



TECHNICAL DATA SHEET

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

	<u>PART A*</u>	<u>PART B</u>
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.)		

MARK-55.3

**100% SOLIDS
PAVEMENT
MARKING
SYSTEM**

ISO 9001:2000 Certified

POLY-CARB, INC.

33095 Bainbridge Road
Cleveland, Ohio 44139
Tel: 440.248.1223
Fax: 440.248.1513

125 GNS Court
Roberta, Georgia 31078
Tel: 478.636.2861
Fax: 478.636.2949

Toll-Free: 866.POLY-CARB
www.POLY-CARB.com

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. file 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 DISCLAIMS 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.)	ASTM D-711
Track Free Time @ 25°C (75° ± 2°F)	15 - 20 minutes	
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)
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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.

		<u>Thickness of the Marking Lines</u>					
	<u>Width of the Line</u>	<u>5 Mils</u>	<u>10 Mils</u>	<u>15 Mils</u>	<u>20 Mils</u>	<u>25 Mils</u>	<u>30 Mils</u>
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



VISIBEAD

HIGHWAY SAFETY MARKING SPHERES

Durable, versatile and highly reflective... in all marking systems

VISIBEAD® Is Clearly Superior For Adverse Weather Conditions

- VISIBEAD Highway Safety Marking Spheres enhance drivers' nighttime visibility, particularly in rain, fog or melting snow, for dramatic improvements in mobility and highway safety.
- Because VISIBEAD spheres are three to four times larger than conventional glass beads, they stand higher above the surface of the line than conventional beads, delineating highway markings clearly and providing superior wet night visibility.
- Potters Industries manufactures VISIBEAD spheres using proprietary technology to ensure consistent quality, improved durability and unique clarity. Specialized coatings enable VISIBEAD spheres to combine chemically with the binder, improving adhesion, optimizing embedment and maximizing long-term retroreflectivity.
- Potters Industries' VISIGUN® safety marking sphere dispenser is designed for optimal application of VISIBEAD spheres.
- VISIBEAD Spheres are easy to apply with existing equipment.
- Our beads meet and exceed the rigorous heavy metals limitation standards set forth by state and federal standards.

VISIBEAD Facts and Figures

- **Size:** 14–20 mesh (1.4–0.85 mm); a range of sizes offsets the effects of traffic and binder degradation.
- **Compatible binders:** waterborne or solvent-based paint, epoxy, polyester, thermoplastic, PMMA and polyurea.
- **Standards:** Most states specify gradation (size), roundness and coating requirements for highway marking beads. VISIBEAD spheres meet the U.S. Department of Transportation Federal Highway Administration's FP-03 specifications.



VISIBEAD Spheres use proprietary technology to ensure consistent quality, improved durability and unique clarity.



VISIBEAD Spheres are three to four times larger than conventional glass beads, and stand higher above the surface of the line, delineating highway markings clearly and providing superior visibility.



Potters Industries Inc.
an affiliate of PQ Corporation

Potters respects the environment by recycling over one billion pounds of glass each year.

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VISIBEAD PLUS II

Durable, versatile and highly reflective... in all marking systems

Larger, Brighter and Safer in All Driving Conditions

- VISIBEAD® PLUS II highway safety marking spheres provide the highest level of safety for all nighttime driving conditions. In wet, dry or foggy weather, VISIBEAD PLUS II spheres reflect more light, more clearly, than any other glass bead product.
- Developed by Potters Industries, the world's leading manufacturer of highway safety marking beads, VISIBEAD PLUS II spheres are three to four times larger than conventional glass beads. Their size and unique clarity allow for maximum retro-reflectivity. In fact, using VISIBEAD PLUS II spheres is a bonus when meeting safety marking requirements.
- Tight gradations and high rounds ensure consistency in application. VISIBEAD PLUS II spheres incorporate the latest in coatings technology and are chemically compatible with most binders. While installation is easy, Potters Industries can provide on-site assistance to calibrate equipment for optimal bead distribution.

Seeing is Believing

- Extensive testing at Potters Industries' highway safety research center proves the effectiveness of VISIBEAD PLUS II spheres (test data available on request)
- Under rainfall rates as high as half an inch per hour, VISIBEAD PLUS II spheres are 200% more visible than conventional markings.
- On wet pavement, VISIBEAD PLUS II spheres recover 85% of their reflectivity seconds after the rain stops; conventional markings normally require several hours.

