PreMark®

PREFORMED THERMOPLASTIC
BICYCLE & PEDESTRIAN MARKINGS

ENNIS-FLINT®

A TRAFFIC SAFETY SOLUTIONS COMPANY

Durable pavement markings are something to smile about! **For the municipality** it saves money by stretching budget dollars related to maintenance costs...**for the applicator** it saves time and is easy to apply...**for the roadway user** it provides proper guidance for safer travel... **for the engineer and planner** it provides a benchmark for specifying materials with proven performance and value. **It** is a preformed thermoplastic pavement marking.

Visible pavement markings make a huge difference in the safety, purpose, and performance of pedestrian and bike lane marking programs. Pavement markings should not be an afterthought; rather, consideration for materials to use on your next pedestrian or bike lane project should be part of the initial plans. Whether you're a member of a pedestrian and cyclist organization advocating for a safe place to walk, run, and ride or an individual responsible for specifying materials, designing, building or maintaining that safe place, Ennis-Flint is here to partner with you. Ennis-Flint provides durable products that enhance the safety and guidance for an ever-growing roadmap of streets, trails, lanes, intersections, and boulevards. All shared roadway users need to clearly see and quickly acknowledge the defined areas of travel for motorists, pedestrians, cyclists, and transit users.

That's why we've created this catalog of pedestrian and bike lane markings and comparative information to help you choose the right symbols and materials that are built to last...*preformed thermoplastic*.

Ennis-Flint's commitment to safety is reflected in the quality and durability of preformed thermoplastic pavement markings manufactured at our own ISO-certified facility in Thomasville, North Carolina. Ennis-Flint also offers specialized coatings for preferential colorized lanes. Visit www.ennisflint.com for the complete portfolio of bike lane products.

PreMark® by Ennis-Flint

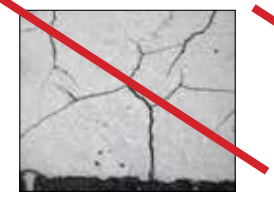
Preformed Thermoplastic VS. Other Marking Materials*

It just looks better and lasts longer.

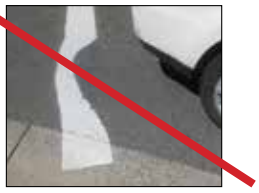
- Durability - lasts 6 to 8 times longer than paint
- At-a-glance recognition of uniform markings along a specified bike route
- Crisp edges; consistent appearance
- Compliance with Federal and local regulations
- Apply any time of year with a propane heat torch
- Retroreflective and anti-skid elements added at time of manufacturing to meet specifications and consistent quality control

Paint typically used with a stencil leaves a broken image and wears much quicker.

Cold plastic tape's bond performance is minimized especially in cold weather climates



Hot-applied thermoplastic often results in "alligator" cracks, roughness around the edge, and cumbersome using hand-liner with stencils for symbols and legends.



At near-intersection applications subjected to vehicular use, **cold plastic tape** tends to shear with heavy turning traffic.

**Minimum temperature restrictions for application in cold weather*

Life Cycle Performance and Savings with PreMark® Bike Lane Markings

EACH PHOTOGRAPH TAKEN AFTER ONE YEAR OF SERVICE

Preformed Thermo after one year

Preformed Thermoplastic
Block Contrast Marking
Applied cost approximately $375
(includes material and application)

Paint after one year

Waterborne Paint
Applied cost approximately $150
(includes material and application)

