CERAMENT®
BONE VOID FILLER

PRODUCT BROCHURE

Rapid and Complete Bone Remodeling

BONESUPPORT™

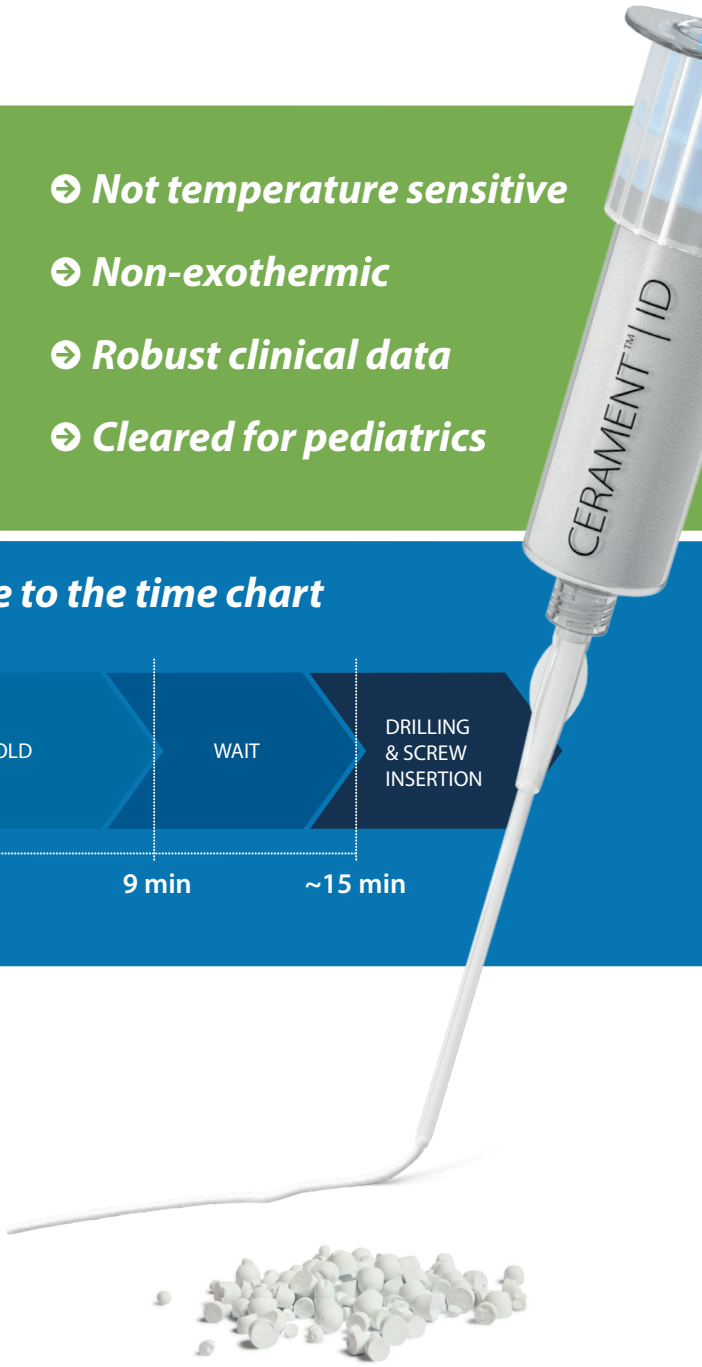
CERAMENT® BONE VOID FILLER

CERAMENT® is an injectable, moldable, drillable and radiopaque bone substitute which provides rapid and complete bone remodeling within 6-12 months[1].