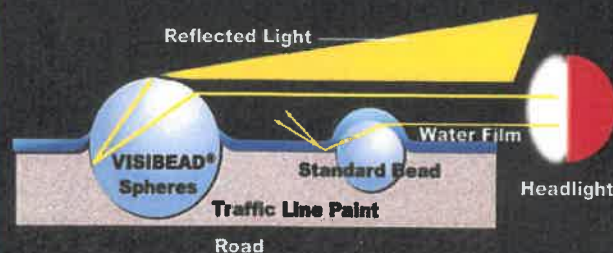


Potters respects the environment by recycling over one billion pounds of glass each year.



In wet, dry or foggy weather, VISIBEAD PLUS II spheres reflect more light, more clearly, than any other glass bead product.

The VISIBEAD PLUS II Wet Night Advantage



- In fog, when condensed water droplets reduce the reflectivity of conventional markings, VISIBEAD PLUS II spheres remain highly effective.

VISIBEAD PLUS II Facts and Figures

- **Size:** 14–20 mesh (1.4–0.85 mm); a range of sizes offsets the effects of traffic and binder degradation.
- **Compatible binders:** waterborne or solvent-based paint, epoxy, polyester, thermoplastic, PMMA and polyurea.
- **Standards:** Most states specify gradation (size), roundness and coating requirements for highway marking beads. VISIBEAD PLUS II spheres meet the U.S. Department of Transportation Federal Highway Administration's FP-03 specifications.

See Your Potters Representative or Call (800) 55-BEADS
Visit Us On The Web at www.pottersbeads.com



HIGHWAY

STANDARD & PREMIUM SAFETY MARKING SPHERES

Durable, versatile and highly reflective... in all marking systems

STANDARD

Potters Standard Highway Spheres— Cost-effective Highway Delineation

- Retroreflective pavement markings deliver continuous roadway guidance to drivers and have been proven to increase highway safety.
- Our Standard Highway Marking Spheres provide cost-effective nighttime roadway delineation, and can meet any specific standard glass bead specification in North America.
- Our Standard spheres are consistent in quality and composition. Strict quality control produces spheres that optimize retroreflectivity. Proprietary coatings are available to resist agglomeration, ensure flotation for ideal embedment and improve adhesion for greater durability.
- Standard spheres may be applied as a drop-on in all commercial binders, including waterborne paint, epoxy, polyester, thermoplastic, PMMA and polyurea.
- Our beads meet the rigorous heavy metals limitations set forth by state and federal standards.

Standard Spheres: Facts and Figures

- **Size:** 20–80 mesh (850–150 microns); a range of sizes offsets effects of traffic/binder degradation.
- **Compatible binders:** waterborne or solvent-based paint, epoxy, polyester, thermoplastic, PMMA, polyurea.
- **Standards:** Spheres can be supplied to meet state specifications for gradation (size), roundness and coatings. Potters Industries is able to supply glass beads which meet any specific standard glass bead specification in North America.



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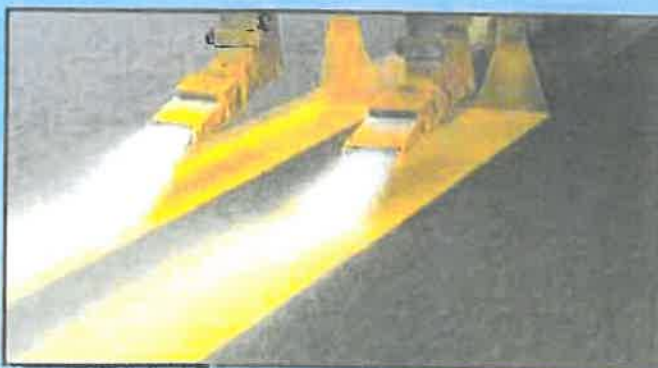
Our beads meet the rigorous heavy metals limitations set forth by state and federal standards.



Typical Standard Bead Size

U.S. Mesh Size	Millimeters	Mass % Passing
16	1.18	100
20	0.850	95-100
30	0.600	75-95
50	0.300	15-35
100	0.150	0-5

AASHTO M-247, Type 1, Roundness — 70%, 78%, and 80% overall by sieve size.



Potters retroreflective pavement markings deliver continuous roadway guidance to drivers and have been proven to increase highway safety.

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MSDS

MATERIAL SAFETY DATA SHEET

Product Name: Highway Safety Marking Spheres with Coating

Date Prepared: 03/05/2010

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade names: Standard Highway Safety Marking Spheres with Coating
Premium Highway Safety Marking Spheres with Coating
VISIBEAD® Highway Safety Marking Spheres with Coating
VISIBEAD® Plus II Highway Safety Marking Spheres with Coating
Premix Highway Safety Marking Spheres with Coating
Intermix Highway Safety Marking Spheres with Coating

Product description: Spherical glass beads

Manufacturer: Potters Industries, Inc.
P. O. Box 840
Valley Forge, PA 19482 USA

Telephone: 610-651-4200

In case of emergency call: 610-651-4200

For transportation emergency

Call CHEMTREC: 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical and Common Name	CAS Registry Number	Wt. %	OSHA PEL	ACGIH TLV
Glass, oxide; Glass	65997-17-3	>99%	15mg/m ³ total dust, 5mg/m ³ respirable	10 mg/m ³ inhalable, 3 mg/m ³ respirable

3. HAZARDS IDENTIFICATION

Emergency Overview: Noncombustible clear white glass beads. Spilled material is extremely slippery.