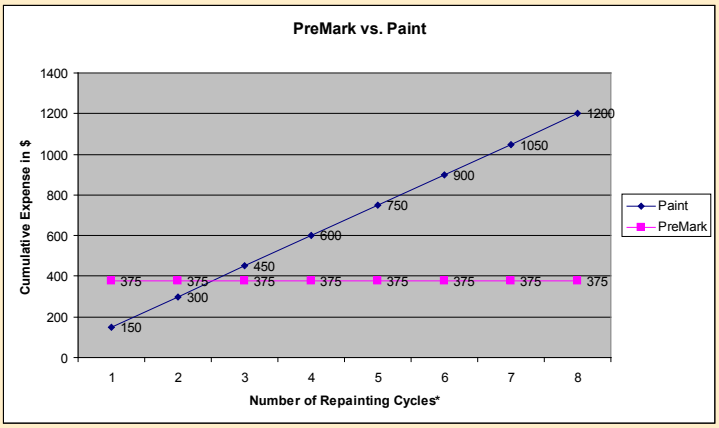
Cold Tape after one year

Cold Plastic Tape
Applied cost approximately $200
(includes material and application)

Three different pavement marking materials were applied along a bike route in Boston, MA at approximately the same time frame. The photographs shown above provide a visual comparison of performance and durability after one year of service.

The advantages of preformed thermoplastic are evident with the block contrast marking completely intact and easily identifiable. With an expected life cycle of 6 to 8 times longer than paint, preformed thermoplastic provides long-term savings but, most importantly, an extended service life and effective safety measure.

When costs for mobilization, lane closures, adminstrative costs, and application costs are factored in for each repainting cycle, the long-term savings and performance of using preformed thermoplastic proves to be the right choice.



** Based on applying a single bicycle symbol marking.*

PreMark® by Ennis-Flint

Consider the advantages of using PreMark® preformed thermoplastic pavement markings:

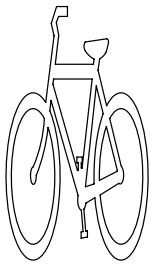
- Durable; lasts 6 to 8 times longer than paint
- Retroreflective with glass beads intermixed throughout the material so as the marking wears new beads are exposed
- ViziGrip® optimizes skid resistance and retroreflectivity
- 90-mil thicknesses for bike lane symbols minimizes "rumble" effect for the cyclist
- Formulated with highest quality resin, binder, glass beads, and pigment systems to provide optimal field performance; no "alligator" cracking as with hot-applied thermoplastic
- Indents in the surface of material are heating indicators that provide a visual cue during application that the material has reached a molten state indicating satisfactory adhesion and proper bead embedment.
- Manufactured in an ISO 9001:2008 facility for consistent thickness and composition as opposed to being blended on-site
- No minimum road or ambient temperature requirements for application. Preheating the road surface is not required.
- One year shelf life allows broader options for inventory management
- Modified easily in the field with razor knife or heavy duty scissors if required
- Easy to repair if road or utility maintenance requires a portion of the marking to be removed
- Sustainable product with a small environmental impact. Recycled materials make up 60% of the product and 29% of the components are rapidly renewable materials, primarily from pine trees. Other natural resources from cotton, sunflowers, and soya are also used in manufacturing.
- Material is pre-cut and ready to use out of the box. Simple application with propane heat torch; does not require major capital investments in equipment.

Regulatory Markings

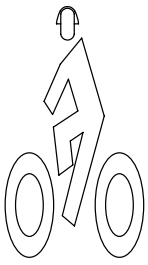
Section 9C.02 *General Principles* of the 2009 MUTCD states "markings used on bikeways shall be retroreflectorized." The Guidance statement reads,"...consideration should be given to selecting pavement marking materials that will minimize loss of traction for bicycles under wet conditions." PreMark® with ViziGrip provides this safety measure.

Standard FHWA Designs

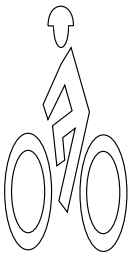
Bike lane symbols are available in 90-mil thickness.
When ordering bicycle symbols, please specify left- or right-facing.