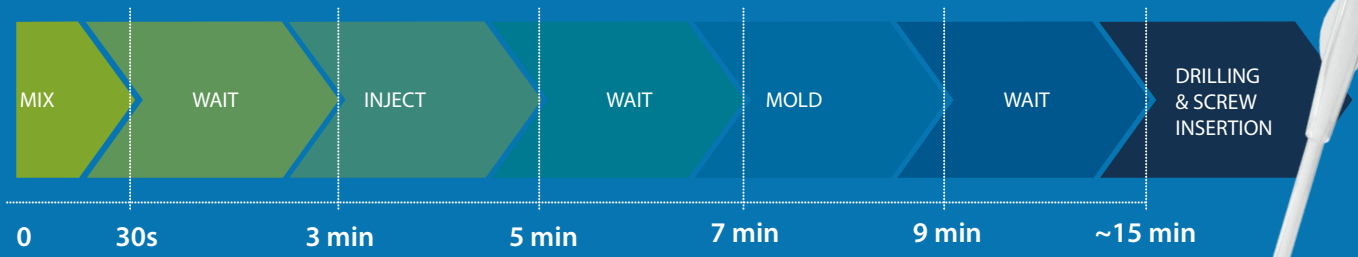
CERAMENT is supported by over 160 clinical publications, including a Level I randomized control trial against the gold standard autograft.

Unique features:

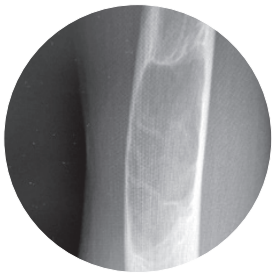
- ***Injectable, Moldable, Drillable***
- ***Rapid and complete bone remodeling[1]***
- ***Highly visible under fluoroscopy***
- ***30 second, enclosed sterile mix***
- ***Not temperature sensitive***
- ***Non-exothermic***
- ***Robust clinical data***
- ***Cleared for pediatrics***



Consistent mixing and handling that is true to the time chart

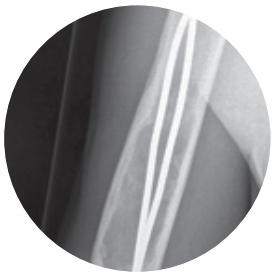


INDICATED FOR PEDIATRIC PATIENTS ≥ 9 YEARS OLD



Large humeral unicameral cyst in 16 yr. old boy.

Credit: Dr. Thomas Fingernagel



At 3 months, remodeling of **CERAMENT®** BONE VOID FILLER is visible and patient is clinically well.

REFERENCES

1. Hofmann et al. Autologous Iliac Bone Graft Compared with Biphasic Hydroxyapatite and Calcium Sulfate Cement for the Treatment of Bone Defects in Tibial Plateau Fractures. J Bone Joint Surg Am. 2020 Feb 5;102(3):179-193.

2. Nilsson M, et al. Expert Rev. Med. Devices 10(5), 675-684, 2013.

How **CERAMENT**® remodels bone

UNIQUE COMPOSITION
CERAMENT® is composed of 40% hydroxyapatite (HA) and 60% calcium sulfate (CaS), and a radiopacity enhancing agent for visibility under fluoroscopy.

IMPLANTED
High flowability enables injection through narrow needles and ensures an excellent spread in the trabecular system.

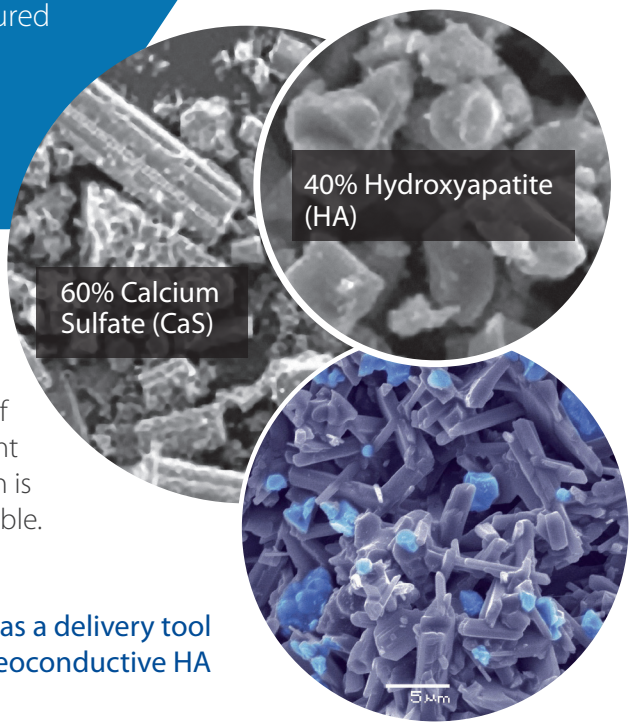
BIOACTIVE
A layer of native HA forms on the surface of CERAMENT® and retards the CaS resorption.[3] Contact with bone is enhanced because the bone cells recognize the apatite layer as natural bone mineral.[2]

