

LC-400R

SET RETARDING WATER-REDUCING ADMIXTURE FOR CONCRETE

DESCRIPTION:

LC-400R is a set retarding, water-reducing multi-component admixture for concrete. It is designed to facilitate the placing and finishing of concrete while providing control over the set time. **LC-400R** is especially beneficial during hot weather concreting operations when control of setting time and maintenance of a placeable consistency are essential.

ADVANTAGES:

- Provides variable control of setting time based on dosage rate
- Improves quality of concrete by decreasing water-cement ratio
- Increases strengths both compressive and flexural
- Increases density and relative durability
- Resists damage caused by freezing and thawing
- Reduces water content needed for a given workability
- Reduces cracking and shrinkage
- Reduces surface bleeding
- Reduces segregation
- Provides superior finishability on all flatwork and pre-cast surfaces
- Improves pumpability of concrete
- Maintains slump life during extended mixing times
- Aids to reduce peak heat of hydration in mass pour concrete, reducing thermal cracking
- Aids in preventing cold joints

DOSAGE RATE:

LC-400R is recommended for use at a dosage rate of 3 to 6 fluid ounces per 100 pounds (200 to 390 mL per 100 kg) of cement .

LC-400R is normally added to the concrete mix at the following dosage rates as a function of temperature:

70 F (21 C to 24 C) - 3 fl oz. per 100 pounds
(200 mL per 100 kg) cement

75 F (18 C to 27 C) - 4 fl oz. per 100 pounds
(260 mL per 100 kg) cement

80 F (27 C to 30 C) - 5 fl oz. per 100 pounds
(330 mL per 100 kg) cement

85 F and up (30 C to 33 C) - 6 fl oz. per 100
pounds (390 mL per 100 kg) cement

SPECIFICATIONS:

Conforms to:
ASTM C 494 Types B and D
AASHTO M 194 Types B and D
CRD C 87 Types B and D
All other Federal and State specifications

TECHNICAL NOTE:

LC-400R does not contain calcium chloride or any chloride-based components. It will not promote or contribute to corrosion of reinforcing steel in concrete.

MIX PERFORMANCE DATA:

517 lbs. (307 kg) of Type I cement per cubic yard (cubic meter)
Slump 3.5 inches (89 mm)
Ambient Temperature 70 F (21 C)
Concrete Temperature 65 F (18 C)

Compressive Strength:

LC-400R at 3 ounces per 100 pounds (200 mL per 100 kg) cement

Mix	7 day		28 Day	
	<u>psi</u>	<u>MPa</u>	<u>psi</u>	<u>MPa</u>
Plain	3780	26.1	4810	33.2
LC-400R	4650	32.1	5740	39.6

Time of Set:

LC-400R at 3 ounces per 100 pounds (200 mL per 100 kg) cement

Mix	Initial Set	Difference
	<u>Hours: Minutes</u>	<u>Hours: Minutes</u>
Plain	5:04	--
LC-400R	6:28	+1:24

Compressive Strength:

LC-400R at 4 ounces per 100 pounds (260 mL per 100 kg) cement

Mix	7 day		28 Day	
	<u>psi</u>	<u>MPa</u>	<u>psi</u>	<u>MPa</u>
Plain	3780	26.1	4810	33.2
LC-400R	4870	33.6	5980	41.2

Time of Set:

LC-400R at 4 ounces per 100 pounds (260 mL per 100 kg) cement

Mix	Initial Set	Difference
	<u>Hours: Minutes</u>	<u>Hours: Minutes</u>
Plain	5:31	--
LC-400R	7:35	+2:04

*As the dosage rate of **LC-400R** increases, concrete set times are increased at the rate of approximately 1/2 to 1 hour for each additional 1 ounce (65 mL) per 100 pounds (100 kg) cement. Workability is improved and ultimate strengths are also increased.

STORAGE:

LC-400R may freeze at temperatures below 35 F (2 C). Although freezing does not harm **LC-400R**, precautions should be taken to protect it from freezing. If it should happen to freeze, thaw and reconstitute with mechanical agitation. **DO NOT USE PRESSURIZED AIR FOR AGITATION.**

COMPATIBILITY:

LC-400R is compatible with all types of Portland cement, class C and F fly ash, silica fume, fibers, approved air entraining, water-reducing, and superplasticizing admixtures. **LC-400R** can be used in white, colored, and architectural concrete. For best results, each admixture must be added separately into the concrete mix.

PACKAGING:

55-gallon drums, 275-gallon tote tanks, and bulk delivery

SHELF LIFE:

18 months

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