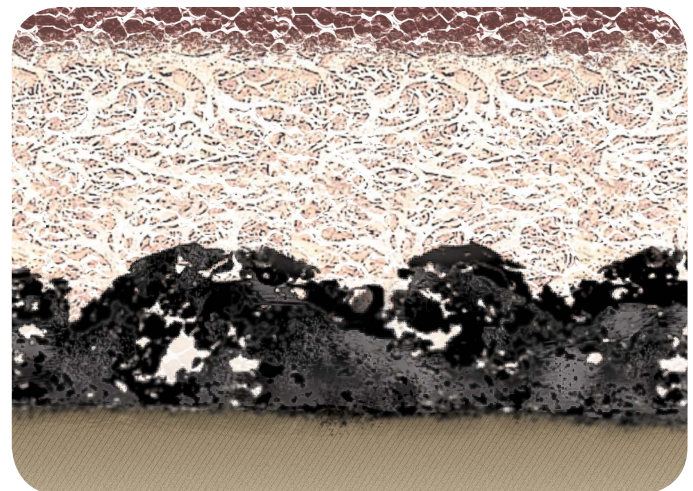


#### Hydrophilic:

To view a demonstration of Ti-Bond's hydrophilic properties, visit [spinelements.com/ti-bond](https://spinelements.com/ti-bond) or scan the QR code.

### Microstructure

The microtextured titanium surface consists of random unconnected pores. The pores in the Ti-Bond coating range in size between 200 and 500 microns.



#### Microstructure:

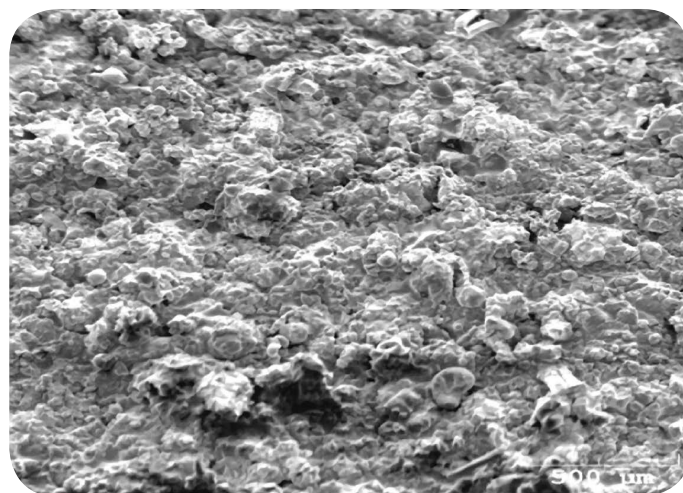
The porous titanium creates a microstructure that increases surface area of bony contact.



# Ti-Bond® | Titanium Porous Coating

## Proven Clinical History

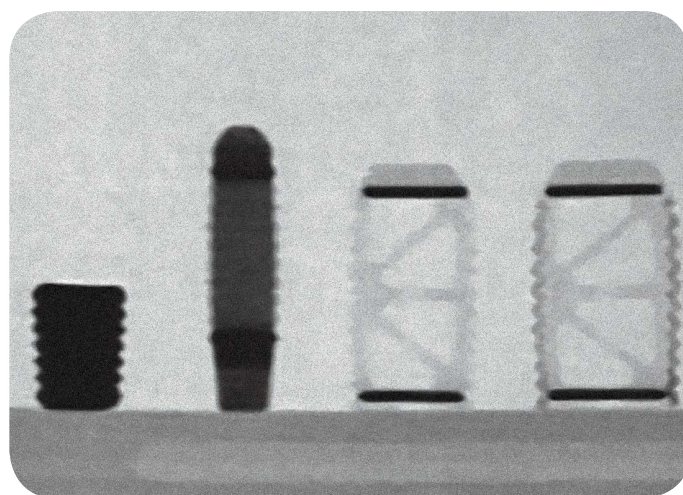
Porous plasma-sprayed titanium coatings have over 30 years of clinical use in orthopedics. In addition, Lucent interbody implants have been used successfully for more than 8 years.



Ti-Bond Titanium Porous Coating:  
Random, unconnected pores.