OSTEOCONDUCTIVE
HA particles are delivered by the CaS and create a scaffold. After the CaS has resorbed, new bone will completely surround and embed the HA particles.[2]

BONE FORMATION
Early vascularization and invasion of osteoblasts enable multiple site formation of bone throughout the cured **CERAMENT**.[2]

Proprietary Composition

CERAMENT® consists of 40% hydroxyapatite (HA) and 60% calcium sulfate (CaS). The addition of a liquid radiopacity enhancing agent provides for an injectable paste which is radiographically visible.



The CaS works as a delivery tool for the osteoconductive HA

Case 4 : CERAMENT in Ortho-Oncology

Management of a Giant Cell Tumor

Pre-op radiographs and MRI suggested Giant Cell Tumor (GCT) of the left distal femur in a 49-year-old male.

Intralesional excision of the GCT was performed and the margin expansion was achieved with an Argon Beam Laser.

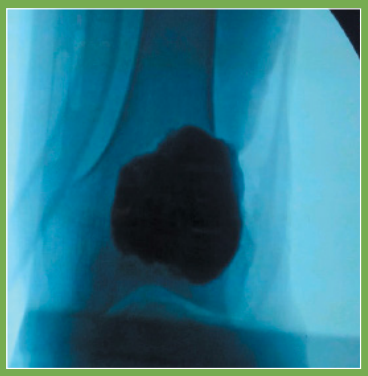
75cc of CERAMENT® BONE VOID FILLER was used to fill the debrided bone void and the distal femur was stabilized with a 4.5 lateral locking plate.

At 6 weeks post-op, evidence of CERAMENT degradation was observed at the periphery of the bone void and patient was full weight bearing.

Evidence of bone remodeling was seen at 10 weeks post-op, with degradation and resorption of CERAMENT in sync with generation of new bone.

At 1 year follow up, the void was completely filled with trabeculated bone.

Pre-op



Intra-op

2 weeks post-op

4 months post-op

7 months post-op

1 year post-op

Credit:

Judd E. Cummings, MD, FACS
Scottsdale, AZ, USA

Case 2 : CERAMENT in Recon & Revision

Complex Hip Revision and use of CERAMENT to Reconstruct Medial Bone Stock

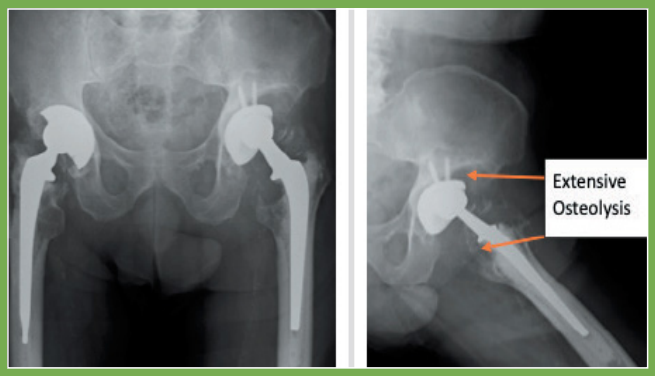
An 84-year-old male presented with a painful left total hip arthroplasty exhibiting eccentric poly wear with extensive osteolysis.

He underwent a complex revision with structural support and the use of CERAMENT® BONE VOID FILLER to reconstruct the medial bone stock.

The proximal femoral fracture was repaired with a trochanteric bolt and filled with CERAMENT.

