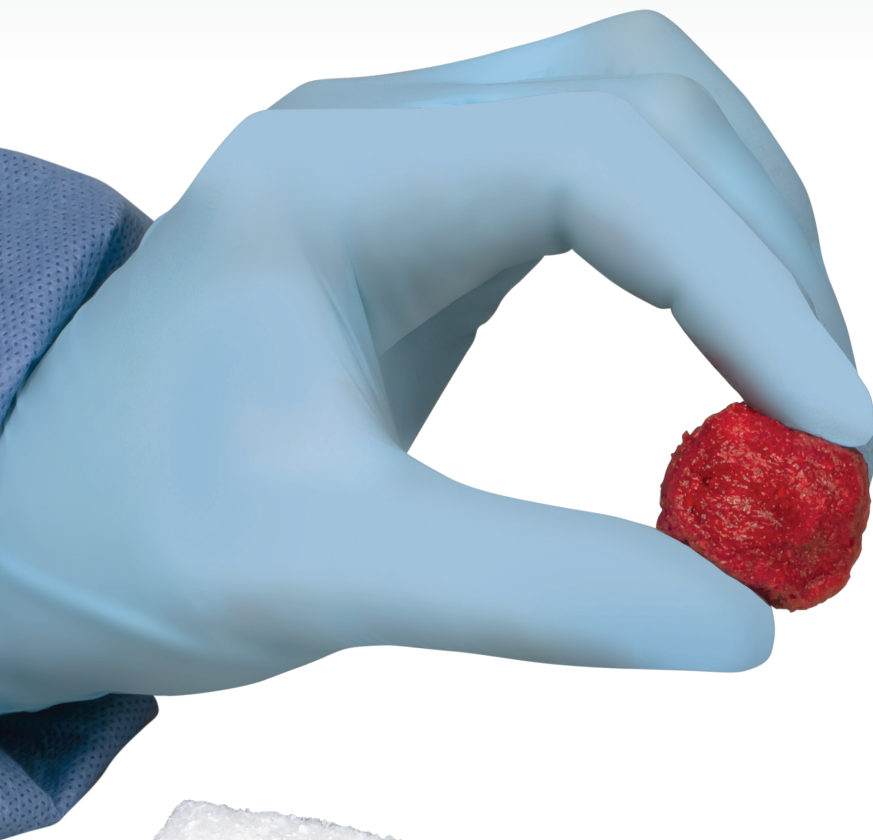




An outstanding trio of components
molded to fit bone defects



PlatFORM™ BG

Moldable Bone Graft Matrix





Evolution of our PlatFORM Products



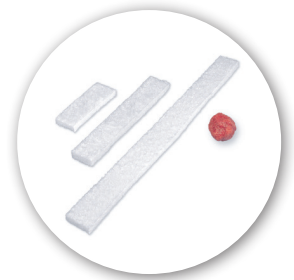
○ 2007
PlatFORM CM
Strips and Pads



○ 2008
PlatFORM CM
Putty



○ 2009
PlatFORM CM
Block



○ 2019
PlatFORM BG
Bioactive

PlatFORM BG Moldable

Our Bioactive Solutions

The evolution of our mineral and collagen composite bone grafts has advanced with the launch of our bioactive glass, mineral, and collagen composite bone graft solutions. We have a wide range of mineral and collagen composite bone grafts with a variety of adjustable characteristics, and we have expanded even further to offer bioactive moldable bone graft solutions.

Composition

The bioactive composite bone graft matrices are a combination of three components: carbonate apatite anorganic bovine bone mineral, 45S5 bioactive glass, and Type 1 collagen. When combined, they provide an optimal scaffold to support the body's natural ability to regenerate new bone.



