

Duracoat™

Duracoat™ is an ultra-high performance concrete composite material with organic fibers, formulated for customized spray-on liner applications. It is sprayable and pumpable with properties adaptable to the demands of each application. It is available as a 3 component blended material: pre-blended 50 lb bags of pre-mix, liquid admixture and bagged fiber.

DESCRIPTION

Duracoat™ is a pumpable/sprayable fiber reinforced pre-blended concrete mix composed mainly of highly specific cement, silica fume, silica flour and silica sand.

APPLICATION

The Duracoat™ batch mix is designed to adhere to properly prepared existing vertical substrates, clean, dry and free of loose material.

- *Minimum thickness:* ½" to 1"
- *Spray Hose diameter:* 1" to 3"
- *Equipment:* must be cleaned and dried before each application.
- *Water:* must be clean and potable.

STRENGTH

The tight gradation and specification of select materials contributes to higher than normal concrete strengths.

- *Compressive (post-cure)* >15,000psi
- *Flexural (post-cure)* >1,300 psi

DURABILITY

The reduced water to cement proportions of Duracoat™ lowers permeability and provides an increased resistance against freeze thaw action and corrosion.

OTHER PROPERTIES

Density: 2.2 to 2.4 SG

RHEOLOGY

Plastic to high slump flow:

- *Flow (Abrams cone)* 8–28 in.
- *Flow (ASTM shock table)* 6–9 in.

COMPOSITION

Portland Cement • Silica Fume • Silica Sand • Quartz Flour

COLORS

White or light grey; also available in a variety of solid or blended colors, upon request.

PRE-MIX

Duracoat™ can be mixed in a normal industrial high shear, high torque concrete mixer, tuned for fine-sized materials. Use of a pre-mix simplifies the batching sequence and length of mixing time.

MIXING

One batch (two 50lb bags) of Duracoat™ pre-mix requires (i) 180-200 ounces of chilled potable water; (ii) two ounces of liquid admixture; and (iii) two ounces of fiber (approx two handfuls).

- Add one bag of Duracoat™ pre-mix to mixer
- Add ½ chilled potable water to mixer (approx 90 oz.)
- Add two ounces of liquid admixture to mixer
- Slowly and evenly add fiber (do not allow clumping)
- Add one bag of Duracoat pre-mix
- Monitor consistency while adding water 1 oz. at a time
- Consistency should be moist to the touch and be able stick to the hand when held upside down
- Material should not be clumpy or dry
- Hot days will require slightly more water
- Total mix time is approx 5-6 minutes (per 2-bag batch)

PLACING

Duracoat™ is adaptable to most placing techniques with a daily low temperature above freezing: spray-on, cast-in-place, pumping, injection, extrusion, etc.

CURING

Normal curing at 70 degrees Fahrenheit with anti dehydrate or fine water mist surface treatment for 24 to 72 hours.

THERMAL TREATMENT

140 degrees Fahrenheit @ 100% Relative Humidity for 72 hours.

MOLDING

Texture: The fineness of Duracoat™ raw materials and fluidity of the mix provides a material with the ability to replicate the micro-texture of the form surface or special mold textures. Spray-on surface textures are of high quality uniform appearance.

STORAGE

Duracoat™ is reactive with water. Therefore, it is recommended that Duracoat® is not place or stored in direct contact with the ground. Exposure to water or high humidity environments will reduce material performance. Protect from moisture.