Hydrophast®

Fast Dry Waterborne Traffic Paint

Product Data
Version 2.0

Product Type:	**Standard Fast Dry Waterborne**	
Product Codes:	**2036**	**2037**
Product Colors:	**White**	**Yellow**
Fed-STD-595:	**37925**	**33538**

Product Description:

Lead free, fast drying, 100% acrylic waterborne traffic paint. Conforms to performance specifications referenced in Federal Specification TT-P-1952E Type I & II, Federal Specification TT-P-1952F Type I & II, & many other state & federal specifications.

Product Advantages:

- Low VOC- below 100 g/L
- Fast dry for easy traffic control
- For use on both concrete & asphalt
- Works well over various sealcoat applications
- Excellent bead retention (can be used without)
- Great for symbols, legends, & lane marking
- Approved for use in CT, ME, MA, NH, NY, RI, VT
- Methanol free

Surface Conditions:

Surfaces should be cured, clean, dry, sound, and free from oil, grease, antifreeze, sand, and other debris and/or chemicals. Loose & lifting paint should be removed prior to application. Existing coatings or sealers may interfere with paint adhesion. New concrete & asphalt should be completely cured before applying (30 days for concrete, 14 days for asphalt is recommended). Check with Franklin Paint technical for more information. *If surface condition cannot be determined, a test stripe should be applied in an inconspicuous location.*

Application:

Formulated for use with airless or conventional air atomized spray equipment. For best results, apply when air and surface temperatures are above 50°F and relative humidity is below 85%. Cold paint may be heated to 110°F for desired flow properties. Heating waterborne paint *will not* accelerate dry time.

Physical Properties:

Coverage/Gal (15 mils wet, 4" line)	320'
Dry Time (ASTM D-711)	<9 mins
No Track Time (15 mils wet, 77°F, 45-55% Relative Humidity, 9 lbs. glass beads/gallon)	<75 seconds
Dry Opacity (Hiding, contrast ratio)	>0.97
Viscosity (Krebs units)	85-90
Density (lbs./gal)	13.8-14.2
Directional Reflectance (Cap Y)	>90 (white) >54 (yellow)
VOC g/L	<100
% Total Solids by Weight (Non-Volatiles)	77.5 minimum
% Total Pigment by Weight	60.0-62.0
% Vehicle Solids by Weight	43.0 minimum

Cleaning:

Wet paint may be cleaned with water. Dried paint is very difficult to remove.

Storage & Shelf Life:

Store in a cool dry area, indoors, and out of direct sunlight, ideally at 60-70°F. Minimum 12 months shelf life when stored unopened, at these conditions. KEEP FROM FREEZING!

Limitations:

- Never mix waterborne paint with any other paint products.
- Not recommended for use over silicone sealers.
- Do not apply when rain is in forecast.
- Do not apply when temperatures are expected to fall below 32°F within 6 hours of application.
- Low temperatures & high humidity can slow dry.

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POLY-CARB

TECHNICAL DATA SHEET

MARK-55.3

100% SOLIDS PAVEMENT MARKING SYSTEM

DESCRIPTION

MARK-55.3 consists of a two-part 100% solids epoxy available in traffic safety colors to be used as a long life pavement marking system. A long life, highly reflective surface is obtained by broadcasting reflective glass beads immediately after the application of **MARK-55.3** system. **MARK-55.3** provides a long-term performance on both asphalt and concrete surfaces.

RECOMMENDED USES

* Long life and high nighttime reflectivity application as a safety line marking on roads and highways.
* Industrial line marking requiring high abrasion resistance.
* Long life line marking for food processing and other chemical plants requiring high chemical resistance to corrosive chemicals.

FEATURES

* High nighttime (wet and dry) reflectivity and its retention of any pavement marking system.
* High abrasion resistance and holds well under industrial and highway traffic.
* Completely impervious to salt, grease, oils, acids, alkalis, and common solvent spillage.
* Bonds well to clean, dust free asphalt and concrete surfaces.
* Good retention of high density, high reflectant glass beads providing constant shine during the entire life of the system.
* Available in all safety colors.
* Quick setting, allowing traffic to be opened without delay.
* Capable of curing at temperature conditions of 35°F and above.
* Nonflammable, non-pollutant and low toxicity.
* 100% solids, hence, no loss or shrinkage in the mil thickness during drying or curing of the coating.
* Applicable on freshly placed asphalt within hours.