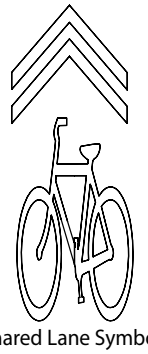
Bicycle Symbol
(3'4"w x 6'h)
Item 89230576HS



Bicycle Rider
(3'4"w x 6'6"h)
2004 SHS Book
Item 89230524HS



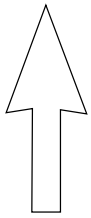
Bicycle Rider
(3'4"w x 6'h)
2009 MUTCD
Item PM602006



Shared Lane Symbol
(3'4"w x 9'4"h)
Item PM600833VG

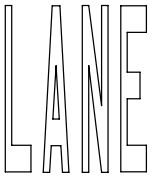
Bicycle Loop
Detector
(1'1"w x 3'7"h)
Item 89230577HS

Straight Arrow
(24"w x 6'h)
7" stroke
Item PM602005



Straight Arrow
(27.6"w x 6'h)
10" stroke
Item 89330268HS

BIKE Legend
(3'2"w x 4'h)
Item 89150248



LANE Legend
(3'6"w x 4'h)
Item 89150213

ONLY Legend
(3'1"w x 4'h)
Item 89150202

Block Contrast Markings

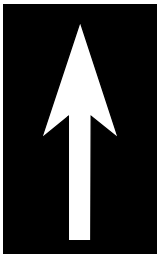
PreMark® Block Contrast Markings provide even greater visibility and durability for concrete and faded asphalt applications. The white symbols are ViziGrip® which optimizes skid resistance and retroreflectivity while the black background is non-reflective with high-skid resistant elements.

Standard FHWA Designs

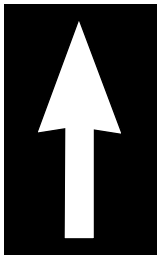
Block contrast markings available in 90-mil thickness.
PreMark® SP Sealer required for application.

PM6902767
Bicycle Symbol
(4'w x 7'h)

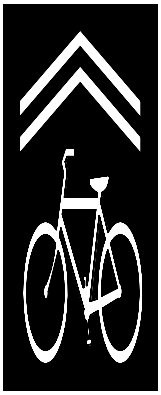
PM6902766
Bicycle Rider
(4'w x 7'h)



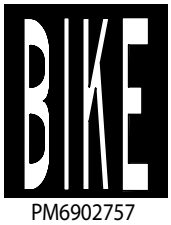
PM6902763
Straight Arrow
(4'w x 7'h)



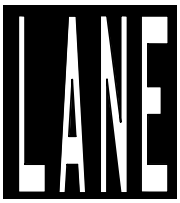
PM600724
Straight Arrow
(4'w x 7'h)



PM6902768L
Shared Lane
(4'w x 10'h)



PM6902757
BIKE Legend
(4'w x 7'h)



PM6902758
LANE Legend
(4'w x 7'h)

PM6902770L
Bicycle Loop Detector
(4'w x 4'h)

PM6902759
ONLY Legend
(4'w x 7'h)

Bike Boxes and Bike Panels

Made with durable PreMark® for use in high-traffic areas subjected to vehicular traffic, the two colors of material are interconnected allowing the user to easily handle and position the marking prior to heating. White symbols are retroreflective. Green portion is available as non-beaded with anti-skid elements on surface and throughout. Solid colored 2' x 3' sheets can be used to fill in areas around the bike box or panels to create colored bike lane treatment.

PreMark® EF Bike Lane Green meets the chromaticity coordinates in the FHWA's Interim Approval for the optional use of green colored pavement in marked bike lanes. See page 6 for details. EF Bike Lane Green available with retroreflective (ViziGrip) or non-reflective (SK: Skid-Only) properties.

Standard FHWA Designs

90-mil thickness. PreMark® SP Sealer required for application.