Eye contact: Practically non-irritating to the eyes.

Skin contact: Slightly irritating to skin.

Inhalation: May cause irritation.

Ingestion: No known hazard.

Chronic hazards: No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen.

Physical hazards: Spilled material is extremely slippery.

4. FIRST AID MEASURES

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion: None required.

5. FIRE FIGHTING MEASURES

Flammable limits: This material is noncombustible.
Extinguishing Media: This material is compatible with all extinguishing media.
Hazards to fire-fighters: See Section 3 for information on hazards when this material is present in the area of a fire.
Fire-fighting equipment: The following protective equipment for fire fighters is recommended when this material is present in the area of a fire: rubber boots with slip-resistant soles.

6. ACCIDENTAL RELEASE MEASURES

Personal protection: Wear rubber boots with slip-resistant soles, and NIOSH-approved dust respirator where dust occurs. See section 8.
Environmental Hazards: Sinks in water. No known hazard to aquatic life.
Small spill cleanup: Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See section 8.
Large spill cleanup: Keep unnecessary people away; isolate hazard area and deny entry. Do not walk through spilled material. Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See section 8.
CERCLA RQ: There is no CERCLA Reportable Quantity for this material.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes and skin. Avoid breathing dust. Keep container closed. Use with adequate ventilation. Promptly clean up spills.
Storage: Keep containers closed. Store in clean metal, fiber or plastic containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Use with adequate ventilation. Keep containers closed. Eyewash station should be within direct access.
Respiratory protection: Use a NIOSH-approved dust respirator where dust occurs. Observe OSHA regulations for respirator use (29 C.F.R. §1910.134).
Skin protection: Wear body-covering clothing.
Eye protection: Wear safety glasses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Glass bead.
Color:	Clear white.
Melting point:	Approximately 730° C.
Odor:	Odorless.
pH:	Not applicable.
Specific gravity:	Approximately 2.5 g/cm ³
Solubility in water:	Insoluble.

10. STABILITY AND REACTIVITY

Stability:	This material is stable under all conditions of use and storage.
Conditions to avoid:	None.
Materials to avoid:	Dissolves in hydrofluoric acid.
Hazardous decomposition products:	None known.

11. TOXICOLOGICAL INFORMATION

Acute Data:	When tested for primary irritation potential, a similar material was practically non-irritating to the eyes and was slightly irritating to the skin. The acute oral toxicity of this product has not been tested. A similar material was nontoxic to rats at 5,000 mg/kg. All animals survived, gained weight and appeared active and healthy. There were no signs of gross toxicity, adverse pharmacologic effects or abnormal behavior. The acute inhalation toxicity of this product has not been tested.
Subchronic Data:	There are no known reports of subchronic toxicity of nonfibrous glass.
Special Studies:	There are no known reports of carcinogenicity of nonfibrous glass. Nonfibrous glass is not listed by IARC, NTP or OSHA as a carcinogen.

12. ECOLOGICAL INFORMATION

Eco toxicity:	There are no known reports of ecotoxicity of nonfibrous glass.
Environmental Fate:	This material is persistent but inert in aquatic systems. It will not bioconcentrate in animals.
Physical/Chemical:	Sinks in water. Insoluble in water.

13. DISPOSAL CONSIDERATIONS

Classification:	Disposed material is not a hazardous waste.
Disposal Method:	Dispose in accordance with federal, state and local regulations.

Product Name: **Highway Safety Marking Spheres with Coating**
Date Prepared: 03/05/2010

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14. TRANSPORT INFORMATION

DOT UN Status: This material is not regulated as a hazardous material for transportation.

15. REGULATORY INFORMATION

CERCLA: No CERCLA Reportable Quantity has been established for this material.
SARA TITLE III: Not an Extremely Hazardous Substance under §302 Not a Toxic Chemical under §313.
TSCA: All ingredients of this material are listed on the TSCA Inventory.
FDA: Glass is regarded by FDA as Generally Recognized As Safe (GRAS) for use in contact with food.

