



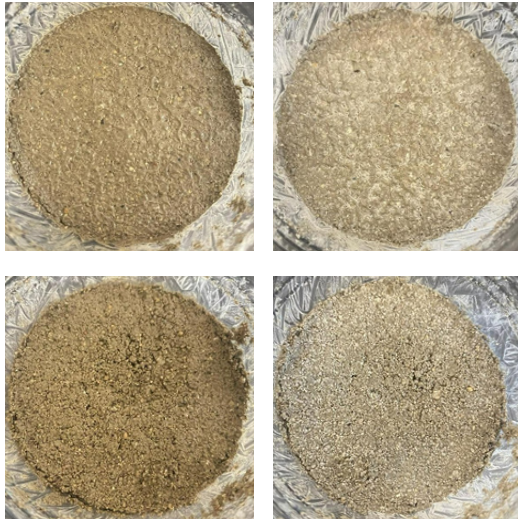
# Superplasticizer

Airable Research Lab has developed a soy-based superplasticizer for use in concrete. Superplasticizers allow operators to reduce the amount of water required to achieve a workable concrete mixture while maintaining cure strength.

### TECHNOLOGY

Airable has created a soy polyether modified with carboxylate side chains that aid in the dispersion of cement particles. The dispersion efficiently spreads water, which allows operators to use less without compromising workability or cure strength.

Performance was evaluated by qualitative observation of wetness with decreased water addition, and quantitatively by testing compressive strength after curing for eight days. All samples appeared more fluid with the addition of superplasticizer. Additionally, all samples maintained their cure strength.



Concrete with 0.25 wt% ARL-1911-2-2 superplasticizer before and after curing

Concrete without superplasticizer before and after curing

### BENEFITS

- Contains up to 36% biobased carbon
- Reduces water required by 15% or more
- Increases concrete flowability
- Maintains cure strength

| Superplasticizer | Wt% Superplasticizer | Water Reduction (%) | Cure Strength (psi) |
|------------------|----------------------|---------------------|---------------------|
| None (control)   | 0                    | 0                   | >3750               |
| ARL-1911-1-96    | 0.60%                | 15%                 | >3750               |
| ARL-1911-1-97    | 0.60%                | 15%                 | >3750               |
| ARL-1911-2-02    | 0.25%                | 15%                 | >3750               |