PM6902757
FHWA "BIKE"
(4'w x 7'h)

PM6902758
FHWA "LANE"
(4'w x 7'h)

PM6902759
FHWA "ONLY"
(4'w x 7'h)

PM6902760
FHWA "STOP"
(4'w x 7'h)

PM6902761
FHWA "XING"
(4'w x 7'h)

PM6902763
Bike Straight Arrow
(4'w x 7'h)

PM6902762L
Bike Turn Arrow
(4'w x 7'h)

PM6902762R
Bike Turn Arrow
(4'w x 7'h)

PM6902764L
Bike Straight
Turn Arrow
(4'w x 7'h)

PM6902764R
Bike Straight
Turn Arrow
(4'w x 7'h)

PM6902767L
Bicycle Symbol
(4'w x 7'h)

PM6902766L
Bcycle Rider
(4i'w x 7'h)

PM6902765L
Bicycle Rider
(4'w x 7'h)

PM6902768L
Shared Lane
Symbol
(4'w x 10'h)

PM6902769L
Shared Lane
Symbol
(4'w x 10'h)

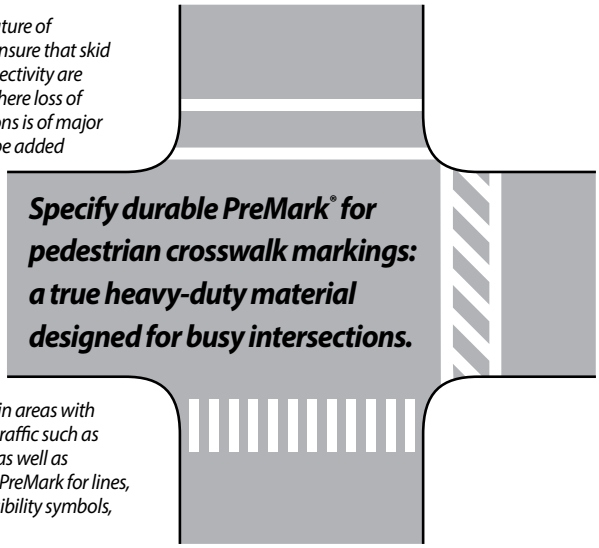
PM6902770L
Bike Loop Detector
(4'w x 4'h)

PreMark® by Ennis-Flint

Pedestrian Markings

ViziGrip® is a unique feature of PreMark® designed to ensure that skid resistance and retroreflectivity are optimized especially where loss of traction in wet conditions is of major concern. ViziGrip® can be added to any of the lines, legends, arrows, and other designs in 90-mil and 125-mil thicknesses.

For enhanced skid/slip resistance, Ennis-Flint recommends using PreMark® with ViziGrip in areas with pedestrian and cyclist traffic such as crosswalks, bike paths as well as parking facilities using PreMark for lines, legends, arrows, accessibility symbols, and word legends.

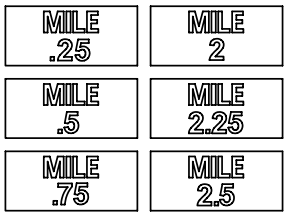


Specify durable PreMark® for pedestrian crosswalk markings: a true heavy-duty material designed for busy intersections.

Pedestrian Symbol
(27"w x 4'h)
Item 89230235
(4'2"w x 8'h)
Item 89230226HS

PED Legend
(5'4"w x 8'h)
Item 8130114
(2'8"w x 4'h)
Item 89150214HS

XING Legend
(6'4"w x 8'h)
Item 8130107
(3'2"w x 4'h)
Item 89150207HS



Trail Mileage Markers
Example shown here:
various sizes and shapes available.

Hiker Symbol
(4'h)
89230123

Are your pavement markings compliant with the FHWA standard symbols?

Ennis-Flint recommends to specifiers and buyers of pavement markings to select designs that are compliant with the FHWA standards as shown in the *Manual on Uniform Traffic Control Devices* (MUTCD) and/or the supplemental publication, *Standard Highway Signs and Markings*.

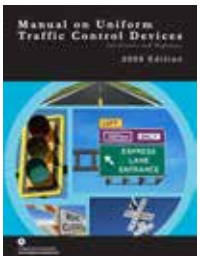
This catalog of pedestrian and bike lane markings from Ennis-Flint includes bike lane symbols, arrows, and legends that are standard FHWA designs at the time of printing this publication. In the event new or different designs are released from the FHWA, Ennis-Flint will make those designs available in preformed thermoplastic.

Designs not currently included in the MUTCD or related FHWA publications are not considered traffic control devices. Procedures for experimentation using markings that are not adopted by these publications are provided by the FHWA.