30%
45S5 Bioactive Glass

+



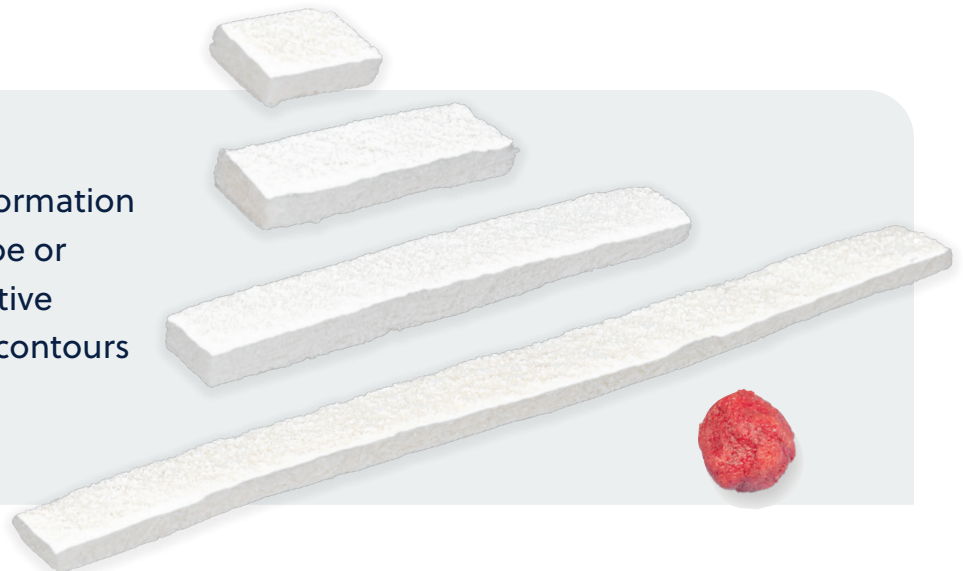
50%
Carbonate Apatite
Anorganic Bone Mineral

+



20%
Highly Purified Bovine-Derived
Type 1 Collagen

Upon hydration, the strip conformation can be used in its original shape or optionally molded into alternative shapes to address the unique contours of each defect.





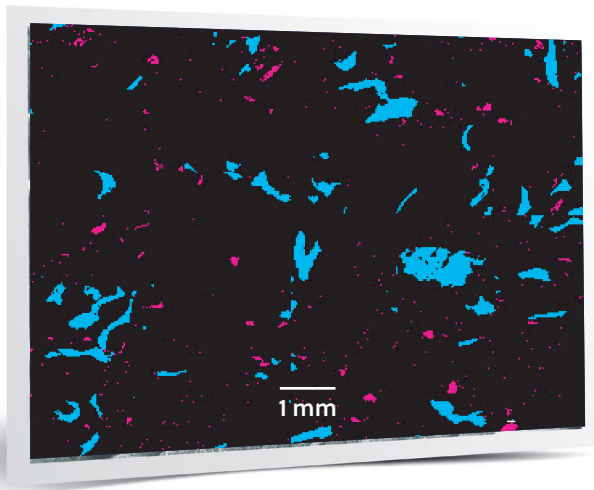
PlatFORM BG

Moldable Bone Graft Matrix




PlatFORM BG Moldable Bone Graft Matrix is composed of carbonate apatite anorganic bone mineral, bioactive glass, and Type 1 collagen that can be molded to fit the bone defect. It is an osteoconductive, bioactive, porous implant that allows for bony ingrowth across the graft site. The bone graft matrix is slowly resorbed and replaced by new bone tissue during the natural healing process.

Why PlatFORM BG Moldable?

- An outstanding trio of components: 50% carbonate apatite anorganic bone mineral, 30% 45S5 bioactive glass, 20% Type 1 collagen
- Uniform distribution of bioactive glass and mineral particles throughout the matrix, achieved through our proprietary manufacturing process¹



An SEM/EDX Analysis of PlatFORM BG Moldable polished cross sections showing mineral and bioactive glass

-  45S5 Bioactive Glass Particles
-  Carbonate Apatite Anorganic Bone Mineral
-  Porous Type 1 Collagen Matrix

