

03 30 00	Cast-in-Place Concrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete

MasterSet[®] DELVO ESC

Hydration Controlling Admixture

Description

MasterSet DELVO ESC extended-set control admixture provides a dispenser-free way of controlling the cement hydration in plastic concrete and washwater. It is a self-contained, dry formulation of MasterSet DELVO admixture designed to control the hydration of cementitious materials in concrete washwater and plastic concrete. MasterSet DELVO ESC admixture meets ASTM C 494/C 494M requirements for Type B, retarding, and Type D, water-reducing and retarding, admixtures.

Applications

Recommended for use in:

- Retarding freshly-batched concrete
- Stabilizing returned plastic concrete and concrete washwater
- Portland cement, fly ash, silica fume and slag cement concrete

Features

- Reduced amount of water needed to clean ready-mixed concrete truck drums
- Reduced need for concrete washwater pits, the resulting wear and tear on front end loaders and disposal charges
- Concrete containing stabilized washwater will experience strength performance equal to or greater than reference concrete without stabilized washwater
- Acts as a cleansing agent to reduce the buildup on fins, reducing maintenance costs incurred from chipping out hardened concrete

Benefits

- Convenient way to save a load of concrete in emergency situations or job delays
- Economical for transporting concrete for long hauls
- Reduced labor costs of washing out trucks
- Reduced material costs, allowing for a cement reduction of between 47 and 94 lb (21 to 43 kg) when a full 9 yd³ (7 m³) load is batched on top of the stabilized concrete washwater (must be verified by performance testing)
- Improved profitability for the ready-mixed concrete producer
- Reduced environmental concerns pertaining to the disposal of concrete washwater and plastic concrete

Guidelines for Use

MasterSet DELVO ESC admixture can be used as a retarder in freshly-batched concrete or for stabilizing returned plastic concrete and concrete washwater. If MasterSet DELVO ESC admixture is used as a retarder, performing field trials is essential and must be made under approximate job conditions to determine the dosage required to achieve the desired setting time. The day after overnight or weekend washwater stabilization, MasterSet DELVO ESC admixture-treated concrete washwater is combined with freshly-batched concrete and sent to the job site. The stabilized concrete washwater that is held in the ready-mixed concrete truck drum is used as mix water for the subsequently batched mixture. The result is quality, dependable concrete with no waste.

Dosage: For overnight stabilization of concrete washwater, use 2 to 3 MasterSet DELVO ESC admixture pucks with 35-70 gal (130-265 L) of fresh water per truck. For weekend stabilization, use 4 to 6 MasterSet DELVO ESC admixture pucks with 35-70 gal (130-265 L) of fresh water per truck. Each puck is equivalent to 16 fl oz (470 mL) of liquid MasterSet DELVO admixture.

For concrete mixtures containing Type III cement, use 3-5 MasterSet DELVO ESC admixture pucks and 35-70 gal (130-265 L) of fresh water for overnight stabilization, and 5-7 MasterSet DELVO ESC admixture pucks for weekend stabilization of concrete washwater. If weather conditions or scheduling problems do not permit the use of a ready-mixed concrete truck containing stabilized concrete washwater either the next day or over the weekend, the concrete washwater may be restabilized once, before being used as mix water the following day.

Note: At ambient temperatures below freezing, the stabilized concrete washwater may freeze. If this occurs, add 5-25 gal (20-95 L) of hot water to the truck and mix at agitation speed to melt the frozen material. The transfer of stabilized concrete washwater into one or more ready-mixed concrete trucks parked indoors, into a central holding vessel or the use of water heaters may prevent the freezing of stabilized concrete washwater.

Stabilization Procedure For Overnight/Weekend

Stabilization: The procedure for overnight/weekend stabilization of concrete washwater is easy, but it is important that each stabilization procedure step is correctly followed.

1. The ready-mixed concrete truck must be empty of any returned concrete.
2. Add 35-70 gal (130-265 L) of water to the truck drum.
3. Toss 2 to 3 MasterSet DELVO ESC admixture pucks into the truck drum with the washwater for overnight stabilization. For weekend stabilization, use 4 to 6 MasterSet DELVO ESC admixture pucks.
4. Mix at high speed for 1 minute.
5. Reverse the stabilized concrete washwater quickly 4 to 7 times or as recommended to the rear of the drum, creating a wave action for maximum fin cleaning.

6. Return the stabilized concrete washwater to the front of the drum and mix at high speed for 1 minute. During mixing, wash down the fins closest to the point of discharge with water from the truck hose [use no more than 5 gal (19 L)]. This will loosen any buildup adhering to these fins.
7. Park the truck for the night or weekend leaving the safety hatch at the 3 or 9 o'clock position.
8. The next day or after a weekend, reduce the water content of freshly-batched concrete by the amount added in steps #2 and #6.

Please contact your local sales representative for guidelines pertaining to the use of MasterSet DELVO ESC admixture technology for extended-set control, long-haul and same day stabilization applications.

For Truck Breakdowns and Job Delays: Procedures A and B (detailed below) can be used to stabilize concrete with MasterSet DELVO ESC admixture.

Procedure A: Dissolve Pucks in Water

1. Determine the dosage (No. of pucks needed)
2. Dissolve the pucks in 1-2 gal (4-8 L) of water (Requires agitation and only takes a few minutes)
3. Back concrete to rear of truck and treat with dissolved pucks.
4. Mix at high speed for 5 minutes.

Procedure B: Dissolve Pucks in Truck (concrete must be at 4 in. (100 mm) slump or higher)

1. Determine the dosage (No. of pucks needed).
2. Back the concrete to rear of the truck.
3. Break the MasterSet DELVO ESC admixture pucks in half.
4. Place the pucks onto the concrete and spray with water for 15 to 30 seconds.
5. Mix the concrete at high speed for 5 to 7 minutes.

For additional dosage information, refer to the MasterSet DELVO ESC admixture placard.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterSet DELVO ESC admixture will neither initiate nor promote corrosion of reinforcing steel in concrete. This admixture does not contain intentionally-added calcium chloride or other chloride-based ingredients.

Compatibility: MasterSet DELVO ESC admixture may be used in combination with any Master Builders Solutions admixture. When used in conjunction with another admixture, each admixture must be dispensed separately into the mixture.

Storage and Handling

Storage Temperature: MasterSet DELVO ESC admixture should be stored in a dry, moisture-resistant environment at temperatures below 110 °F (43 °C).

Shelf Life: MasterSet DELVO ESC admixture has a minimum shelf life of 6 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterSet DELVO ESC admixture has been exceeded.

Safety: If MasterSet DELVO ESC admixture comes into contact with eyes, skin or clothing, immediately flush with water (for skin – wash with soap and water) for 15 minutes. Remove contaminated clothing and wash before reuse.

Packaging

MasterSet DELVO ESC admixture is supplied in a specially designed 5.5 gal (21 L) bucket with a twist-off lid containing 100 pucks.

Related Documents

Safety Data Sheets: MasterSet DELVO ESC admixture, MasterSet DELVO ESC Placard #115676.

Additional Information

For additional information on MasterSet DELVO ESC admixture, contact your local sales representative.

Master Builders Solutions creates technologies for the construction industry inspiring people to build better. We are active in ~40 countries and operate 35 production sites with over 1,600 employees. We develop, produce, and market high-quality chemical admixtures, as well as adjacent core technologies, to master the challenges of today and support a decarbonized future. Our people are pivotal and pair leading technologies and a strong brand heritage to surpass our customers' expectations and drive continuous value creation.

Limited Warranty Notice

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