TECHNICAL DATA

Properties of Part A and Part B

	PART A*	PART B
Color	White or Yellow**	Amber
Mixing Ratio	2 volumes	1 volume
Percent Solids	100%	100%
Shelf Life	1 year	1 year

(Part A contains TMPTA (Tri-Methylol Propane Tri-Acrylate) and other multi-functional monomers. ** Custom safety colors available.)*

ISO 9001: 2000 Certified

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LIMITED WARRANTY: POLY-CARB, INC. warrants to the purchaser of this product that the product is free from manufacturing and design defects. All breach of warranty claims must be submitted to POLY-CARB, INC. the earlier of either within fourteen days of discovery of the defect or expiry of product shelf life. The purchaser's remedies are limited to replacement of the product.

POLY-CARB, INC. SPECIFICALLY DISAVOWS ANY OTHER REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, OR LIABILITY RELATING TO THE CONDITION OR USE OF THE PRODUCT, AND IN NO EVENT SHALL POLY-CARB BE LIABLE TO PURCHASER, OR ANY THIRD PARTY, FOR ANY DIRECT OR INDIRECT CONSEQUENTIAL OR INCIDENTAL DAMAGES.

TECHNICAL DATA

Properties of Mixed Part A and Part B

Gel Time 25°C (75° ± 2°F)	Less than 5 minutes (100 gms.)	
Track Free Time @ 25°C (75° ± 2°F)	15 - 20 minutes	ASTM D-711
Final Cure 25°C (75° ± 2°°F)	8 - 12 hours	

Properties of Cured MARK-55.3

Compressive Strength	13,000 - 15,000 psi	ASTM D-695
Tensile Strength	6,000 - 9,000 psi	ASTM D-638
Shore D Hardness	75 – 95	ASTM D-2240
Wear Index, 1,000 gms, 1,000 cycles, CS-17 wheel	Less than 80	ASTM C-501
Adhesion to Concrete	100% concrete failure	ACI-503

METHOD OF APPLICATION

MATERIAL CONTAINERS SHOULD ALWAYS BE STORED INDOORS IN A MINIMUM TEMPERATURE RANGE OF 68°F-85°F (20°C – 30°C) AND FOR AT LEAST 24 HOURS PRIOR TO USAGE THE MINIMUM STORAGE TEMPERATURE SHOULD BE 75°F-85°F (24°C – 30°C) TO ENSURE PROPER MIXING AND APPLICATION PROPERTIES.

Surface Preparation: The surface must be free from oil, grease and any other contaminants. Old paint, sealers and curing compounds shall be removed by scarification or shot blasting methods. For best results the surface should be dry. On new concrete surface, shot blasting or sandblasting is recommended to remove curing compound and laitance.

Application: For proper application of **MARK-55.3 System**, the epoxy pavement marking compounds shall be applied through machinery designed to precisely meter the two components in the ratio of proportion recommended in the Technical Data. This equipment shall also be designed to produce the required amount of heat at the mixing head and gun tip specified further in this specification and to maintain those temperatures within the tolerances specified.

Repairs and Corrections: In case of poor mixing and inaccurate proportions due to equipment problems, the entire bad surface shall be completely cleaned to the bare substrate, either by grinding or sandblasting. No capping shall be allowed on the bad spots without a complete removal.

Application Temperatures:

A. ***Individual Components:*** Before mixing, the individual component shall be heated to the following temperatures.

Component "A"	80°F (26.7°C) to 140°F (60°C)
Component "B"	80°F (26.7°C) to 140°F (60°C)

The upper limit of this specification is the maximum temperature recommended under any circumstances.