The following excerpts are reprinted from the 2009 MUTCD,

Section 1A.07 Responsibility for Traffic Control Devices
Standard: The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency or the official having jurisdiction, or, in the case of private roads open to public travel, with the private owner or private official having jurisdiction. 23 CFR 655.603 adopts the MUTCD as the national standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel (see definition in Section 1A.13). When a State or other Federal agency manual or supplement is required, that manual or supplement shall be in substantial conformance with the National MUTCD. 02 23 CFR 655.603 also states that traffic control devices on all streets, highways, bikeways, and private roads open to public travel in each State shall be in substantial conformance with standards issued or endorsed by the Federal Highway Administrator.

Section 1A.10 Interpretations, Experimentations, Changes, and Interim Approvals
Standard: 01 Design, application, and placement of traffic control devices other than those adopted in this Manual shall be prohibited unless the provisions of this Section are followed. Support: 02 Continuing advances in technology will produce changes in the highway, vehicle, and road user proficiency; therefore,



...requests for any interpretation, permission to experiment, interim approval, or change shall be submitted electronically to the Federal Highway Administration (FHWA), Office of Transportation Operations, MUTCD team, at the following e-mail address:

MUTCDofficialrequest@dot.gov

portions of the system of traffic control devices in this Manual will require updating. In addition, unique situations often arise for device applications that might require interpretation or clarification of this Manual. It is important to have a procedure for recognizing these developments and for introducing new ideas and modifications into the system. Standard: 03 Except as provided in Paragraph 4, requests for any interpretation, permission to experiment, interim approval, or change shall be submitted electronically to the Federal Highway Administration (FHWA), Office of Transportation Operations, MUTCD team, at the following e-mail address: MUTCDofficialrequest@dot.gov.

FHWA Issues Interim Approval for Green Bike Lanes
In a memo published April 15, 2011, the FHWA announced *Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes.* Such approvals allow the interim use, pending official rulemaking, of a new traffic control device. Interim approvals are based on the results of successful experimentation, studies, or research, and an intention to place the new or revised device into future rulemaking processes for MUTCD revisions. Jurisdictions must submit a written request to the FHWA indicating whether a blanket jurisdiction-wide approval is being requested or must state locations where the device will be used. A State may request approval for all jurisdictions in that State. The FHWA has specified daytime and nighttime chromaticity coordinates for the design of the green color. (Ennis-Flint's EF Bike Lane Green complies with the FHWA green "color box".)

To view and access the MUTCD in its entirety, visit **http://mutcd.fhwa.dot.gov/index.htm.**

ENNIS-FLINT

ENNIS-FLINT®

A Traffic Safety Solutions Company




Ennis-Flint is a worldwide leader in the traffic safety and pavement marking industry providing the most comprehensive lineup of pavement marking solutions on the market today. Ennis-Flint believes saving lives is a serious business. Our focus is providing not only the best products, but the best sales and support staff to help guarantee your success every step of the way for your next project. We believe in providing the most cost-effective, fit-for-purpose solutions backed by application training and after-sales support that has been recognized as some of the industry's best. Our commitment to traffic safety goes beyond the products and services we offer to involvement in local, national and international traffic safety committees and organizations.




From traditional paints and thermoplastics to high-performance formulas and plural components for roadway striping and preferential lane treatments as well as preformed thermoplastic for transverse markings, streetscape crosswalks and traffic calming treatments, and custom horizontal surface signage, you can find Ennis-Flint products on roads and highways, taxiways, runways, parking lots and in all kinds of commercial, contractor, governmental, industrial, airport and architectural settings.

Headquartered in Thomasville, North Carolina and with manufacturing facilities located in the United States, Canada, Australia and Europe as well as strategic worldwide sales locations, Ennis-Flint's products help motorists, cyclists, pilots, and pedestrians move in the right direction...safely.


www.ennisflint.com

ENNIS-FLINT®

A Traffic Safety Solutions Company

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