



LAFRENTZ ROAD MARKING

Lafrentz is Western Canada's leading road marking company, applying painted road markings, durable road markings and safety markings / surfaces.

Road Marking Handbook

www.LAFRENTZ.ca



LAFRENTZ ROAD MARKING

For over 35 years, Lafrentz has been Western Canada's Source for road marking materials, application and consultation.

Our team of consultants holds both technical knowledge and practical experience. We cater our services to your needs, whether it means having us apply the product or training your crews to do it themselves.

Focused
on
Western
Canada



Products Manufactured

System 300 Thermoplastic
available in white and yellow
formulated for Canadian climate

System 400 Cold Plastic
SPRAY & EXTRUDE
for road marking application

SRM - Skid Resistant Material
custom colours
project dependent requirements

Services Available

Highway Painting
Airport Painting
Durable Markings Application
Surface-Applied
Inlaid
Profiled
Skid Resistant Markings
Skid Resistant Surfaces
Industrial Safety Markings

Road Marking Materials

There are a number of road marking materials available. In Western Canada there are three products used more than any others.

Paint

Paint has been the product of choice for years. The current water-borne materials provide a fast, low-cost option. To reach year round delineation many jurisdictions paint more than once a year. Multiple paint applications can bridge that gap to ensure that there are lines in place in the spring.

Paint manufacturers are continuing their efforts to enhance the durability and performance of paint materials. New materials are being tested to confirm that they can withstand the rigors of our climate and winter maintenance activities.

Cold Plastic - MMA

Methyl methacrylate is the base resin for this material. Often referred to as cold plastic or MMA the material uses a controlled chemical reaction to cure and form a tenacious bond. It can be applied in a wide range of ambient temperatures even as low as 0°C. Numerous application processes can be used. The equipment to apply this material ranges from the very simple hand equipment to extremely costly computerized machinery. It is very durable, easily maintained and repaired. It will chemically soften the old MMA and bond to it leaving a monolithic repair. As a roadmarking material it has specific application parameters which should be followed to ensure maximum performance.

Thermoplastic

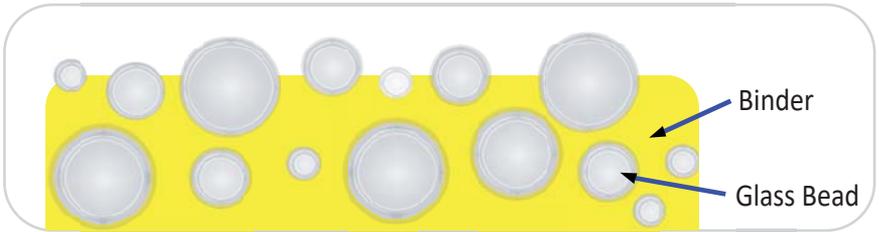
Thermoplastic material uses heat to generate its bond. Temperature is critical to the successful application of this material. Ambient and asphalt temperatures need to be monitored to achieve peak performance. Preheating equipment is often used to bring the material to application temperature then the material is transferred to the application equipment.

We have found that not all thermoplastic materials are created equal. End product performance is very dependent on the material formulation. The demands of multiple freeze thaw cycles, extreme winter cold and summer heat means that only formulations designed for these climatic conditions perform well.

What's in A Line?

Anatomy of a Road Marking

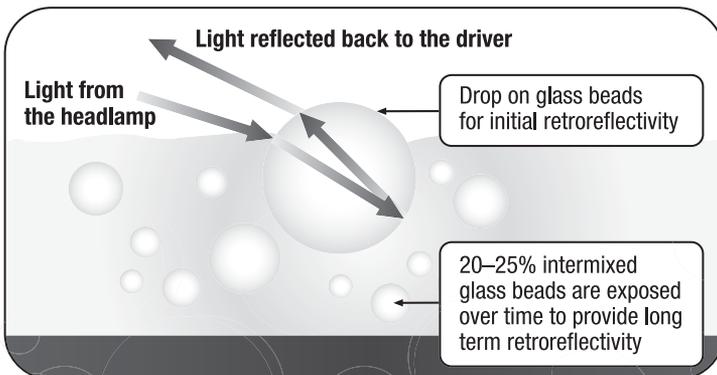
Roadmarkings are made up of a binder or resin that holds the marking together and bonds it to the surface. Binders can be a variety of materials including paint, methyl methacrylate (MMA), thermoplastic and others. Filler materials, glass, sand and rock plus pigment makes up the rest. Glass beads can be incorporated into the mix and are used to top dress the line to provide retroreflectivity.