PlatFORM BG Glass Component

- **30% is optimal:** Less is more. Bioactive glass is incorporated into PlatFORM BG within a suggested critical range of 5-40% for optimal osteoblast growth and calcium phosphate formation in a composite²
- Ideal particle range: A narrow particle size distribution limited to 100-300 μm to provide a more controlled rate of ion dissolution and surface reactivity, and a more consistent rate of bone bonding and proliferation^{3,4}
- Exemplary particle size (100-300 μm): Larger sized particles may not fully resorb. Smaller particles may resorb away quickly and impede the upregulation of osteoprogenitor cells^{4,5}

Moldable Advantage

- **2 for 1 versatility:** Upon hydration, the strip conformation can be used in its original shape or optionally molded into alternative shapes to address the unique contours of each defect
- Combined with either autogenous bone marrow or autograft with saline
- Can also be used with autograft as a bone graft extender
- Puck conformation option is ideal for molding
- Moldable, flexible, absorbent, resists migration upon irrigation
- A lengthy 40 cc size option unlike any other bioactive moldable bone graft

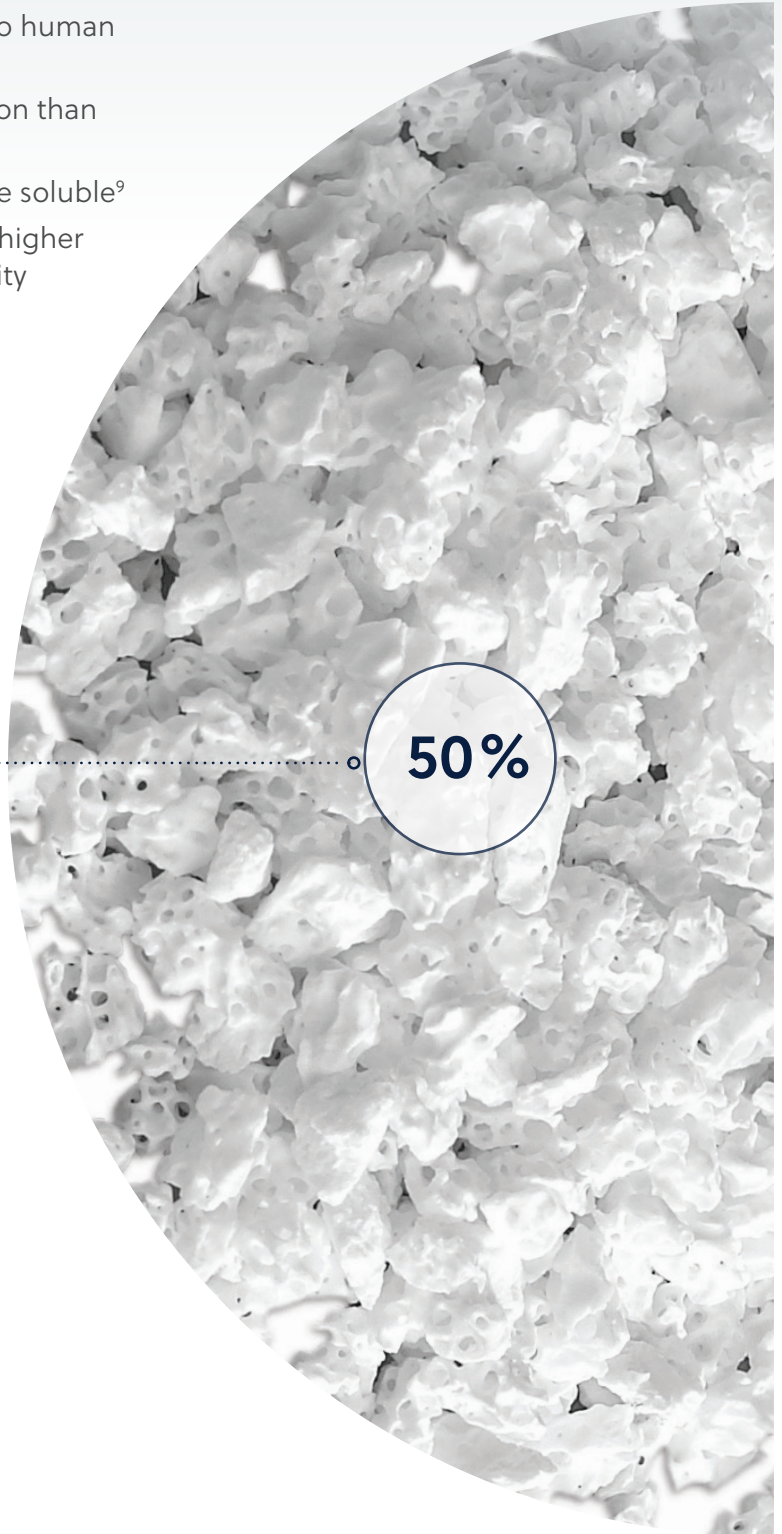


- Almost **2x more absorbent** than Vitoss® Bioactive Foam¹
 - Delivers stem cell rich BMA to fusion site

	ABSORBENCY (ml/g)
PlatFORM BG Moldable	4.59 ± 0.76
Vitoss Bioactive Foam	2.70 ± 0.35

Why Carbonate Apatite Bone Mineral?

- Optimal resorption and remodeling^{6,7}