16. OTHER INFORMATION

Prepared by: HSES Dept. / Erin A. Bendig
Supersedes revision of: 3/5/2007

THE INFORMATION ON THIS SAFETY DATA SHEET IS BELIEVED TO BE ACCURATE AND IT IS THE BEST INFORMATION AVAILABLE TO POTTERS INDUSTRIES, INC. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONS FOR HANDLING A CHEMICAL BY A PERSON TRAINED IN CHEMICAL HANDLING. POTTERS INDUSTRIES, INC. MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED WITH RESPECT TO SUCH INFORMATION OR THE PRODUCT TO WHICH IT RELATES, AND WE ASSUME NO LIABILITY RESULTING FROM THE USE OR HANDLING OF THE PRODUCT TO WHICH THIS SAFETY DATA SHEET RELATES. USERS AND HANDLERS OF THIS PRODUCT SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION PROVIDED HEREIN FOR THEIR OWN PURPOSES.



Product Data:
ME, MA, NH, VT SPEC WATERBORNE TRAFFIC PAINT

"As Durable as the Hills of Old New England"

DESCRIPTION: A lead free, VOC compliant fast drying, 100% acrylic waterborne traffic paint. Conforms to MA, CT, ME, NH and VT state specifications. For use on bituminous. Portland-concrete and concrete pavements, as well as various sealcoat applications. Not recommended for use on concrete containing silicone.

SURFACE PREPARATION: All surfaces should be clean and dry, free of dirt, sand, grease, oil, salt, etc. Loose and lifting paint should be removed prior to painting. While new asphalt surfaces vary in length of time required for curing, one to two weeks is usually adequate for waterborne paints. If it is necessary to paint immediately after paving applying two thin coats 7-8 mils each allowing 24 hours between coats is recommended. Waterborne paints applied to thick or to soon may cause asphalt to lift and or crack. *Regardless of surface condition, a test stripe should be placed inconspicuously to determine if surface is suitable before continuing.*

APPLICATION: Formulated for use with either airless or conventional air atomized spray equipment. See equipment manufacturer's recommendations. To improve spraying, paint may be heated to an optimum temperature of 110° F, but is to never exceed 160° F. Do not apply when air or surface temperatures are below 50° F or when relative humidity exceeds 85%. Concrete sealers should be removed prior to application.

THINNING & CLEANING: Thinning is not recommended. If thinning is desired, use clean water, not to exceed 1 pint water/5 gallons paint. Adding water will lengthen dry time. Wet paint may be cleaned with water. Dry paint is very difficult to remove.

SHELF LIFE: 12 months minimum based on unopened container stored @ 77° F

STORAGE: Store in a cool dry area. **KEEP FROM FREEZING**

Never mix waterborne and alkyd paints! The result will be a congealed mess.

	2036 WHITE	2037 YELLOW
Coverage/gal (15mils wet 4"line)	320'	320'
Dry time minutes 15 mils wet (LAB)	8	8
Hiding (contrast ratio)	96	96
Viscosity (K.U.)	78-95	78-95
Weight/gallon	14.1	13.8
Directional reflectance	92	52
VOC's (pounds/gallon)	.78	.78
Total solids (weight)	77	77
Non-volatile vehicle	43% min	43% min
Vehicle type	Next generation Fastrack™ 3427 100% Acrylic Resin (more durable)	

Franklin Paint Company, Inc.
259 Cottage Street
Franklin, MA 02038

www.franklinpaint.com

Tel: 800-486-0304
508-528-0303
Fax: 508-528-0303

Franklin Paint™

259 COTTAGE ST FRANKLIN, MA 02038
www.franklinpaint.com

Product Data: LOW VOC CHLORINATED RUBBER TRAFFIC PAINT

DESCRIPTION: A durable fast drying alkyd traffic paint modified with chlorinated rubber. Conforms to current federal VOC regulations. Recommended for use on bituminous, Portland-cement and concrete pavements. Not recommended for use over concrete sealers containing silicone or asphalt sealers.

SURFACE CONDITION / PREPARATION: Asphalt and concrete surfaces should be cured, clean, dry, and sound. Loose and lifting paint should be removed prior to application. Concrete with sealers containing silicone, having a smooth finish, or efflorescence should be removed by etching or abrasive blasting, as these conditions may interfere with adhesion. While new asphalt surfaces vary in length of time required for curing, insufficient curing may result in bleeding. New concrete tends to chalk; alkyd may also react with the alkali in new concrete making adhesion difficult. *Regardless of surface condition, a test stripe should be placed inconspicuously to determine if surface is suitable before continuing.*

APPLICATION: Formulated for use with either airless or conventional air atomized spray equipment. See equipment manufacturer's recommendations. Recommended paint thickness is 15 mils wet. For best results apply when air and surface temperature are above 40°F and relative humidity is below 85%.