B. ***Mixed Material:*** After mixing the recommended application temperatures for the combined material at the gun tip shall be as follows:

Mixed Material	80°F (26.7°C) to 140°F (60°C)

Application Equipment:
The equipment shall have a system capable of spraying both yellow and white epoxy listed in the manufacturer's recommended proportions and is mounted on a truck of sufficient size and stability with an adequate power source to produce lines of uniform dimension and prevent application failure. It shall be capable of placing stripes on the left and right sides, and of placing two (2) lines simultaneously with either line in a solid or intermittent pattern in yellow or white and of applying glass beads at a rate of at least 25 pounds per gallon.

All guns must be in full view of operators at all times. The equipment shall be provided with a metering device to register the accumulated installed footage for each gun each day. Each vehicle shall include at least one (1) operator who shall be a technical expert in equipment operations and epoxy application techniques. A solvent free impingement-type spraying head or a minimum 24" length of kinetic tube mixing head is required for proper mixing of the two (2) components prior to its application. Certification of equipment and type meeting these specifications must accompany each bid.

COVERAGE

Coverage per gallon in mils is as per the following table:

Concrete/asphalt pavements	20 mils min.
Open grade pavement	25 mils min.

	Width of the Line	Thickness of the Marking Lines					
		5 Mils	10 Mils	15 Mils	20 Mils	25 Mils	30 Mils
MARK-55.3 Ln. Ft./Gal.	4"	960'	480'	320'	240'	192'	160'
	6"	640'	320'	214'	160'	128'	107'
	8"	480'	240'	160'	120'	96'	80'
Glass Beads Lbs./Ln. Ft.	4"	.026	.052	.078	.104	.130	.156
	6"	.039	.078	.117	.156	.195	.234
	8"	.052	.104	.156	.208	.260	.312

(Coverage is greatly dependent on the porosity of the surface. As porosity increases, the coverage decreases.)

CLEAN UP

Cleaning of all equipment and tools is recommended before the gel time of the system expires. **MARK-306** is specially designed for this purpose. A lacquer solvent, Xylene, Toluene, Methylene Chloride can also be used for the same purpose.

PACKAGING

50 gallon containers	150 gallon unit
5 gallon pails	15 gallon unit

LIMITATIONS

* **MARK-55.3** System shall not be diluted with any solvent for this will interfere with proper curing and/or the ultimate performance of the system.
* The surface shall be fairly dry at the time of application.
* The surface and air temperatures shall be above 35°F for proper curing of the epoxy system.
* Part A contains highly reactive TMPTA (Tri-Methylol Propane Tri-Acrylate) and other multi-functional monomers, which may undergo polymerization and gelling if subjected to prolonged periods of exposure at high temperatures exceeding 120°F.

IMPORTANT NOTE

With this technical data sheet, we are making every effort to communicate to you, our valued customer, the proper procedures, properties and limitations of this product to ensure you a successful installation. This is considered to be an exotic material, which is controlled by temperature, proper mixing, surface preparation, and other application conditions. It is most IMPERATIVE that these instructions are understood by all and followed correctly. It is our appeal to you, in case of the slightest doubt, that you call our office and express your concerns to one of our technical service representatives. This action will ensure that all doubts, discrepancies, or misunderstandings are cleared up to aid in the completion of a successful application. Please call us toll free at 1-800-CALL MIX. We are ready to serve you.

CAUTION

PLEASE READ AND THOROUGHLY UNDERSTAND THE MATERIAL SAFETY DATA SHEET PROVIDED WITH EACH ORDER PRIOR TO BEGINNING WORK. THIS IS INTENDED FOR YOUR SAFETY.

Direct contact with the skin should be avoided as it can cause skin irritation In the event of direct contact with the eyes, flush immediately with plenty of water and report to a physician. FATAL IF TAKEN INTERNALLY. KEEP AWAY FROM OPEN FLAME AND FROM FREEZING TEMPERATURES.

KEEP OUT OF REACH OF CHILDREN

The VOC contents per EPA test method 24 (40 CFR 59) does not exceed 150 g/l

EPOPLEX

LS50

PRODUCT DATA

PRODUCT DESCRIPTION

Epoplex LS50 is a two-component, 100% solids epoxy coating material designed as a rapid setting highway marking coating that provides durability and corrosion and abrasion resistance. Epoplex LS50 is formulated to provide a simple volumetric mixing ratio of two volumes of Component A to one volume of Component B.