## All the Benefits of PEEK

Unlike with all-metal or silicon nitride implants, fusion progress can be monitored radiographically with radiolucent Lucent Ti-Bond. The application of the porous coating preserves the mechanical properties of the PEEK, including the modulus of elasticity.<sup>2</sup>



Imaging:  
Radiolucency is maintained with Ti-Bond coating.  
Left to right: Zimmer Trabecular Metal™, Amedica® Silicon Nitride, Standard Lucent, Lucent Ti-Bond.

# Lucent® Ti-Bond® | Lumbar Interbody Systems

## Lucent Ti-Bond Family of Implants

Spinal Elements is the total package partner for your lumbar needs with the standard Lucent family of implants being one of the industry's first PEEK lumbar interbody cages. Anatomically designed for PLIF and TLIF procedures, all Lucent Ti-Bond implants are manufactured from radiolucent PEEK-OPTIMA® and available in a range of heights and shapes to accommodate varying patient anatomy.

- Large Bone Graft Windows
- Radiopaque Markers
- Convex Surfaces
- Lordotic Configurations
- Tapered Leading Edges

### Lucent Ti-Bond PLIF

With a range of sizes and the Spinal Elements heritage, the Lucent Ti-Bond PLIF cage provides versatile and reliable clinical solutions.



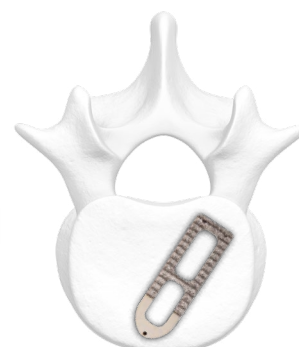
PLIF

### Lucent Ti-Bond TLIF

The Lucent Ti-Bond TLIF implant is now available in curved and straight versions. Offered in various heights, lengths and shapes, the Lucent Ti-Bond TLIF cage can be placed anteriorly or at an oblique angle.