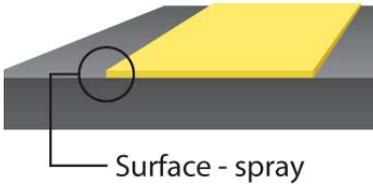
Retroreflectivity

This is how you can see the lines in the dark. The light from your headlamps strikes the glass beads, it is refracted and reflected back to your eyes. The small spheres of glass do all the work.

The right glass bead package, (mixture of sizes, quality, refractive index) properly applied is crucial to the performance of the finished product. Retroreflectivity measurements can be included in your specifications.

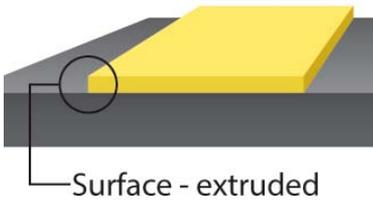


Types of Applications



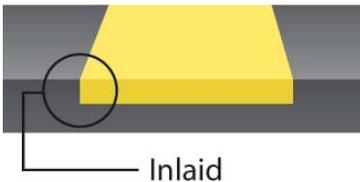
Surface - Spray

Typical spray applied material less than a millimeter in thickness. Includes paint, epoxy, and MMA.



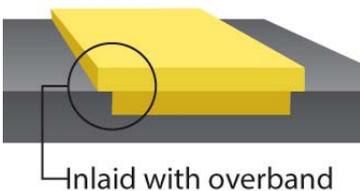
Surface - Extruded

Extruded and struck off or applied by ribbon gun application of 1-3 millimeters of material on the surface. Thermoplastic or MMA materials.



Inlaid with Recessed Line

2-3 millimeters of material are applied typically by ribbon gun into a groove in the asphalt. The material is left flush or slightly below the surface of the asphalt. The advantage is that the material is hidden from the plow. But in the urban segment dirt and debris can collect on the markings. Often used on high speed roadway applications of profiled markings using thermoplastic or MMA materials.



Inlaid with Over Band

Thermoplastic is used to fill the 5-10 millimeter deep groove in the asphalt and then struck off at 2-3 millimeters above the surface over banding the groove by 10 millimeters on each side completely sealing the edges of the groove. The groove is cut to the design width and length of the roadmarking. The over band will wear away due to traffic and maintenance activities but the roadmarking will retain the correct dimensions.

Paint



Paint represents the standard in road marking material. Paint application processes have evolved from a paint brush and can to large high speed trucks with laser or video guidance, fully instrumented to monitor all aspects of application with all data being uploaded into data warehouses. Precise accurate lines on any roadway can be achieved quickly and economically.

Uses:

- Longitudinal lines
- Transverse lines
- Parking lots
- Messages – arrows, words
- Stencil work

Application methods:

- Walk behind spray unit
- Self-propelled units ranging from small tractors to large trucks

Features and Benefits:

- Fast application
- Low cost per application
- Retroreflective

Cost: \$

Paint

Products:

Since 2012 Environment Canada regulations have been in place requiring the use of low VOC traffic marking paint. From May 1 through October 15 each year only low VOC paint may be used.

Waterborne

This group of products is the current standard material of choice. Most waterborne paints meet the low VOC regulations. Adherence to the manufacturer's recommended application procedures yield high quality results. These materials contain a higher percentage of solids compared to solvent based paint. More solids leaves more paint on the ground when cured for the same volume of applied wet material.