- Natural mineral structure similar to human bone mineral
- More calcium phosphate deposition than β -TCP⁸
- Half the crystallinity than HA, more soluble⁹
- Independent studies have shown higher osteoclastic and osteoblastic activity than β -TCP and HA¹⁰



50%

Why 45S5 Bioactive Glass?

Over 30 Years of Presence in Tissue Engineering^{11,12}

- Favorable environment for bone regeneration and osteoblast attachment¹³
- Ion exchange and release—including soluble tetrahedral silica, which may promote rapid bone formation²
- Cell proliferation and differentiation—45S5 bioactive glass has the ability to stimulate the growth and osteogenic differentiation of human primary osteoblasts¹⁴

Composition of 45S5 Bioactive Glass

45%	Silicon Dioxide	SiO ₂
24.5%	Calcium Oxide	Ca ₂ O
24.5%	Sodium Oxide	Na ₂ O
6%	Phosphorus Pentoxide	P ₂ O ₅



30%



20%

Why Type 1 Collagen?

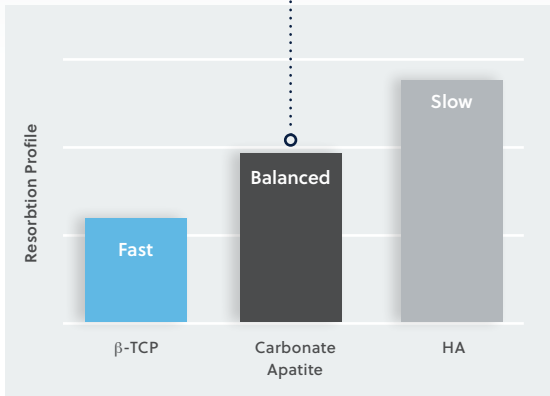
Homologous Molecular Structure to Human Collagen¹⁵

- Highly purified for biocompatibility
- 100% resorbable through normal metabolic pathways¹⁶
- Intrinsic hemostatic properties control minor bleeding^{16,17}
- Well-established long clinical history¹⁶
- Binds proteins and cells and retains biological factors¹⁸
- Single most abundant protein in the human body¹⁹



Five Reasons Why Carbonate Apatite is Superior to HA and β -TCP

Optimal Resorption and Remodeling



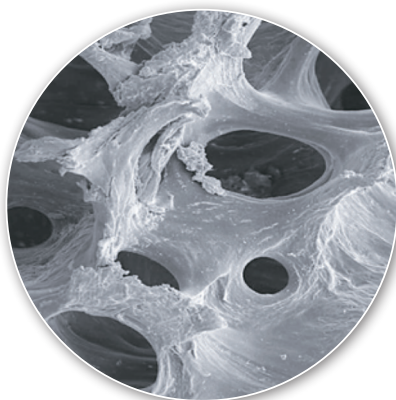
1 Optimal Resorption and Remodeling^{6,7}

