

Field marking paints:

Characteristics and composition

BY MARK A. WHITLAM

Field marking has come a long way from the days of lime, chalks, and oil-based paints used to mark the lines on sports fields. Today, painting with latex-based field paints has become the choice method for lining and decorating fields. Using latex paints has a distinct advantage over its predecessors being safe for the environment, non-damaging to the turf, having relatively low cost per application, and being easy to clean up.

Today's field marking paints are derived from a mixture of a vehicle, the liquid portion of the paint, and pigments, the solid portion of the paint. Within each of these segments, the paint derives its own characteristics. In field marking paints the vehicle contains three primary ingredients: the solvent (water), the binder (latex resin), and wetting or dispersing agents (the same liquids used in dish soap).

The pigments include titanium dioxide (the whitest pigment available) used as a primary pigment and filler pigments such as calcium carbonates, silicates, talc, and Kaolin (clay). All of these materials are combined and ground to form a coating desirable for decoration or identification of boundaries.

Latex is king

Latex has become the binder most used in field marking paints due to its unique structure and ability to be reduced with water. Once latex has dried, it forms a complex polymer structure of lattices (hence latex) much like latticework in construction. However, these lattices build layer upon layer in all directions to produce a paint film. This allows the substrate, in this case the grass, the ability to "breathe." This structure also allows for evaporation of very small water molecules leaving the blade of grass, fueling the grass for continued growth.

Pigments give the paint its color and are generally organic for field marking paints. Nontoxic organic pigments have been used since man first began drawing on cave walls; organic pigment colors, however, have changed significantly in the past 100 years.

Only recently have organic pigments become popular; earlier problems included their relatively high cost compared with leaded pigments. Today, organic pigments can now be synthetically manufactured, offering you stronger tint strengths, better light fastness (ability to keep its color), and in a



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few cases, new pigment types or color shades allowing for a larger range of colors. With these recent advancements, organics have offered increased value.

Surfactants or "wetting agents" and dispersants are the smallest part of field marking paints. Typically only 1-2 percent of the total paint consists of these agents. Surfactants and dispersing agents get their name from how they perform. Surfactants are "surface active agents." Most dry pigments are "hydrophobic" in nature, meaning they fear water. Therefore, these surfactants allow the latex and water to combine with the pigments and stay "wet" in solution. Depending on its nature, surfactants will also aid in the wetting of the substrate or grass. The dispersing agents keep all the ingredients mentioned above in solution and prevent settling out.

Painting on multi-purpose fields

Permanent paint on the turf presents a problem to turf managers when their field is used for several different sporting events. The only available way to remove the paint is to wait for the lines and logos to wear out or use the old standby, chalk.

Several years ago our company, Whitlam Paint, with the assistance of David Frey, former field director of Cleveland Stadium, developed a temporary field marking paint named Temp-Stripe for multi-purpose natural turf fields. The idea was to produce a paint that could be applied like normal field marking paints, but could easily be removed from the field with the use of minimal water pressure.

One concern and probably the most critical, was how the temporary paint would hold up to foul weather, so what a better place to test it than at Cleveland Stadium, being known for its harsh and extreme weather. The paint proved effective and held through 3 days of rain before the event. When it came time to remove the paint from the field, water pressure was applied with a spray hose hooked to the sprinkler system and a light brush with a broom removed the paint effectively. It is possible to change a field over from football to baseball or football to soccer without having unsightly lines and logos cluttering up the field.

No longer can field-marking paints be considered a paint companies' scrap or reworked material. The manufacture and use of field marking paints has changed and advanced considerably in the past several years. Field marking paints have become more technologically advanced to provide for easier application, brighter, cleaner colors, and greater compatibility with the environment.

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Mark Whitlam is president of Whitlam Paint, 800-321-8358.



No longer can field-marking paints be considered a paint companies' scrap or reworked material.