THINNING & CLEANING: *Federal and state regulations prohibit dilution of this product. DO NOT THIN.* Toluene may be used for cleaning.

SHELF LIFE: 3 months minimum in an unopened container stored @ 77°F. It is recommended to order only what you are able to use in this time frame.

STORAGE: Store in a cool dry area.

Never mix waterborne and alkyd traffic paints!

	2040 WHITE	2041 YELLOW	2042 GREEN	2043 BLACK	2044 BLUE	2045 RED
Coverage/Gal (15 mils wet 4" line)	320'	320'	320'	320'	320'	320'
Dry Time Minutes 15 mils (ASTM D-711)	8	8	8	8	8	8
Dry Opacity (Hiding)	0.96	0.96	N/A	N/A	N/A	N/A
Viscosity-KU (Kreb Units)	80-84	80-84	80-84	80-84	80-84	80-84
Weight/Gallon (lbs.)	12.6	12.4	12.5	12.6	12.5	12.3
Directional Reflectance (Cap Y)	85	50	N/A	N/A	N/A	N/A
VOC's-Pounds/Gallon	1.10	1.10	1.12	1.10	1.13	1.11
% Total Pigment (By Weight)	58.7	58.2	57.1	58.4	57.1	57.1
% Total Solids (By Weight)	76.6	76.5	76.0	76.6	76.1	75.7
% Total Solids (By Volume)	55.1	55.9	55.3	55.6	55.5	55.0
% Total Non-Volatile Vehicle (By Weight)	41.3	41.8	42.9	41.6	42.9	42.9
Vehicle Type-	Medium oil solvent based alkyd, modified with chlorinated rubber					

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REVISED
3/9/17 NS



PRODUCT DATA SHEET

WHITE HYDROCARBON EXTRUDE THERMOPLASTIC TRAFFIC MARKING MATERIAL 884415

DESCRIPTION:

Ennis Traffic Safety Solutions' White Hydrocarbon Extrude Thermoplastic reflectorized pavement marking material is intended for use on Portland cement or asphalt concrete road surfaces. It is a 100% solid material that must be pre-heated to a temperature of at least 425°F (218°C), and applied in a molten state to a pavement surface at a temperature of at least 400°F (204°C). Roadway surface temperature at the time of application shall not be less than 50°F (10°C) and shall be rising. The road surface shall be absolutely dry with no forecasted rain for the day. Upon cooling to normal pavement temperature, thermoplastic provides a very durable marking material for high traffic areas.

CHARACTERISTICS OF FINISHED THERMOPLASTIC: (typical)

Binder, % by weight	23.0
Glass Beads, % by weight	31.0
Tests on material after 4 hours heat with stirring at 425°F ±2°F (218°F ±1°C)	
Softening Point, °C	102.0
Tensile Bond Strength, psi	310
Hardness, Shore A2 @ 115°F (46°C)	58
Daylight Reflectance	81.09
Specific Gravity	2.05

DRY TIME

When applied to the pavement, the thermoplastic material shall be sufficiently tack-free to carry traffic in not more than 2 minutes when pavement surface temperature is at 50±3°F (10°C), and not more than 10 minutes when pavement surface temperature is 130±3°F (54°C).

WHEN TO USE PRIMER

Use the thermoplastic manufacturer's recommended primer on all Portland concrete, and on asphalt surfaces that are more than 2 years old, oxidized and/or have aggregate exposed. Check to make sure that the coverage is adequate and allow primer to cure according to manufacturer's instructions before applying thermoplastic.

PACKAGING

Ennis Traffic Safety Solutions' White Hydrocarbon Extrude Thermoplastic is available in granular form packaged in 50lb. (22.7kg) meltable bags that are compatible with the thermoplastic allowing them to melt and become part of the hot melt mixture at application temperature.

MATERIAL SAFETY DATA SHEET AVAILABLE UPON REQUEST Rev. 12/06/2010

The Product Data offered herein is, to the best of our knowledge, true and accurate, but all recommendations are made without warning, expressed or implied. Because the conditions of use are beyond our control, neither Ennis Traffic Safety Solutions, nor its agents shall be liable for any injury, loss or damage, direct or consequential, arising from the use or the inability to use the product described herein. No person is authorized to make any statement or recommendation not contained in the Product Data, and any such statement or recommendation, if made, shall not bind the Corporation. Further, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents, and no license under the claims of any patent is either implied or granted.

