

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 formulated to comply with ASTM C494 as a Type A and F, and ASTM C1017 Type I.

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.

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.

Product Advantages

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



- 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 Grace 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 Grace Construction Products 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 Grace 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 ML 330 and

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 Grace Technical Bulletin TB-0110, *Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations* for further recommendations. ADVA Cast 540 should not come in contact with any other admixture before or during batching, even if diluted in mix water.

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 Grace representative for guidance.

Packaging & Handling

ADVA Cast 540 is available in bulk, delivered by metered trucks, in 275 gal (1041 L) totes, and 55 gal (210 L) 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.

www.graceconstruction.com

North American Customer Service: 1-877-4AD-MIX1 (1-877-423-6491)

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