PAINT FROM TRAILER

You can paint your field with any garden tractor by using the ProSpray Trailer from Newstripe. A universal hitch allows the self-contained spray trailer to be connected to almost any small tractor or maintenance vehicle that's up to 60-in. wide.

The ProSpray has two 12-gal. tanks with continuous paint agitation pressurized by either carbon dioxide or an engine and compressor. A bi-directional spray head mounted to a pneumatic swivel caster produces consistent 2-6 in. wide lines in one pass on any terrain, says Newstripe. A handgun with 12-ft. hose is included for stencil work.

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WHEN IT HAS TO BE PERFECT

For grounds maintenance professionals, Becker Underwood's Green Lawnger turf paint provides an effective, environmentally friendly, proven alternative to the problem of discoloration of worn, overplayed, or otherwise stressed turf.

Green Lawnger isn't a dye; rather, it is a permanent green pigment, containing no hazardous chemicals, heavy metals, or any other inert ingredients harmful to turf. Formulated for a rich, natural green color, Green Lawnger keeps turf looking fresh and resists wear brilliantly for 10-14 weeks, or until mowing removes the treated surfaces. It can be applied with a variety of different types of sprayers and is available as a liquid concentrate. Depending on the particular ratio of Green Lawnger to water, the intensity of color will vary, so color depth and coverage is always within the applicator's control.

Grounds maintenance professionals in the athletic community also appreciate Green Lawnger's versatility and ease of application. Whether blending in worn areas of stadium turf, brightening stressed or overplayed fields, or keeping dormant grass vivid all season, Green Lawnger is part of many sports turf maintenance regimens, and is key in preparing surfaces for major events.

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CUT LABOR COSTS

The field crew of Norfolk Public Schools, is enjoying a much more pleasant job with field marking, thanks to their TruMark RS-500.

Mark Nathan, one of the crew members, performed field tests on the first production model. "Our walk-behind field painters were worn out, the job was tedious and required a lot of walking to keep our six fields painted. The second day that I tested the RS-500, I knew we had to have one. I'm amazed at our line quality, especially considering that I'm running at 250-280 feet per minute. We can layout and paint a new football field in two hours, and reline a field in 40 minutes. Our athletic director has had a

lot of compliments on the appearance of our fields," says Nathan.

Man-hours were reduced by more than 50 percent using the RS-500 with its 40-gal. capacity and twin Shur-Flo pumps. The RS-500 has a 14.5-hp Briggs & Stratton gas engine and a four speed manual transmission.

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STMA winner uses Game Day

Don Skeens, grounds director of Glynn County, GA, Board of Education has been using Game Day athletic field marking paints since 1995 on all of his athletic playing and practice fields. "We are extremely pleased with the quality of the field marking paint. In addition to the excellent pricing, we have found the paint to be quick and easy to mix in the appropriate portions, fast drying, and very durable," says Skeens.

A sports turf professional that takes pride in the appearance of his fields, Skeens was awarded the STMA's 1998 High School Football Field of the Year Award. "For a field to look its best, the lines have to be bright and crisp, and the colors vibrant and true. Game Day delivers custom colors on time and



matched to the team logos. The concentrated formula of 8010 Bright White allows us to dilute with water to help stay within our budget. The durability of the paint allows us to paint several days before our games, and the grass always grows back vibrant and healthy. I highly recommend Game Day field marking paint for any

athletic field, at any level."

Joe Anderson, co-chair of Suntec Paint and developer of Game Day, says, "We specifically formulated Game Day to be used on athletic fields. It is environmentally friendly, contains no harmful products, and is easy to use."

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PAINT FOR TURF

Game Day athletic field marking paint is specifically formulated for the sports turf professional that demands the best in quality and service at a reasonable price. Game Day 8010 Bright White is used by professional

teams, universities and colleges, high schools, cities and municipalities, and parks and recreation departments to stripe and decorate their playing fields.

Game Day 8010 is environmentally friendly and contains no ingredients that are harmful to the grass. Its concentrated formula allows the user to dilute with water to achieve the level of brightness desired. It is easy to mix and apply, and clean up is quick with soap and water.