Ennis Traffic Safety Solutions
5910 N. Central Expressway, Suite 1050
Dallas, TX 75206
1-800-331-8118



PRODUCT DATA SHEET

YELLOW LEADFREE HYDROCARBON EXTRUDE THERMOPLASTIC TRAFFIC MARKING MATERIAL 884665

DESCRIPTION:

Ennis Traffic Safety Solutions' Yellow Leadfree Hydrocarbon Extrude Thermoplastic reflectorized pavement marking material is intended for use on Portland cement or asphalt concrete road surfaces. It is a 100% solid material that must be pre-heated to a temperature of at least 425°F (218°C), and applied in a molten state to a pavement surface at a temperature of at least 400°F (204°C). Roadway surface temperature at the time of application shall not be less than 50°F (10°C) and shall be rising. The road surface shall be absolutely dry with no forecasted rain for the day. Upon cooling to normal pavement temperature, thermoplastic provides a very durable marking material for high traffic areas.

CHARACTERISTICS OF FINISHED THERMOPLASTIC: (typical)

Binder, % by weight	22.3
Glass Beads, AASHTO M-247, % by weight	31.0
Tests on material after 4 hours heat with stirring at 425°F ±2°F (218°F ±1°C)	
Softening Point, °C	102.3
Tensile Bond Strength, psi	305
Hardness, Shore A2 @ 115°F (46°C)	52
Daylight Reflectance	50.19
Specific Gravity	2.05

DRY TIME

When applied to the pavement, the thermoplastic material shall be sufficiently tack-free to carry traffic in not more than 2 minutes when pavement surface temperature is at 50±3°F (10°C), and not more than 10 minutes when pavement surface temperature is 130±3°F (54°C).

WHEN TO USE PRIMER

Use the thermoplastic manufacturer's recommended primer on all Portland concrete, and on asphalt surfaces that are more than 2 years old, oxidized and/or have aggregate exposed. Check to make sure that the coverage is adequate and allow primer to cure according to manufacturer's instructions before applying thermoplastic.

PACKAGING

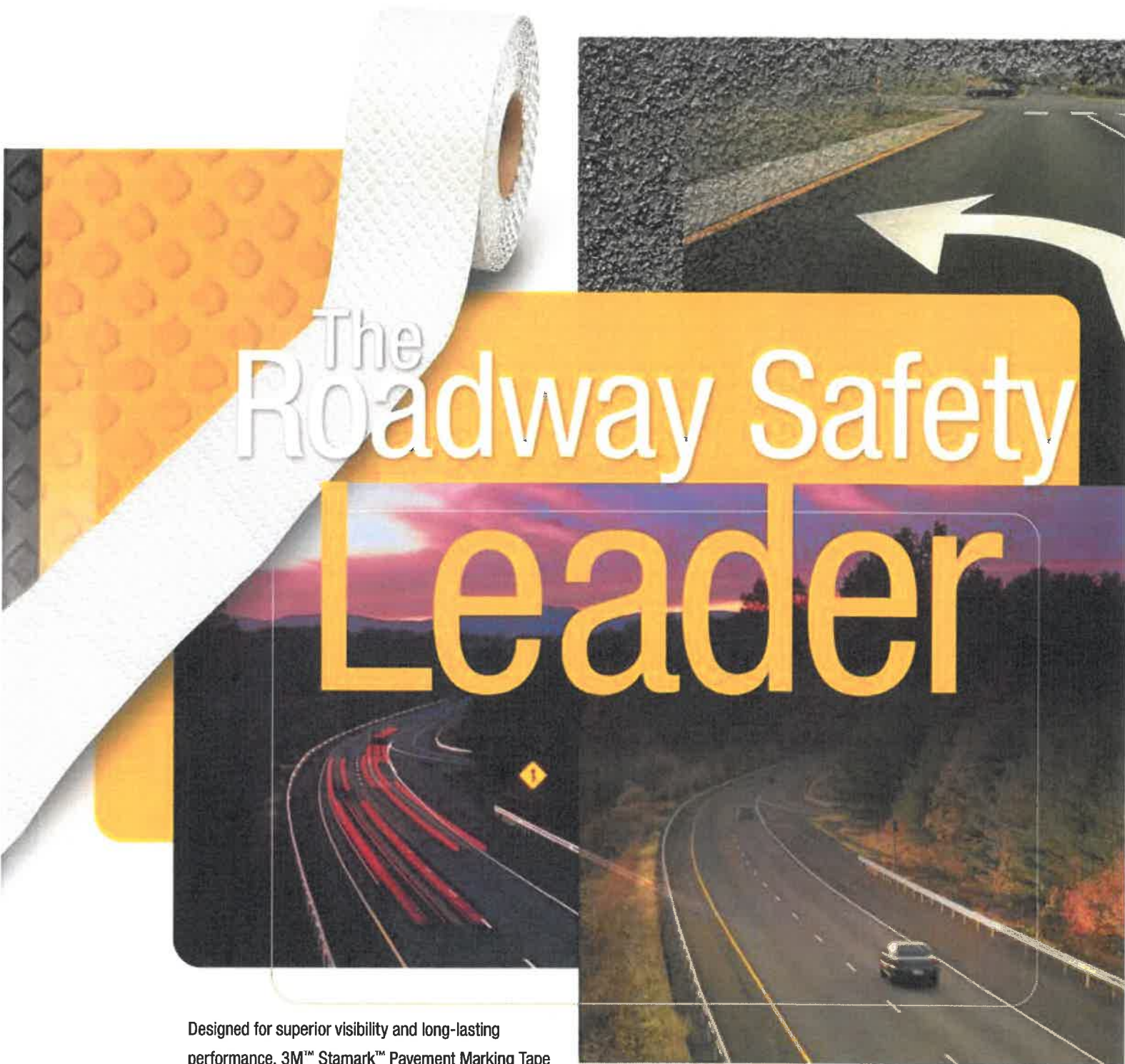
Ennis Traffic Safety Solutions' Yellow Hydrocarbon Extrude Thermoplastic is available in granular form packaged in 50lb. (22.7kg) meltable bags that are compatible with the thermoplastic allowing them to melt and become part of the hot melt mixture at application temperature.