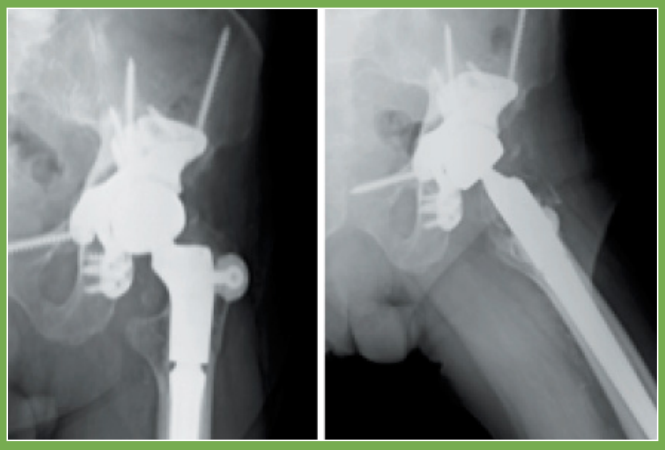
The acetabular void was also filled with CERAMENT.

At 9 months post-op, the patient is doing well, with no reports of pain. The fracture has healed and there is good bone formation where CERAMENT was injected.



Pre-op: Eccentric poly wear with extensive osteolysis.

Intra-op: Proximal femoral fracture and acetabular void filled with CERAMENT® BONE VOID FILLER.



9 Month Post-op: Fracture has healed and new bone formation is seen where CERAMENT was injected.

Credit:

Andrew J. Wassef, M.D.
Lakewood, CA, USA

Case 3 : CERAMENT in Foot and Ankle

Treatment of Calcaneus Stress Fracture

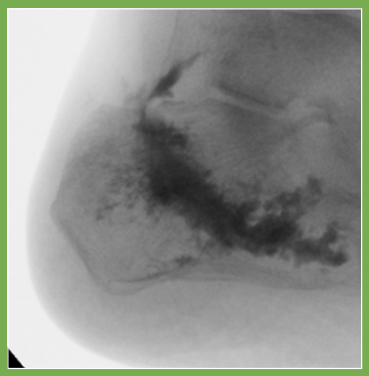
A 72-year-old female experiencing a calcaneus stress fracture six months after tarsometatarsal fusion. Conservative treatment was attempted but discomfort continued to worsen until patient could no longer walk due to the pain.

CERAMENT® BONE VOID FILLER was injected anterior to the Achilles tendon through the superior cortex of the body of the calcaneus.

Patient showed complete resolution of symptoms within a few days of surgery and experienced no severe postop pain. At 1 month post-op, patient began weight bearing as tolerated in a boot.

At 6-months pot-op, after fusion plate removal, there appears to be a restoration of the normal trabecular pattern of the calcaneus.

6 months post TMT fusion, patient unable to ambulate due to heel pain (atypical location).



Intra-op fluoro injecting CERAMENT anterior to the Achilles tendon through the superior cortex of the body of the calcaneus.

1 month post-op patient allowed weight bearing as tolerated in a boot.

6 months post-op (after plate removal) showing restoration of normal trabecular pattern.

Credit:

Melanie Sanders, MD
Moorseville, IN, USA

Proven Results

Case 1: CERAMENT in Trauma

Open Reduction and Internal Fixation of a Supracondylar Femur Fracture

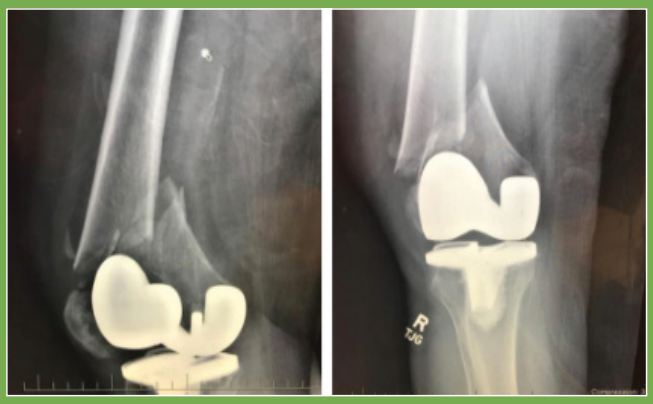
A 64 year old female suffered a right periprosthetic supracondylar femur fracture above a total knee arthroplasty.