Curved TLIF

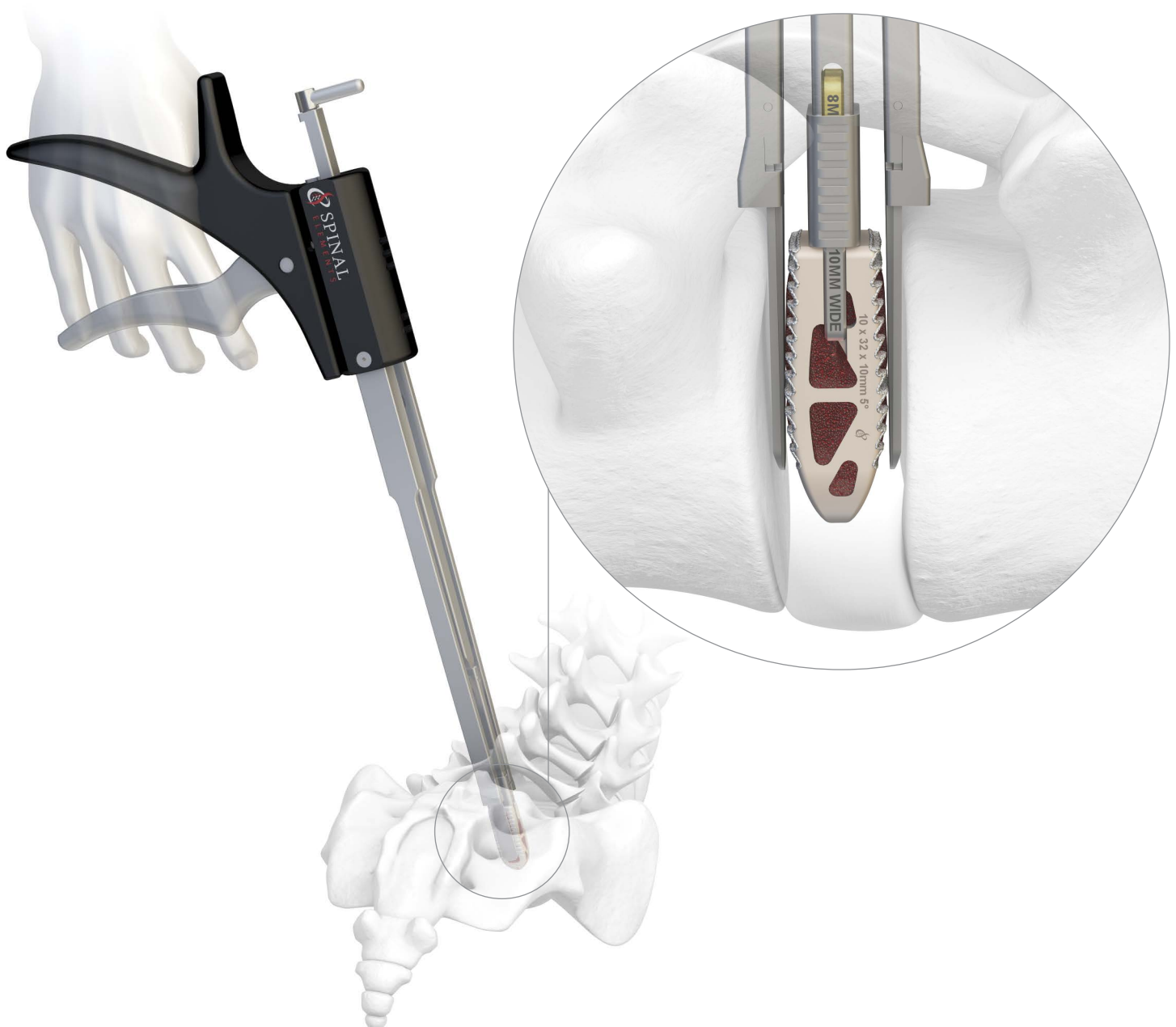


Straight TLIF

# Controlled Delivery System

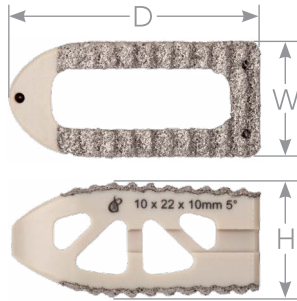
Lucent® Controlled Delivery Guns are designed to simultaneously distract adjacent vertebrae while inserting the interbody implant. The Lucent Guns deliver PLIF and TLIF implants to the disc space with maximum control over force and trajectory while providing true tactile feedback and shielded nerve root protection for the utmost surgical confidence.

- Control Force and Trajectory
- Reduce Need for Impaction
- Shield Exiting Nerve Roots
- Simultaneous Distraction

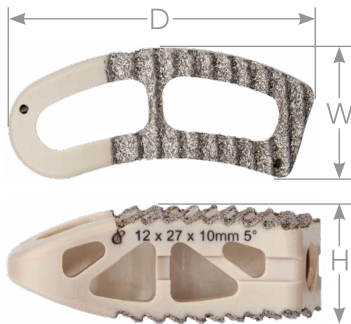


# Lucent<sup>®</sup> Ti-Bond<sup>®</sup>

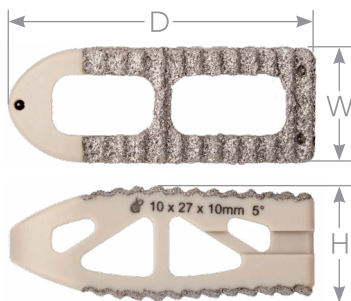
## Lumbar Interbody Systems



Lucent PLIF			
Width	Depth	Height	Lordosis
8	22	7-14*	5°
10	22	7-14*	5°



Lucent Curved TLIF			
Width	Depth	Height	Lordosis
12	27	7-14*	5°
12	37	7-14*	5°



Lucent Straight TLIF			
Width	Depth	Height	Lordosis
10	27	7-14*	5°
10	32	7-14*	5°

Dimensions expressed in mm  
\*1mm increments

### References

1. Hofmann AA. Response of human cancellous bone to identically structured commercially pure titanium and cobalt chromium alloy porous coated cylinders. Clin Mat. 1993;14:101-115.
2. Data on file at Spinal Elements, Inc.