MATERIAL SAFETY DATA SHEET AVAILABLE UPON REQUEST Rev. 12/06/2010

The Product Data offered herein is, to the best of our knowledge, true and accurate, but all recommendations are made without warning, expressed or implied. Because the conditions of use are beyond our control, neither Ennis Traffic Safety Solutions, nor its agents shall be liable for any injury, loss or damage, direct or consequential, arising from the use or the inability to use the product described herein. No person is authorized to make any statement or recommendation not contained in the Product Data, and any such statement or recommendation, if made, shall not bind the Corporation. Further, nothing contained herein shall be construed as a recommendation to use any product in conflict with existing patents, and no license under the claims of any patent is either implied or granted.

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3M™ Stamark™ Pavement Marking Tape
Series 380



The Roadway Safety Leader

Designed for superior visibility and long-lasting performance, 3M™ Stamark™ Pavement Marking Tape Series 380 is ideal for lane and edge lines, gore and transverse markings, symbols and legends—anywhere you're looking for the ultimate in durability and safety.

3M

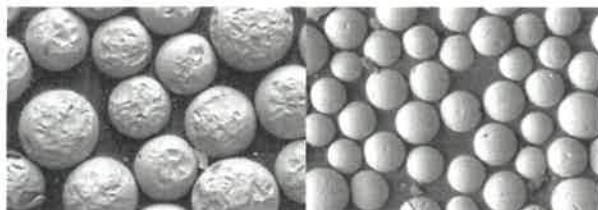


The original durable

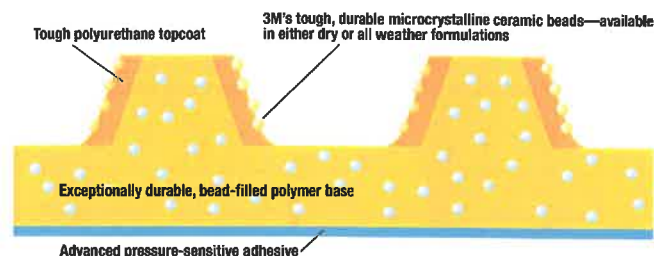
3M™ Stamark™ Pavement Marking Tape Series 380

This tape sets the standard for durability and visibility in pavement markings. Born of 3M innovations in retroreflective science, polymer chemistry, and adhesive and ceramic technology, 3M™ Stamark™ Pavement Marking Tape has created high-visibility guidance and improved roadway safety for more than two generations of drivers. Continuous innovation and technological improvements have made this tape the premier pavement marking solution in the world.