USES, APPLICATIONS

Epoplex LS50 may be applied to both cementitious and asphalt highway surfaces as a long-lasting striping material for both edging and center line markings.

PRODUCT ADVANTAGES

- 100% solids chemistry
- Low viscosity suitable for spray application
- Long-term abrasion and corrosion resistance
- Excellent bond strength assures good adhesion to a variety of substrates
- Protection against moisture penetration
- Special formulation chemistry for rapid set at a wide range of temperatures
- High ultraviolet light stability
- High reflective qualities

PACKAGING

Component A: Base Resin and Pigmentation
Component B: Activator/Curing Agent

Both components are available in 55 gallon drums and 250 gallon returnable totes.

PHYSICAL CHARACTERISTICS

Percent Solids	100%
Epoxy Equivalent Weight (ASTM D-1652, Method B)	300 +/- 50
Total Amine Value (ERF-25-68)	475 +/- 50
Track Free Time @ 77°F/25°C (ASTM D-711)	10 min. or less (with glass beads)
Adhesion (ASTM D-7234 formerly ASTM D-4541)	> 300 psi (100% concrete failure)
Hardness (ASTM D-2240, Shore D)	Min. 80
Abrasion Resistance (ASTM D-4060, formerly ASTM C-501)	< 80 mg weight loss
Tensile Strength (ASTM D-638)	6,000 psi
Compressive Strength (ASTM D-695)	12,000 psi
Theoretical Coverage	122 sq. ft. per gallon @ 15 mils
Mixing Ratio	2 Parts A to 1 Part B, by volume
Chromaticity (Color) (ASTM D-6628)	within coordinates
Yellowness Indexing (ASTM E-313)	Max. before QUV 8 Max. after QUV 20
Titanium Dioxide (White) (ASTM D-476, Type II)	18-25% (Composition by weight)
Non-Lead Organic Yellow	5-10% (Composition by weight)

STORAGE CONDITIONS

Store both components of Epoplex LS50 in a dry area. Avoid excessive heat and do not freeze. The shelf life is two years in the original, unopened container.

COLOR

Epoplex LS50 is available in highway white, non-lead yellow, and black. Custom colors are available upon request.

IMPORTANT:
Epoplex believes the information contained here to be true and accurate. Information contained here is for evaluation only. Epoplex makes no warranty, expressed or implied, based on this literature. We further reserve the right to modify and change products or literature at any time.

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EPOPLEX

LS50

General Application Specification - Epoxy Pavement Markings

A. EPOXY PAINT MATERIALS

1. Shipment of Materials

The material shall be shipped to the job site in containers that are substantial and shall be plainly marked with the manufacturer's name and address, the color of the material, date of manufacture and batch number.

2. Certification of Compliance

The material manufacturer shall furnish a notarized certification that the material complies with the provisions of this specification. It shall not be inferred that the provisions of a certification of compliance waives state inspection, sampling or testing.

3. Infrared Spectra

A copy of the infrared spectra of each component shall be supplied by the Contractor along with the certification papers.

4. Glass Beads

The Contractor shall furnish certifications which shall include or have attached specific results of tests performed for roundness, refractive index, flow characteristics and gradation. The certifications shall show the quantity and lot number.

B. EPOXY PAINT STRIPING MATERIALS

1. Formulation

The epoxy paint marking material shall consist of a 100% solid, two-part system formulated and designed to provide a simple volumetric mixing ratio of the two components (e.g., two volumes of Part A to one volume of Part B).

2. Composition

The Component A composition shall be within the following limits:

	WHITE	NON-LEAD YELLOW
Pigments		
Titanium Dioxide (ASTM D-476 Type II & III)	18-25%	5-10 %
Organic Yellow		5-10%
Binder		
Epoxy Resin	75-82%	73-77%

3. Epoxide Number

The WPE of the epoxy resin (Compoionent A) shall be 300 +/- 50 as determined by ASTM D-1652 Method B and 250 +/- 50 on a pigment free basis.

4. Amine Number

The amine number of the curing agent (Component B) shall be 475 +/- 50 as determined by ERF-25-68.

5. Toxicity

Upon heating to application temperature, the material shall not exude fumes which are toxic or injurious to persons or property.