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SPRAY FROM CANS

Franklin Paint Co. developed its Game Day product in response to customers who wanted to spray paint directly out of the cans to cut mixing time. This product is just stir and spray.

Franklin's Winning Streak water-soluble paint has been their flagship product for more than 40 years, and now the Winning Streak Premium product is used by 60 percent of their customer base, including by the New England Patriots and Harvard.

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COACH-INVENTED MEASURING TOOL

Craig Milburn is an athletic director and coach who invented a method of measuring and setting up fields called the E-Z Right. The pre-marked measuring device eliminates tapes for laying out fields. Made of

clear-coated, 1/4-in. aircraft cable with looped ends and color-coded marks for all your necessary measurements, it comes in a roll-up reel. The kit includes two stakes and instructions.

"With this product we had no problem setting up and maintaining lines for the six fields the Giants needed. The simplicity and ease of using E-Z Right saved us countless hours. We now use it to set up and maintain our practice and Division II game fields; the accuracy results in near perfect lines," says Rich Kopp, director of operations, New York Giants Summer Camp, Albany, NY.

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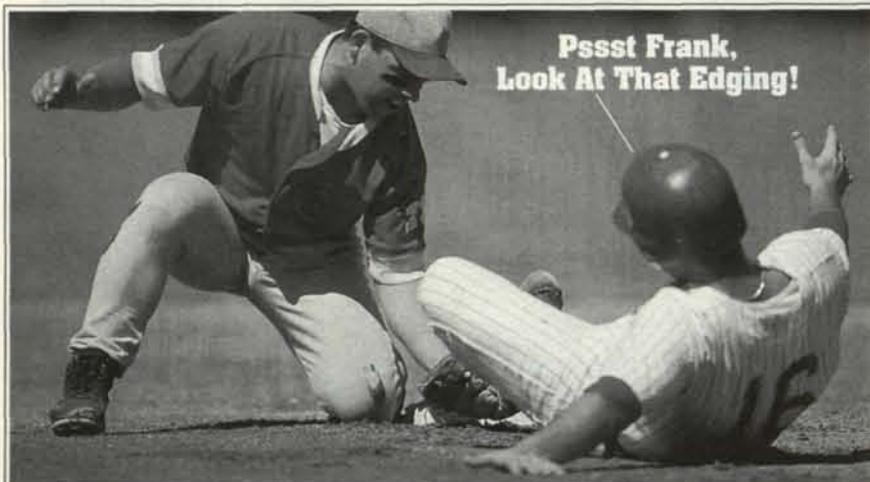
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SMITHCO'S LINER

The new Smithco Top Liner V offers five exclusive features that make lining easier and more accurate, says the company. First there's the Eaton hydrostatic drive that is quiet and low maintenance; and, two spray boxes, front- and side-mounted, featuring opposing double-tip spray nozzles for better paint coverage, optimum agitation, and application brightness.

An electric clutch and Tee-Jet electric foot switch make it easier to control painting, says Smithco, and a Z-gate shifter ensures accurate speed and stays where you put it.

Also new from Smithco is the Line Star, a walking liner that features hydrostatic drive that eliminates problems caused by compressors, pumps, belts, etc.

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LOOKING GOOD

Making you look good is what Broyhill products can do for your facility. This Kombi line marker is a self-contained, self-cleaning, walk-behind paint line-marking system, featuring a 5-gal. poly tank, 8-in. fill and strainer basket, 1.5-gal. rinse tank, 12-v diaphragm pump, three-position marking shoe mounts, and adjustable line width (1 1/2- to 4 in.).



Other Broyhill products include Fastliner, a self-cleaning line marker that easily attaches to Broyhill's Highlander, John Deere's Gator, and Club Car vehicles and can operate at speeds up to 15 mph. Fastliner Concentrated Paint makes brilliant white lines even on poor surface conditions, says the company, and the concentrate dilutes 5:1 while the mixture stays in suspension and can remain in tanks of Kombi or Fastliner up to 14 days (remix and resume painting).