- Not fast like beta-tricalcium phosphate (β -TCP)
- Not slow like hydroxyapatite (HA)
- Ideally, the rate of the bone graft resorption is balanced to the rate of bone remodeling
- Carbonate apatite resorption and remodeling are similar to human bone^{6,7}

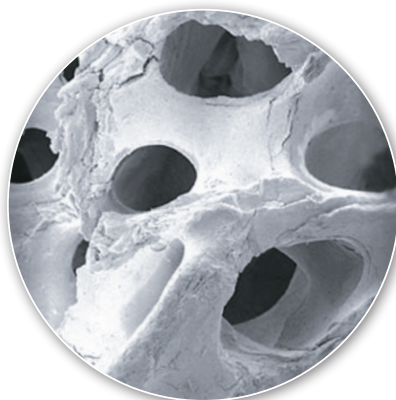
2 Natural Mineral Structure Similar to Human Bone Mineral

- Pores provide pathways for cell migration and attachment to lay down new bone
- Carbonate apatite is a better osteoconductive material than HA²⁰

SIMILAR SIZED MACRO AND MICRO PORES FOR CELL MIGRATION



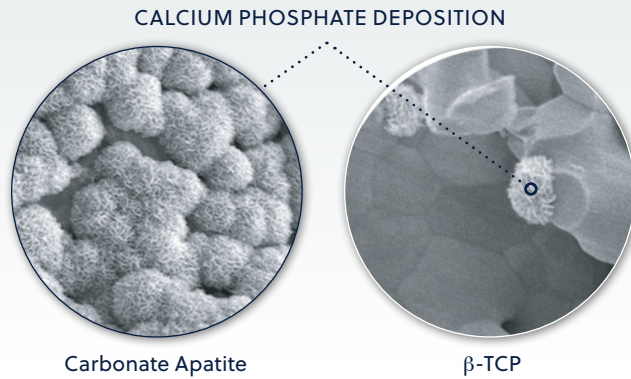
Human Bone



Carbonate Apatite

3 More Calcium Phosphate Deposition than β -TCP⁸

- More calcium phosphate is deposited on the carbonate apatite surface as compared to β -TCP⁸
- Osteoblasts prefer attaching to calcium phosphate to lay down new bone

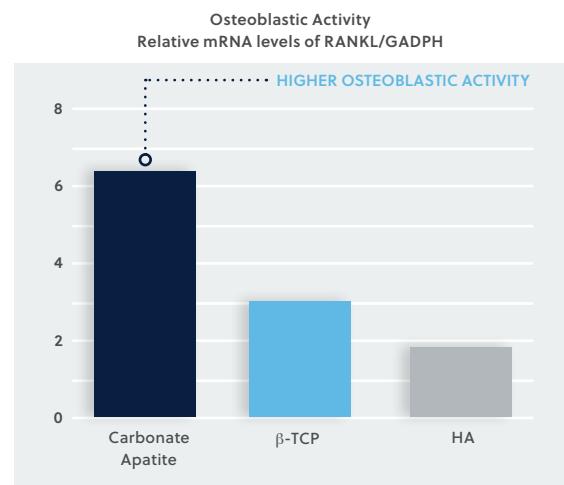
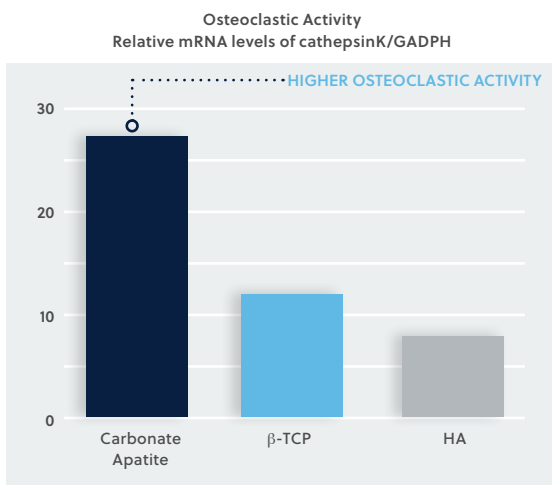