6. Viscosity

Formulations of each component shall be such that the viscosity of both components shall coincide (within 10%) at a recommended spray temperature.

7. Track Free Time

The epoxy paint pavement marking material, when mixed in the proper ratio and applied at 15 mils +/- 0.5 mil wet film thickness at 75°F +/- 2°F and with the proper saturation of glass spheres, shall exhibit no tracking time of 10 minutes or less when tested according to ASTM D-711.

8. **Curing**

   The epoxy paint materials shall be capable of fully curing under a constant surface temperature of 40°F or above.

9. **Color**

   The initial color for white and lead-free yellow shall fall within the following color box coordinates before and after performing ASTM G-53.

	x	y	x	y	x	y	x	y
White	.355	.355	.305	.305	.285	.325	.335	.375
Yellow	.560	.440	.490	.510	.420	.440	.460	.400

Note: Daytime Chromaticity, 45/0 (0/45) geometry, CIE Illuminant D65 and 2 degree standard observer.

10. **Yellowness Index (ASTM E-313)**

    - Cure 72 hours after sample preparation
    - Take yellow index reading, XYZ C/2°, following 72 hour cure and preceding QUV
    - Maximum index before QUV: 8
    - Place sample in QUV for 72 hours
    - Maximum index after QUV: 20

11. **Directional Reflectance (ASTM D-6628, replaces ASTM E-97)**

    Directional Reflectance after QUV using XYZ Scale D65/2°.

White	Yellow
Minimum: 80	Minimum: 40

12. **Adhesion to Concrete**

    The catalyzed epoxy paint pavement marking materials, when tested according to ASTM D-7234 (formerly ASTM D-4541), shall have such a higher degree of adhesion to the specified concrete (4,000 psi minimum) surface that there shall be a 100% concrete failure in the performance of this test. The prepared specimens shall be conditioned at room temperature (75°F +/- 2°F) for a minimum of 24 hours and a maximum of 72 hours prior to the performance of the indicated test.

13. **Hardness**

    The epoxy paint pavement marking materials, when tested according to ASTM D-2240, shall have a Shore D Hardness greater than 80. Samples shall be allowed to cure at room temperature (75°F +/- 2°F) for a minimum of 24 hours and a maximum of 72 hours prior to performing the indicated test.

14. **Abrasion Resistance**

    The epoxy paint pavement marking material, when tested according to ASTM D-4060 (formerly ASTM C-501) using a Taber Abrader, CS-17 wheels, at 1,000g for 1,000 cycles, shall not have more than 80 mg weight loss. The test shall be run on samples applied at 15 +/- mils to S-16 stainless steel plates, without glass spheres and cured at 75°F +/- 2°F for between 24 and 72 hours.

15. **Tensile Strength**

    When tested according to ASTM D-638, the epoxy paint pavement marking materials shall have an average tensile strength of not less than 6,000 pounds per square inch. The Type IV Specimens shall be pulled at a rate of 1/4 inch per minute by a suitable dynamic testing machine. The samples shall be allowed to cure at room temperature (75°F +/- 2°F) for a minimum of 24 hours and a maximum of 72 hours prior to performing the indicated tests.

16. **Compressive Strength**

    When tested according to ASTM D-695, the catalyzed epoxy paint pavement marking materials shall have an average compressive strength of not less than 12,000 pounds per square inch. The cast sample shall be conditioned at room temperature (75°F +/- 2°F) for a minimum of 72 hours before performing the indicated tests. The rate of compression of these samples shall be no more than 1/4 inch per minute.

C. GLASS BEADS

1. Glass Spheres

Spherical glass beads shall be used as reflective media in LS50. The glass spheres shall be colorless, clean, transparent and free of excessive air bubbles. The surface of the spheres shall not exhibit any scarring or scratching. The refractive index of the glass spheres shall be a minimum of 1.50 as determined by the liquid immersion method at 75°F/24°C. The silica content of the glass spheres shall be a minimum of 60% by weight.

2. Gradation of Glass Spheres

There shall be two gradation types used in the LS50 epoxy pavement marking material. The large glass spheres shall conform to the Type 4 gradation described in the Standard Specification for Construction of Roads and Bridges on Federal Projects FP-96, Section 718.19. The small glass spheres shall conform to the AASHTO M-247 Type 1 Specification.