The Starliner large poly hopper saves refilling time of marble dust. Stainless steel frame, brush auger helps feed product evenly, and 4-wheel design allows for no gate operation, and wind skirt.

800-228-1003, x34

For information, circle 173



MARKING MACHINE

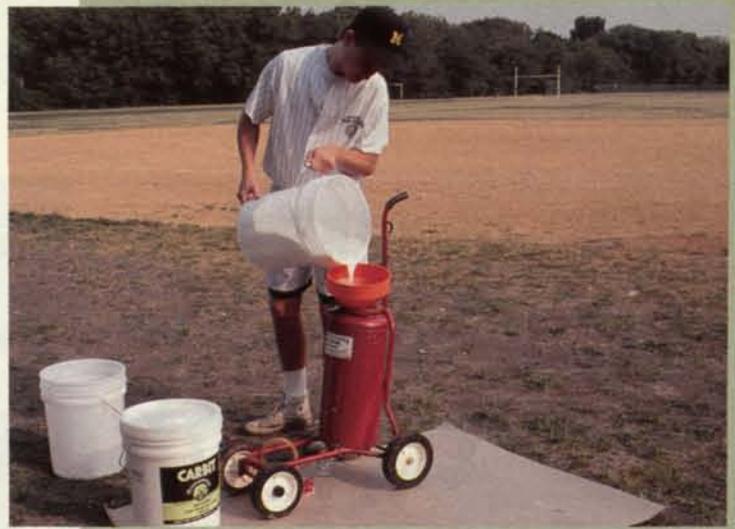
Newstripe has added the NewRider 2000 to its extensive line of field marking and maintenance equipment. The NewRider's

55-gal. tank can paint up to 22,000 feet of 4-in. line, which is the equivalent of four football fields, says Newstripe, as well as line up to 25,000 feet per hour.

The unit has an all-welded structural steel chassis, 10-hp commercial grade engine, dual paint pumps, and hydrostatic transmission. It features center and side-mounted dual spray heads, seat-based operator controls, rear hitch, and dual in-line filters. The NewRider 2000 comes standard with a handgun for stencil and other special painting needs.

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FACTORY-DIRECT PRICING

Carbit Paint has manufactured industrial coatings and specialty products since 1925. "Carbit Natural" is a popular line of water-based line marking products for natural and artificial turf. The company says these products are finely milled to prevent clogging and are concentrates, so that they can be reduced to give extended spreading rates without sacrificing hiding power.

The product line is nontoxic and washes with soap and water, and is formulated to resist the damaging effects of sun, rain, snow, ice, foot traffic, and brushing.

Carbit Natural is sold and shipped directly to users, which enables them to get factory-direct pricing.

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ELECTRIC FERTILIZATION

TechTurf™ has developed a computerized electronic fertilization system that works with any irrigation system. The two basic components, a digital electronic flowmeter and electronic metering pump, work together to dispense the exact water-to-fertilizer ratio needed, regardless of water pressure or flow rate, says the company. No operator programming is required.

Unlike other systems, this system measures the water flow rate up to 20 times per second and automatically adjusts the chemical feed rate to keep the ratio precise. The systems are available in main water line sizes of 1-in. (pictured) and up, and chemical tanks of 7 1/2 to 300 gal.

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BRIGHT WHITE

Pioneer's® BRITE STRIPE athletic field marking paint produces lines up to 400 percent brighter than standard paints under UV lights for night games, thanks to its exclusive formulation of Halogen 2000™ and OPTIWITE™ optical brighteners. The extra bright look not only ensures compliments but results in more accurate spotting of field positions for all, says Pioneer.

BRITE STRIPE can be applied with any bulk paint striper and dries ready to play in less than 1 hour. Custom color blending is available in addition to 16 standard colors, to make team logos pop off the field.

800-877-1500

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