

ADVA[®] Cast 540

High-range water-reducing admixture ASTM C494 Type A and F and ASTM C1017 Type I

Product Description

ADVA[®] Cast 540 is a high efficiency polycarboxylate-based superplasticizer. ADVA[®] Cast 540 has been formulated to impart extreme workability without segregation to concrete and to achieve high early compressive strength as required by the precast industry. ADVA[®] Cast 540 is optimized for the production of self-consolidating concrete (SCC) in precast applications.

ADVA[®] Cast 540 is supplied as a ready-to-use brown liquid, one gallon weighs approximately 8.75 lbs (one liter weighs approximately 1.05 kg). ADVA[®] Cast 540 contains no intentionally added chlorides.

Product Advantages

- Imparts excellent stability to high flow concrete
- Improved air entrainment control
- Excellent surface finish

Uses

ADVA[®] Cast 540 is recommended for use in precast and prestressed production in conventional and SCC applications.

Conventional Concrete Applications of ADVA[®] Cast 540:

- Can produce concrete with extremely high levels of workability without segregation.
- May be used to produce concrete with very low water/cement ratios while maintaining normal levels of workability.
- Ideal for use in precast and prestressed applications where concrete needs to achieve high early strengths along with high levels of workability.
- Provides superior concrete surface finish characteristics with reduced bugholing.

Self-Consolidating Concrete Applications:

SCC produced with ADVA[®] Cast 540 has unique advantages over conventional flowing concrete.

- **Self placement** — vibration can be eliminated because SCC is highly flowable and will change shape under its own weight to self level and self consolidate within formwork.
- **No segregation** — SCC is a flowable yet highly cohesive material that will not segregate, and has significantly reduced bleeding.
- **No blocking** — SCC can pass freely through narrow openings and congested reinforcement without aggregate “blocking” behind obstructions that stop the flow of concrete.

Addition Rates

ADVA® Cast 540 is an easy to dispense liquid admixture. Dosage rates can be adjusted to meet a wide spectrum of concrete performance requirements. Addition rates for ADVA® Cast 540 can vary with the type of application, but will normally range from 5 to 20 fl oz/100 lbs (325 to 1300 mL/100 kg) of cementitious material. Should conditions require using more than the recommended addition rate, please consult your GCP representative.

For SCC applications, pre-placement testing is recommended to determine the optimum admixture addition rate and mix design. Factors that influence optimum addition rate include other concrete mix components, aggregate gradations, form geometry, and reinforcement configurations. Please consult your local GCP Applied Technologies representative for assistance with developing mix designs for self-consolidating concrete.

Compatibility with Other Admixtures and Batch Sequencing

ADVA® Cast 540 is compatible with most admixtures as long as they are added separately to the concrete mix. However, ADVA® products are not recommended for use in concrete containing naphthalene-based admixtures including DARACEM® 19 and DARACEM® 100 and melamine-based admixtures including DARACEM® 65. In general, it is recommended that ADVA® Cast 540 be added to the concrete mix near the end of the batch sequence for optimum performance.

Different sequencing may be used if local testing shows better performance. Please see GCP Technical Bulletin TB-0110, *Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations* for further recommendations.

Pretesting of the concrete mix should be performed before use and as conditions and materials change in order to assure compatibility with other admixtures, and to optimize dosage rates, addition times in the batch sequencing and concrete performance. For concrete that requires air entrainment, the use of an ASTM C260 air-entraining agent (such as DARAVAIR® or DAREX® product lines) is recommended to provide suitable air void parameters for freeze-thaw resistance.

Please consult your GCP representative for guidance.

Packaging & Handling

ADVA® Cast 540 is available in bulk, delivered by metered trucks, in totes and drums. ADVA® Cast 540 will freeze at approximately 28°F (-2°C) but will return to full functionality after thawing and thorough mechanical agitation.

Dispensing Equipment

A complete line of accurate, automatic dispensing equipment is available.

gcpat.com | North America Customer Service: 1 877-4AD-MIX1 (1 877-423-6491)

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