

ADVA[®] Cast 555

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

Product Description

ADVA[®]Cast 555 is a high efficiency polycarboxylate-based superplasticizer. ADVA[®]Cast 555 has been formulated to impart maximum desired workability without segregation to concrete and to achieve high early compressive strength as required by the precast industry. ADVA[®]Cast 555 is optimized for the production of Self-Consolidating Concrete (SCC) in precast/ prestressed applications. ADVA[®]Cast 555 is formulated to comply with ASTM C494 as a Type A and F and ASTM C1017 Type I.

ADVA[®]Cast 555 is supplied as a ready-to-use brown liquid. One gallon weighs approximately 8.90 lbs (one liter weighs approximately 1.07 kg). ADVA[®]Cast 555 contains no intentionally added chlorides.

Product Advantages

- Superior air entrainment control
- Excellent concrete cohesiveness even with less than optimum aggregate gradations
- Enhanced tolerance to slight moisture variability
- Consistently produces non-segregating concrete
- Superior finish on cast surfaces
- Enhanced strength development

Uses

ADVA[®]Cast 555 is recommended for use in precast and prestressed production in conventional and SCC applications.

Conventional Concrete Applications of ADVA[®] Cast 555:

- 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 strength along with high levels of workability.
- Provides superior concrete surface finish characteristics with reduced bugholing.

Self-Consolidating Concrete Applications

SCC produced with ADVA[®]Cast 555 has unique advantages over conventional flowing concrete.

- Lower SCC viscosity — flow properties of SCC are enhanced, reducing SCC viscosity with no change in stability or segregation resistance.
- 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.
- High cohesion — the window of acceptable mix designs to maintain cohesive SCCs is increased, allowing for the production of SCC that is flowable and yet highly cohesive. Bleeding is significantly reduced.
- 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 555 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 555 can vary with the type of application, but will normally range from 8 to 20 fl oz/100 lbs (540 to 1400 mL/100 kg) of cement. Should conditions require using more than the recommended addition rate, please consult your GCP Applied Technologies 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 555 is compatible with most GCP 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 555 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 Applied Technologies representative for guidance.

Packaging & Handling

ADVA®Cast 555 is available in bulk, delivered by metered trucks, in totes and drums. ADVA®Cast 555 will freeze at approximately 32°F (0°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

ca.gcpat.com | North America customer service: 1-877-4AD-MIX (1-877-423-6491)

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