

ADVA[®] 120

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

Product Description

ADVA[®]120 is a polycarboxylate-based high-range water-reducing admixture specifically formulated to meet the needs of the concrete industry. It is a low viscosity liquid, which has been formulated by the manufacturer for use as received.

ADVA[®]120 does not contain intentionally added calcium chloride. One gallon weighs approximately 8.8 lbs(1.1 kg/L).

Product Advantages

- Highly efficient, producing high slump concrete at very low dosages
- Provides a combination of slump life with near neutral set time
- Consistent air entrainment
- Consistent performance across cement chemistries
- Concrete finishes easily without stickiness, spotty set or tearing

Uses

ADVA[®]120 superplasticizer produces concrete with extremely workable characteristics referred to as high slump. It also allows concrete to be produced with very low water/cement ratios for high strength.

While ADVA[®]120 is ideal for use in any concrete where it is desired to minimize the water/cementitious ratio yet maintain work ability, ADVA[®]120 is primarily intended for use in ready-mix concrete, but may also be used in other applications such as precast concrete and Self-Consolidating Concrete.

Addition Rates

ADVA[®]120 superplasticizer addition rates can vary with type of application, but will normally range from 3 to 9 fl oz/100 lbs (195 to 590 mL/100 kg) of cementitious. In most instances, the addition of 3 to 6 fl oz/100 lbs (195 to 375 mL/100 kg) of cementitious will be sufficient. At a given water/cementitious ratio, the slump required for placement can be controlled by varying the addition rate. Should conditions require using more than the recommended addition rates, please consult your GCP representative.

ADVA[®]120 dosage requirements may also be affected by mix design, cementitious content and aggregate gradations. Please consult with your GCP representative for more information and assistance.

Compatibility with Other Admixtures and Batch Sequencing

ADVA[®]120 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[®]120 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[®]120 is available in bulk, delivered by metered tank trucks, in totes and drums.

It will begin to freeze at approximately 32°F (0°C), but will return to full strength after thawing and thorough agitation. In storage, and for proper dispensing, ADVA[®]120 should be maintained at temperatures above 32°F (0°C).

Dispensing Equipment

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

ADVA[®] 120 ASTM C494 Type F High-Range Water Reducer Test Data

U.S. Units

	CONTROL	ADVA [®] 120
Cement (pcy)	517	517
Coarse aggregate (pcy)	1944	1944
Fine aggregate (pcy)	1144	1214
Water (pcy)	235	204
w/cm	0.455	0.405
Slump (inches)	3.75	3.5
Plastic air (%)	5.5	5.4

Compressive strength

1 day (psi)	1860	2670
7 day (psi)	4520	5530
28 day (psi)	5440	6690
Initial set time (hr:min)	4:02	3:55
Length change 28 day (%)	-0.031	-0.028
Freeze-thaw resistance (RDME %)	92	98

Metric Units

	CONTROL	ADVA® 120
Cement (kg/m ³)	307	307
Coarse aggregate (kg/m ³)	1153	1153
Fine aggregate (kg/m ³)	679	720
Water (kg/m ³)	140	121
w/cm	0.455	0.405
Slump (mm)	95	89
Plastic air (%)	5.5	5.4

Compressive strength

1 day (MPa)	12.8	18.0
7 day (MPa)	31.2	38.1
28 day (MPa)	37.5	46.1
Initial set time (hr:min)	4:02	3:55
Length change 28 day (%)	-0.031	-0.028
Freeze-thaw resistance (RDME %)	92	98

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