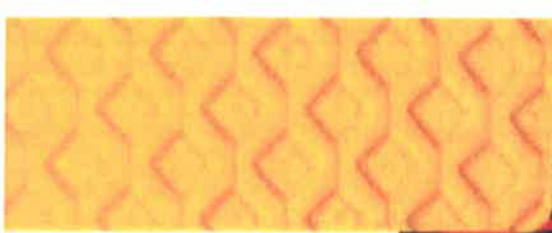
- **Superior retroreflective performance and retained visibility in all-weather conditions.** The retroreflective optics in 3M™ Stamark™ Pavement Marking Tape Series 380 are unlike anything else in the industry. 3M's unique microcrystalline ceramic beads are far tougher, harder and more resistant to harsh roadway conditions than conventional glass beads. 3M microcrystalline ceramic beads retain their visibility—in dry and wet conditions—long after other beads have become ineffective.
- **Extended season application.** With an easy-to-use surface preparation adhesive, you can apply Stamark Series 380 tape beyond the seasonal application dates when the temperature is 40°F or higher, extending your effective striping season by several weeks and boosting productivity for your crews and contractors.
- **Easy application.** There's no need for surface preparation adhesives during the normal marking season with Stamark Series 380 tape. Adhesion to properly prepared pavement surfaces above 40°F is almost as easy as unwind, apply and tamp.
- **Whiter, brighter, longer.** Dirt- and abrasion-resistant technologies are built into each component of Stamark Series 380 tape, from 3M's tough microcrystalline ceramic beads to our brilliant white and yellow topcoats.
- **Durable nighttime yellow visibility.** 3M's lead-chromate-free pigments and yellow microcrystalline ceramic beads create a distinct and long-lasting nighttime yellow color—in wet or dry conditions.
- **3M technical assistance.** As a global company with local resources, 3M is much more than just a supplier of pavement markings. Our experienced representatives and technicians can show you how to improve roadway visibility and safety, reduce long-term costs, properly apply pavement marking materials, and maintain your roadway marking projects.



This photomicrograph shows 3M's microcrystalline ceramic beads (right) and conventional glass beads (left) after sandblasting. 3M's tougher beads resist chipping, scarring and crushing for long-lasting retroreflective performance.



A cross-section of 3M™ Stamark™ Pavement Marking Tape Series 380 shows 3M's advanced technologies in every aspect of construction, inside and out.



pavement marking

Whether you need a pavement marking solution for all weather conditions, extended season applications, or concrete or asphalt roadways, there's a Stamark Series 380 tape that's engineered specifically for the job.

3M™ Stamark™ High Performance Tape 380I ES and Contrast Tape 380I-5 ES

This high performance, extended season tape is backed by decades of proven roadway performance.

- Exceptionally durable, 3M microcrystalline ceramic beads ensure long-lasting visibility
- Ideal for interstate highways, dark rural roads and urban streets, where nighttime reflectivity is critical

3M™ Stamark™ All Weather Tape 380AW and Contrast Tape 380AW-5

According to the Federal Highway Administration, 24 percent of vehicle crashes in the U.S. are weather-related,¹ and 75 percent of these occur on wet roadways. Pavement markings are critical to helping drivers navigate safely and stay in their lanes—especially during wet weather.

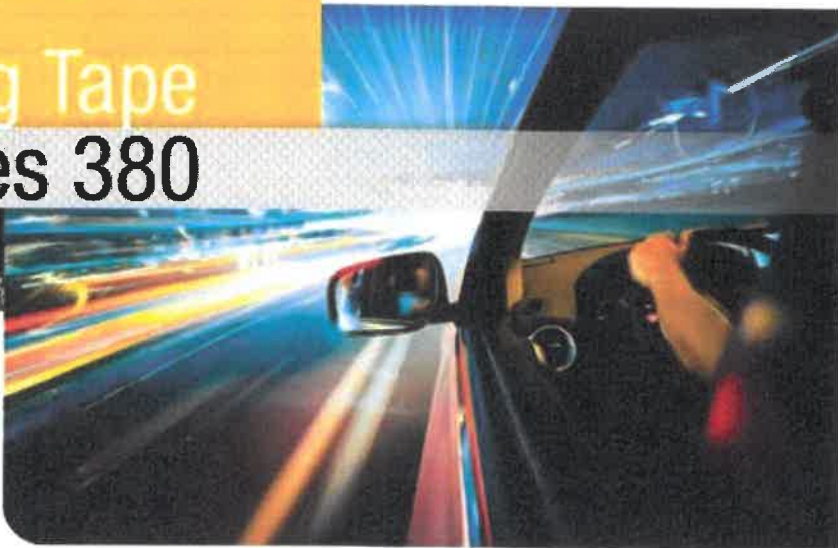
- 3M™ Stamark™ All Weather Tape 380AW includes 3M's advanced high-index optics that are highly visible and reflective, rain or shine, day or night
- A high-profile diamond pattern is embedded with 3M's tough, innovative microcrystalline ceramic beads to ensure maximum wet reflectivity during rainy conditions

¹ www.ops.fhwa.dot.gov/weather

Both 3M™ Stamark™ Series 380I ES and Series 380AW are available in white, lead-chromate-free yellow, and with durable black borders that increase contrast with concrete and other light-colored pavement surfaces.



3M™ Stamark™ Pavement Marking Tape Series 380



To learn more about 3M™ Stamark™ Pavement Marking Tapes or 3M's full line of traffic safety products and services, visit 3M.com/roadwaysafety or contact your local 3M representative at 1-800-553-1380.



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