She underwent open reduction and internal fixation using a Non-Contact Bridging (NCB) plate.

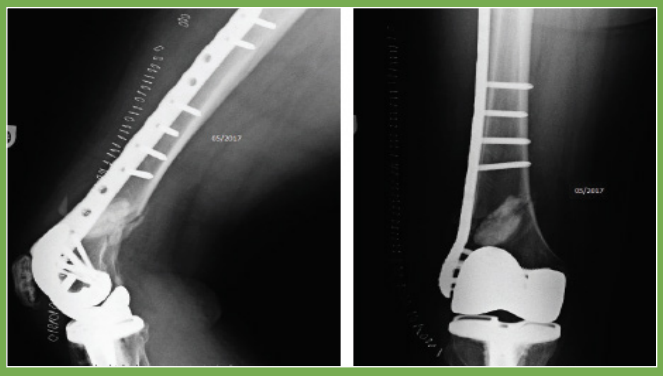
CERAMENT® BONE VOID FILLER was injected into the fracture gap.

In the months post-op the patient had good range of motion, was neurovascularly grossly intact, had no calf tenderness and was negative for Homan's. She continued to increase activities and was encouraged to exercise.

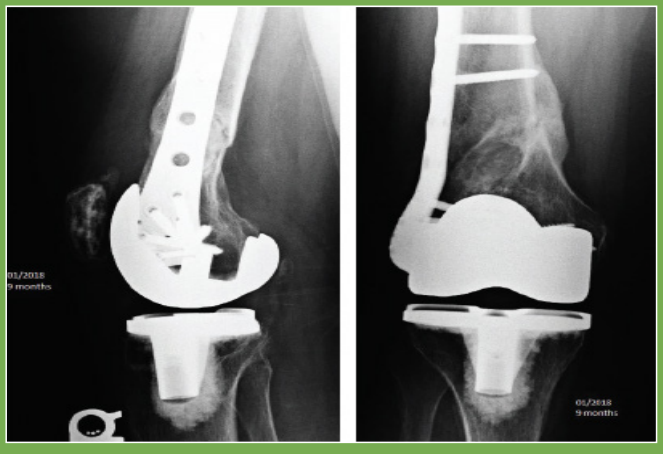
At 9 months, follow up shows that the fracture is healed with strong callus formation where CERAMENT was injected.



Pre op



Immediate Post-op: Good reduction, correct placement of the NCB plate and complete filling of the bone defect with CERAMENT® BONE VOID FILLER.



9 Month Follow Up: The void is now filled with new trabeculated bone.

Credit:

Dante A. Marra
Wheeling, WV, USA

THE **PROBLEM**

TRAUMA

Pre-operative femur fracture

BONE CYST

Pre-operative of giant cell tumor

RECON & REVISION

Pre-operative hip fracture showing extensive osteolysis

FOOT & ANKLE

Pre-operative calcaneus stress fracture

THE **SOLUTION**

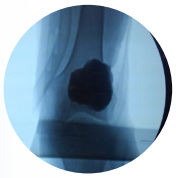
TRAUMA

Immediate post-operative showing placement of **CERAMENT®** BONE VOID FILLER

At 9 months fracture has healed and bone formation is seen where **CERAMENT®** was injected

BONE CYST

Intra-operative placement of **CERAMENT®**



RECON & REVISION

At 9 months, fracture is healed and bone remodeling is visible where **CERAMENT®** was injected

FOOT & ANKLE

At 6 months post-op, normal trabeculated bone is visible where **CERAMENT®** was injected

To order 1.877.719.6718

us.sales@bonesupport.com

PRODUCT DESCRIPTION	CODE
CERAMENT® BONE VOID FILLER 5 mL	A0210-09
CERAMENT® BONE VOID FILLER 10 mL	A0210-08
CERAMENT® BONE VOID FILLER 18 mL	A0210-11
CERAMENT® Bead Tray	A0513
Bone Marrow Needle	A0534-01

BONESUPPORT™

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