4 Half the Crystallinity than HA, More Soluble⁹

- Carbonate apatite has half the crystallinity than HA, which enables optimal resorption and remodeling because it more easily resorbs⁹

5 Independent Studies have shown Higher Osteoclastic and Osteoblastic Activity than β -TCP and HA¹⁰

- Osteoclasts break down bone
- Carbonate apatite shows higher levels of osteoclastic activity than β -TCP and HA¹⁰
- Osteoblasts secrete new bone
- Osteoblast proteins are most upregulated with carbonate apatite than β -TCP and HA¹⁰

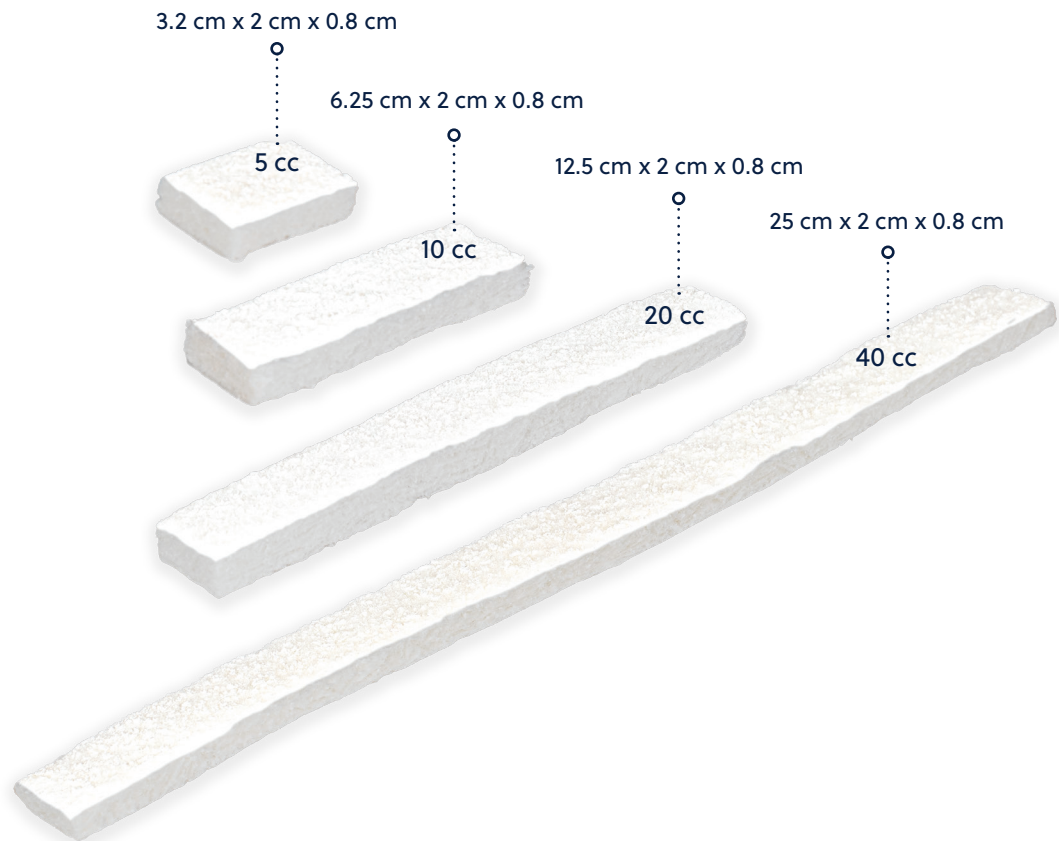




Ordering Information

PlatFORM BG Moldable Strips

Part Number	Dimensions			Quantity
	Length	Width	Thickness	
45-2115	3.2 cm	2 cm	0.8 cm	5 cc, 1 Strip
45-2125	6.25 cm	2 cm	0.8 cm	10 cc, 1 Strip
45-2515	12.5 cm	2 cm	0.8 cm	20 cc, 1 Strip
45-2525	25 cm	2 cm	0.8 cm	40 cc, 1 Strip



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