D. APPLICATION

Equipment

Epoplex shall approve the equipment used for the application of LS50. The equipment shall be capable of spraying both white and yellow epoxy according to Epoplex's recommended proportions and be of sufficient size and stability with adequate hydraulic and air power supplies to produce lines of uniform dimensions. The equipment shall have a high-pressure air blast cleaning system capable of cleaning the pavement immediately prior to applying the markings.

The equipment shall be specifically designed to apply two-component liquid materials through airless static tube or impingement mixing guns in a continuous and/or skip-line pattern. The guns must accommodate plural component material systems with a volumetric ratio of two to one.

The equipment shall be mobile, truck mounted and self-contained. The equipment shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. Truck mounted application units shall be equipped with accessories to allow for the application of legends, symbols, crosswalks and other special markings.

The agency engineer and material manufacturer together may approve the use of a portable applicator in lieu of truck mounted accessories for the application of special markings provided such equipment can demonstrate satisfactory application of reflectorized markings in accordance with these specifications.

E. SURFACE PREPARATION

1. Temperature

LS50 epoxy must be applied only when atmospheric and surface temperatures are 40°F/5°C or higher.

2. Moisture

Pavement surfaces must be clean and dry prior to the application of LS50 epoxy.

3. Miscellaneous Debris

The pavement surface must be free of oil, grease, dirt and dust prior to the application of LS50 epoxy. A grinder or shot blaster is recommended for removal of such surface contaminants prior to material application.

4. New Portland Cement Concrete

The curing compounds must be completely removed from Portland cement surfaces prior to the application of LS50 epoxy. High pressure water-blasting, sandblasting and/or shot blasting are the recommended methods for removing curing compounds.

5. New Asphalt

LS50 epoxy can be applied directly to new asphalt surfaces as soon as the asphalt has cooled and can support the weight of application equipment. The asphalt surface must be free of excess asphalt emulsions and oils to ensure proper adhesion of the markings.

6. Chip and Slurry Seal Coated Surfaces

Slurry seal coats must be completely cured prior to the application of LS50 epoxy. Chip seal surfaces must be free of loose aggregate. A reasonable waiting period to allow vehicles to wear off loose aggregate is recommended.

7. **Removal of Existing Pavement Markings**

Existing pavement markings must be removed prior to the application of LS50 epoxy. The roadway surface should be water-blasted, sandblasted and/or shot blasted until a minimum of 80% of the pavement surface is exposed. Oil based paints and epoxies used as temporary markings must be removed prior to application of LS50 epoxy.

LS50 epoxy may be applied over latex water-based paint applied as a temporary marking, provided these markings were applied at a mil thickness of 10 mils or less. If these water based paint markings were applied over Portland Cement prior to removal of the curing compound, these markings must be removed prior to application of LS50 epoxy.

F. APPLICATION

1. **Film Thickness**

The material film thickness shall vary depending on the condition and type of pavement surface being marked. The applied film thickness, calculated without drop-on glass spheres, shall conform to the following:

Surface Type LS50 Application Rate (1 inch = 1,000 mils)	
Smooth Asphalt or Concrete Surface	20 ± 2 mils
New Smooth Concrete Surface	20 ± 2 mils
New Grooved Concrete Surface	25 ± 2 mils
New Asphalt Surface (Standard Mix)	20 ± 2 mils
Open Grade Friction Course or Stone Matrix Asphalt (SMA)	25 ± 2 mils
Rough Asphalt or Concrete	22 ± 2 mils
Smooth Asphalt or Concrete After Removal of Existing Markings	22 ± 2 mils
Chip Seal	20 ± 2 mils
Slurry Seal	20 ± 2 mils

Applied markings shall have uniform mil thickness and glass bead distribution across the width of the line. The markings shall have crisp distinct edges and clean cutoff at the end of each line.

