

Cement-Free Concrete

Portland cement concrete is the most widely used construction material, but it contributes to ~8% of total CO₂ emissions. C-Crete has pioneered a breakthrough pourable cement-free concrete that is essentially CO₂-emission free and actually absorbs CO₂ over time while exceeding Portland cement concrete in performance.



PRODUCT FEATURES

- ✓ **Zero** use of Portland Cement (PC)
- ✓ **Decarbonizing cement/concrete**: saving up to 1 ton CO₂ per ton of C-Crete binder used
- ✓ **Ultra-low embodied energy** by using natural rocks or industrial by-products as the binder
- ✓ **Saving water**: Our concrete product requires up to ~15% less water, helping environment
- ✓ **Meeting standards**: ASTM C1157, freeze-thaw, drying shrinkage, ASR, chloride/acid resistance, etc
- ✓ **No need for new code development**: C-Crete falls perfectly under existing ASTM C1157
- ✓ **Optimal heat of hydration**: around 95 F meeting ACI 301 even for large mat foundations
- ✓ **Easy implementation**: a drop-in technology & easily pumpable concrete via line/boom pumps
- ✓ **Superior properties**: mechanical properties, durability, etc.
- ✓ **Compatibility** with conventional admixtures
- ✓ **Cost-parity** with conventional concrete
- ✓ **High solar reflectance**: minimal heat island effect
- ✓ **Exceptional aesthetics**: Earthy tone concrete representing the color of our planet (no pigments)
- ✓ **Scalable** both in feedstocks and manufacturing

REPRESENTATIVE RESIDENTIAL, COMMERCIAL AND FEDERAL PROJECTS

4000+ tons of C-Crete product was poured in the footings, foundations, shear walls, slabs, columns, highways, driveways, steps and sidewalks of different projects. This includes floor slabs in the new global HQ of JPMorganChase Building designed by Foster+Partners (NYC); a section of Highway I-94 in Minnesota; slabs



and foundations at San Francisco International Airport (SFO); a commercial building in Seattle belonging to Donald Davies, Chair of Building Transparency; a museum in Washington DC; a three story residential building in Canada; shotcrete demonstration for retaining walls, etc. C-Crete has used local ready mix companies (e.g. Heidelberg Materials, Cemex, Holcim, SRM Concrete) for concrete delivery on these projects. C-Crete's oldest pour is 2+ year old, and there is no sign of degradation or cracking. More projects are currently underway at different cities. C-Crete will arrange with your local ready mix company to deliver the C-Crete product at your job site.

AWARDS

C-Crete has been recognized with four prestigious awards in the community:

- 1) Selected by Engineering-News Record as one of the Top 2023 visionaries, making the path to decarbonization easier,
- 2) 2024 Concrete Innovation Award by the US National Ready Mix Concrete Association,
- 3) Winner of The Build Better Innovation Challenge by Elemental Impact,
- 4) 2025 Concrete Innovation Award by the US National Ready Mix Concrete Association

TYPICAL TECHNICAL DATA

Data are verified by independent 3rd parties. Compressive strength can reach >10,000 psi by changing the mix design

| Property | ASTM/AASHTO Standards | Protocol | C-Crete™ | Min or Max per Standard | Unit |
|--|-----------------------|--------------|----------|-------------------------|---------|
| Compressive Strength @ 3 days | ASTM C1157 | C109/C109M | >4500 | >1900 | PSI |
| Compressive Strength @ 7 days | ASTM C1157 | C109/C109M | >5200 | >2900 | PSI |
| Compressive Strength @ 28 days | ASTM C1157 | C109/C109M | >7000 | >4060 | PSI |
| Mortar Bar Expansion @ 14 days | ASTM C1157 | C1038/C1038M | 0.012 | <0.02 | % |
| Time of Setting, Vicat Test (initial set time) | ASTM C1157 | C191 | 165 | >45 and <420 | minutes |
| Air Content | ASTM C1157 | C185 | 2.5 | <12 | % |
| Autoclave Length Change | ASTM C1157 | C151/C151M | 0.21 | <0.8 | % |
| Alkali Silica Reaction @ 14 days | ASTM C1157 | C1260 | 0.01 | <0.02 | % |
| Alkali Silica Reaction @ 56 days | ASTM C1157 | C1260 | 0.02 | <0.06 | % |
| Drying Shrinkage @ 28 days | ASTM C157 | - | 0.03 | <0.05 | % |
| Chloride Diffusivity (Acid soluble chloride ion) | AASHTO T 260-97 | - | 0.2 | <0.4 | % |
| Freeze-Thaw Resistance | ASTM C666/C666M | - | >90% | >60% | % |

DIFFERENT COLORS AND SURFACE FINISHES

C-Crete product comes with different earthy tone colors (without any dye or pigment) and can undergo conventional concrete processing for various surface finishes such as exposed aggregates, polished, polished and sealed, sandblasted (Terrazzo floors), etc. See samples on the first page.

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