

# CSI Integral Color

Technical Data Sheet 2.0509DS



*Helix Color Systems is a premier line of specialty decorative concrete admixtures manufactured by ChemSystems Inc. Helix Color Systems is manufactured for the discriminating installer or designer who values service and quality. Specializing in custom colors, specialty products, and superior service, Helix Color Systems offers an innovative alternative in the decorative concrete industry.*

## Description

Get value added results by using CSI Integral Color with ready mixed, precast concrete. Made with high quality synthetic iron oxide pigments, CSI Integral Color is the ideal, economical, integral coloring choice for flatwork and vertical applications.

## Product Benefits

- CSI Integral Color pigments are available in a wide variety of standard colors. Custom colors and color matching are also available.
- CSI Integral Color is packaged in standard 50-lb paper bags, and available in disintegrating bags and special sized bags.

## Pre-Application

1. CSI Integral Color color is designed for ready mixed, precast, curbing machines and mortar coloring use. CSI Integral Color should not be dusted or sprinkled onto the concrete surface.
2. Consistency of cement color, aggregates, slump, finishing techniques and curing methods are critical in achieving color uniformity.
3. Dosage Guidelines:  
**Disintegrating Bags** – Consult the CSI Integral Color Color Chart for color selections and pigment dose per 94-pound sack of cement.  
**Bulk** – Pre-weigh color for accuracy in dosing.
4. A jobsite sample, using the specified mix design and color, should be completed for customer approval. For an accurate color check on a jobsite sample or on any job, the recommended size of the job should be a minimum order of three yards. In order to get an accurate color check, view sample when it has fully cured.
5. Concrete should be batched, placed, cured and finished in accordance with ACI (American Concrete Institute) recommended standards.

## Application

1. Ensure that slump does not exceed five inches. Slump should be consistent from pour to pour. Mix designs requiring higher slumps should be achieved by using water-reducing or plasticizing admixtures, not by adding water. Adding water will adversely affect the color.
2. **For Ready Mixed Application:**
  - The drum must be cleaned, and approximately two-thirds of the mix water and one-half of the aggregates needed should be added to the drum. The proper combination of disintegrating bags or preweighed bulk CSI Integral Color should be added to the drum and allowed to mix at a full charging speed for three to five minutes or until bags break apart and pigment is distributed evenly.
  - Add the balance of the ingredients (water, aggregates, cement and admixtures) and mix at a full charging speed for 8-10 minutes (80-100 revolutions). It is the ready mixed supplier's responsibility to make sure bags have fully disintegrated. Failure to follow instructions can result in bags not fully disintegrating.
3. **For Central or Premixed Batch Plants:**
  - After one-half of the total batch has been added to the ready mixed

drum, the proper combination of disintegrating bags or preweighed bulk CSI Integral Color should be added. Drum should be allowed to mix at a full charging speed for three to five minutes.

- Add the remainder of the batch to the drum and agitate at full charging speed until the CSI Integral Color color is completely dispersed throughout the mix—about 8-10 minutes (80-100 revolutions). It is the ready mixed supplier's responsibility to make sure bags have fully disintegrated. Failure to follow instructions can result in bags not fully disintegrating.

## 4. Jobsite Loading of Integral Colors:

- When applying CSI Integral Color at the jobsite, it is **highly recommended** to open the bag and pour pigment directly into the drum, then discard the bag. Failure to do so may result in improper dispersion which leads to inconsistent color.
- Once pigment has been added, **NO** additional water may be added.

5. Type of aggregate, mix design and water content may affect disintegration of bags. Mixing times and procedures are based on best practices. Mixing times and procedures may vary by region depending on factors mentioned previously (aggregate type, etc.). Before discharging the mix, ready mixed supplier should monitor mix inside the drum to determine that the bags have broken down completely.

6. **For Vertical Applications:** All forms should be cleaned thoroughly prior to use or reuse, and applied release agents should be nonstaining. For best results, forms should be free of cement latents from any prior concrete pour of a different color. For color uniformity, methods and material used in preparing the forms should be consistent through the completion of the job.

To achieve more uniform color, forms should be stripped when the concrete is the same age. Lightly sandblasting vertical surfaces is recommended to remove minor form marks and any cement latents resulting from water, cement and coloring agents bleeding toward the forms during concrete placement.

7. For fiber-reinforced concrete, fibers should be added after CSI Integral Color color has been dispersed.
8. For sand-blasted surfaces, exposed aggregate (3/8-inch size pea gravel) finishes, or typical 3/8-inch size pea gravel mixes, open CSI Integral Color bag and empty entire bag of color into drum to ensure proper dispersion.
9. Concrete should be cured in accordance with ACI standards.

Proper curing, along with maintaining a low slump and protecting the surface against water penetration, reduces the possibility of efflorescence. If efflorescence does occur, remove using a mild solution of muriatic acid followed by a light scrubbing or the use of a low r.p.m. rotary scrubbing machine. (**Important Note:** If considering acid-washing with this solution, it is advised to wait a minimum of 14 days following the initial installation of CSI Integral Color.) Properly curing along with protecting the surface against water penetration, reduces the possibility of efflorescence.

ChemSystems, Inc. offers a full range of sealers that enhance and finish CSI Integral Color.