

Biocement Brick

A BioMADE Project / Department of Defense Manufacturing Innovation Institutes

 **BioMADE** Technology: Biocement Brick

Project Participants: Air Force Research Laboratory (AFRL)

Institute's role: AFRL is funding this project and developing the technology in-house. AFRL is demonstrating the feasibility of the methods at low to pilot scale and may seek to transition biomass production to commercial partners.

Technology description: Biocement offers certain advantages over traditional cements, including lower CO₂ output and lower logistical requirements. The most advanced methods of forming biocement rely on mixing liquid cultures of microorganisms with aggregate materials (sand, rock, etc.) and chemical feedstocks (urea, calcium chloride). AFRL is developing dry bacterial preparations that can be delivered to the site and used immediately.

Impact: Biocement formed using dry bacterial preparations, in contrast with both traditional cements and biocement formed using liquid bacterial cultures, can be done under a compressed timeline and simplified logistics.