2. **Drop-On Glass Sphere Application**

Type 1 and Type 4 glass spheres, as described in sections C1 and C2 above, shall be applied to the LS50 epoxy in a double drop operation. Type 4 spheres shall be applied first from the bead dispenser directly behind the epoxy application gun followed immediately by the application of Type 1 beads from a second bead dispenser. The application rates of each of the glass spheres shall conform to the following:

3. **Protection of Newly Installed Markings**

All applied markings shall be protected from traffic and potential tracking while the LS50 epoxy cures. Markings may be saturated with glass spheres to help prevent tracking.

Mils of LS50 Applied	Application Rate of Glass Spheres
20 mils	10 lbs/gallon of Type 1 10 lbs/gallon of Type 4 (Total of 20 lbs per gallon)
22 mils	12 lbs/gallon of Type 1 12 lbs/gallon of Type 4 (Total of 24 lbs per gallon)
25 mils	15 lbs/gallon of Type 1 15 lbs/gallon of Type 4 (Total of 30 lbs per gallon)

IMPORTANT:
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EF Series

PAVEMARK® Hydrocarbon Thermoplastic

PRODUCT DATA

Product Type:	Extrude Hydrocarbon Thermoplastic	
Product Code:	884415	884665
Product Color:	White	Lead Free Yellow
Description:	TM WHT HYD EXTRD	
	TM LF YEL HYD EXTRD	
Specification:	MA M7.01	
Effective Date:	August 15, 2016	

Product Description:
Ennis-Flint's Pavemark brand Hydrocarbon Extrude Thermoplastic Pavement Marking Material is a 100% solids material blend of binder, pigments and glass beads that must be melted to a temperature of approximately 400˚F (204˚C), mixed well and applied in a molten/liquid state to the pavement. The material temperature when it meets the road surface needs to be a minimum of 380˚F. Surface temperature at the time of application should be 50˚F (10˚C) and rising. Upon cooling to normal pavement temperature, thermoplastic provides a very durable marking material.

Product Advantages:

- Non-flammable and below 150 VOC
- Demonstrates excellent bead retention and abrasion resistance
- Fast set up keeps traffic control to a minimum when striping
- Can be used for symbols, legends and lane marking
- A low cost per useful life durable form of delineation

Packaging:
Thermoplastic is sold in one ton increments (2000 pounds). The ton is divided into 40 heat degradable bags each weighing approximately 50 pounds.

Storage:
The shelf life of the product is one year from date of manufacture with proper storage. Proper storage includes inside or covered to prevent from moisture, and below 120F. Outside storage for short intervals is acceptable as long as the material is kept dry. The older the material, more agitation and dwell time is required to fully melt and mix the granular ingredients.

Conditions for Application:
All surfaces must be clean, dry and free from oil, grease, antifreeze, loose sand, aggregate and chipping/peeling existing striping. Any curing compounds used on new concrete must be mechanically abraded off prior to striping and use of a primer is strongly suggested. Concrete should be allowed to cure 14 days. When in doubt, always test adhesion. While thermoplastic may be installed behind the paver once the mat cools, new asphalt should be allowed to cure for a minimum of 14 days to maximize adhesion and durability.

Coverage:
One tons yields approximately 6000 feet of 4" stripe @ 90 mils – surface texture will decrease the yield.

Physical Characteristics:

% Binder	**22% minimum**
% Glass:	**30 - 40%**
% TiO2 in the white:	**10% minimum**
Reflectance, white:	**75 minimum**
Reflectance, yellow:	**45 minimum**
Softening Point:	**200-230°F**
Specific gravity:	**2.15 maximum**
Yellowness index, white:	**0.12 maximum**

Dry Time: With drop on glass beads applied, the thermoplastic material shall be sufficiently tack-free to carry traffic in not more than 2 minutes when pavement surface temperature is at 50˚F, and not more than 10 minutes when pavement surface temperature is 130ºF.

Limitations: Applying a test strip to determine if surface is dry enough if there has been rain in the last 24 hours.

- Do not apply if hot material shows moisture bubbles.
- Do not heat thermoplastic above 450°F.
- Do no apply if the material at the gun is below 380°F.
- Do not apply when road and ambient temperatures are below 50°F.
- Do not apply when temperatures are near or below the dew point.
- Material at application is hot – please wear personal protective equipment as described in MSDS

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