

# Thinking About Automating Color In Your Ready Mix Plant



*A Step-By-Step Guide  
To Making  
The Right Decision*

# *Why Automate Your Color?*

- **Reduce batch errors.** Eliminate any chance of employee error. Automatic metering systems weigh precisely the correct pigment(s) each time and add the color to the mixer or truck at the right time, every time.
- **Reduce truck standing time.** Color metering systems are fast and accurate. The truck pulls up and color is discharged with a push of a button. No waiting for a person to hoist pigment up into the truck for each color project.
- **Improve housekeeping.** Color metering systems are accurate, totally enclosed, self-cleaning, and automatic. Eliminates pigment dust caused by emptying bags of color into a truck.
- **Lower labor costs and worker compensation claims.** Eliminates manual labor and improves worker safety. Bags of color can weigh more than 25 pounds, and workers usually must climb a ladder or stairs to get above the truck. Buckets of liquid color weigh even more.
- **Create an unlimited color range from four primary pigments.** All that is needed to create a wide color pallet are two shades of red, one yellow, and one black. From these four colors, the system chooses the exact amount of the right pigment each time using a predetermined formula. The color system is capable of maintaining over 100 formulas.
- **Get custom colors immediately.** Eliminate waiting for your pigment supplier to pre-blend a custom color. Instead, enter a new formula into the color system and you have a new custom color immediately.
- **Reduce inventory of pigment.** Stock the four primary color shades only, not a wide range of colors in custom sized bags.
- **Automatic record keeping.** The computer can store batch information and print records when needed.

## *Your Choices in automation Are Bayferrox® Granules or Liquid Colors*

**T**here are no inexpensive color metering systems that can accurately weigh and meter dry pigment powders to the mixer. That is why over 20 years ago pigment manufacturers developed liquid colors: Pigment in a liquid "suspension," and a system that pumps that liquid color to the mixer.

Bayferrox iron oxide granules are many particles of standard Bayferrox iron oxide pigment powders held together in one larger granules. They are 100% pure pigment that flows freely, like sugar, making it easy to automatically weigh each batch of pigment accurately. Using the Standley Color Batch pigment metering system, pigment is liquefied batch by batch, only when needed, then transferred to the mixer.

### *Bayferrox® granular iron oxide pigments*

**A. ISO certified and made by LANXESS Corporation.** All Bayferrox manufacturing sites have ISO Certification. This is your guarantee that all steps in the manufacturing process have been outlined and are being followed to assure color consistency.

**B. Meets ASTM requirements.** Iron oxide pigments for concrete must be alkali resistant, light fast, water insoluble, chemically inert, and weather resistant to meet ASTM C-979.

*(Continued on page 4)*

## *Bayferrox<sup>®</sup> granules...* (Continued from page 3)

**C. Will not freeze, settle, or evaporate.** As a dry powder, Bayferrox pigments are not subject to the problems that may affect liquid colors.

**D. Has lower freight costs.** Liquid colors contain water that weighs eight pounds per gallon. That's a lot of weight added to freight charges. Why not use your own local water and convert Bayferrox granules to a liquid in an automatic system?

**E. Has no hidden costs.** You will know exactly the price per pound for the pigment, and any freight charge or equipment surcharge will be clearly identified.

### *Liquid colors*

One pound of slurry at 65% solids (specified on the drum) is .65 pounds pigment and .35 pounds water, but all slurries are not equal. Some colors are higher than 65%, some lower.

Here is a simple calculation to use to find out exactly the price per pound for the pigment in the slurry:

$$\text{Cost per pound of slurry} \div \text{percent solids} \\ = \text{cost per pound of dry color in the slurry}$$

This is a good number to know when comparing the price of Bayferrox to the price of the pigment in liquid colors.

The accompanying chart shows some average costs of slurries, and what the pigment in that slurry actually costs.

Slurry Price per pound	\$0.60	\$0.65	\$0.70	\$0.75	\$0.80	\$0.85	\$0.90	\$0.95	\$1.00
Percent Pigment in Slurry	<b>Pigment in Slurry Cost Per Pound</b>								
	Formula is cost/pound of slurry ÷ percent solids = cost/pound of dry color								
55%	\$1.09	\$1.18	\$1.27	\$1.36	\$1.45	\$1.55	\$1.64	\$1.73	\$1.82
60%	\$1.00	\$1.08	\$1.17	\$1.25	\$1.33	\$1.42	\$1.50	\$1.58	\$1.67
65%	\$0.92	\$1.00	\$1.08	\$1.15	\$1.23	\$1.31	\$1.38	\$1.46	\$1.54
70%	\$0.86	\$0.93	\$1.00	\$1.07	\$1.14	\$1.21	\$1.29	\$1.36	\$1.43
75%	\$0.80	\$0.87	\$0.93	\$1.00	\$1.07	\$1.13	\$1.20	\$1.27	\$1.33

## *Automatic metering systems for Bayferrox® granules*

- Converts the Bayferrox pigment to a liquid on a batch-to-batch basis, then transfers the "liquefied" color to the ready mix truck. It is a totally enclosed system, and the lines are always kept clean due to the rinse cycle that follows each batch.

1. Predetermined amount of water is measured into preparation tank.
2. Pigment is metered through screw conveyors onto the water in the tank, and each is weighed separately as called for by the formula. Weight of pigment measured to .20 pound accuracy as an "additive" weight to the water.
3. Water and pigment are agitated into homogeneous "slurry."
4. Pigment slurry is pneumatically conveyed to mixer.
5. Clean water flushes the tanks and discharge hose, and the flush water is added to mixer so there is no pigment or waste water.
6. The total amount of water is equivalent to the amount of water in liquid colors.

- Four-color system produces unlimited range of colors.
- Purchase a system with bagging option. Select the color and the system automatically weighs the dry pigment for you to put into a bag or bucket. This is ideal for ready mix companies with multiple locations where demand for colored concrete is just beginning to grow.



*The dry-to-wet Standley Color Batch pigment metering system is an enclosed system that produces an unlimited range of colors.*

## *Compare price of automatic metering systems*

Don't be duped by the lower price of a liquid color metering system, where the initial price may be \$10-15,000 less expensive than a system for Bayferrox granules as described above. Look at the "hard" and "soft" savings you will have using Bayferrox. The price difference may be recovered in one year or less, depending on the amount of color you purchase annually.

*Call for a quote  
for the system you want!*



*For more information on the Standley Color Batch pigment metering system contact:*

Standley Batch Systems  
505 Aquamsi Street  
Cape Girardeau, MO 63702-0800  
1-800-325-8084  
[www.standleybatch.com](http://www.standleybatch.com)

*For more information on Bayferrox pigments contact LANXESS.*

*See [www.Bayferrox.com](http://www.Bayferrox.com)*

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color for life.

**LANXESS Corporation**  
111 RIDC Park West Drive • Pittsburgh, PA 15275  
1-800-LANXESS (526-9377)

**[www.Bayferrox.com](http://www.Bayferrox.com)**

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Note: The information contained in this bulletin is current as of June, 2007. Please contact LANXESS Corporation to determine if this publication has been revised.

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Cape Girardeau, MO 63702-0800  
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