Solvent Based

This group of products allows the opportunity to apply paint in the shoulders of the season. Some products meet the low VOC regulations and can be used year round.

Premium

Development continues with new generations of waterborne resins and application processes. These products allow you to apply heavier, faster drying applications which enhance durability.



For additional information see the
Lafrentz Road Marking Best Practices Guide

Cold Plastic - MMA - Spray



This product can be described as a super duty plastic paint applied using a plural component system. The 'A' and 'B' sides are mixed just before hitting the ground. The curing process takes only minutes. The result is a high quality, durable marking for use on medium ADT roadways.

Uses:

- Longitudinal Lines
- Transverse Lines
- Parking lots
- Messages – arrows, words
- Stencil Work

Application methods:

Specially designed plural component spray equipment, push or self-propelled

Features and Benefits:

- 1:1 or 98:2 Mix Ratios
- Fast application on asphalt or concrete
- UV stable – no colour deterioration
- Very durable
- Open to traffic in minutes
- Environmentally friendly - 100% Solids – no VOCs
- Easily repaired and maintained

Cost: \$\$\$

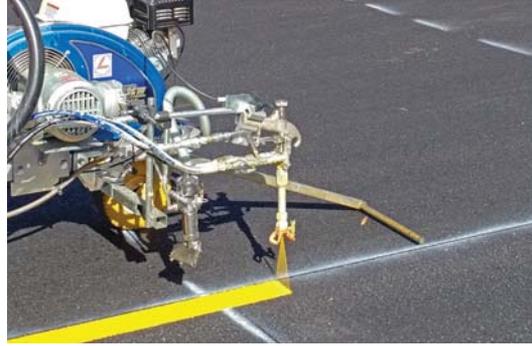
Cold Plastic - MMA - Spray

Fast

Durable

UV Stable

**Ready for Traffic
in Minutes**



For additional information see the
Lafrentz Road Marking Best Practices Guide

Cold Plastic - MMA - Extrude

This material is a great choice for sub-divisions, towns and smaller cities. Easy to apply by local forces or contracted applicators. It provides a high quality, durable marking for use on medium ADT roadways. It can be applied to the roadway surface or inlaid.

Uses:

Longitudinal Lines

Transverse Lines

Messages – arrows, words, symbols

Application methods:

Hand form – drag box

Trowel

Push applicator

Ribbon gun on self-propelled applicator

Features and Benefits:

Good durability

Can be applied on asphalt or concrete

UV stable – no colour deterioration

Environmentally friendly - 100% Solid – no VOCs

Open to traffic in less than an hour

Easily repaired and maintained

Cost: \$\$\$\$

Cold Plastic - MMA - Extrude



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Thermoplastic

Thermoplastic road markings have a proven track record across Western Canada. The ruggedness of the material allows it to withstand the toughest challenges. Many cities have chosen the inlaid with over band as the standard application for markings on new asphalt. This investment has provided year round delineation for numerous years before the markings require any maintenance.

Uses:

Longitudinal Lines
Transverse Lines
Messages – arrows, words

Application methods:

Hand form – drag box
Push applicator
Ribbon gun self-propelled applicator
Extrusion self-propelled applicator

Features and Benefits:

Multiple application processes
Good retroreflectivity
Extremely durable

Cost: \$\$\$\$\$

Thermoplastic

Milling
the groove



Fill and
over band
the groove



Finished
Line



For additional information see the
Lafrentz Road Marking Best Practices Guide

Road Marking

Application Type	Material	Thickness	
Surface - Spray	Paint	0.2-0.3mm	
Surface - Spray	MMA	0.5-1.0mm	
Surface - Extruded	MMA or Thermoplastic	2-3mm	
Inlaid with Recessed Line	MMA or Thermoplastic	2-4mm	
Inlaid with Over Band	MMA or Thermoplastic	3-10mm inlaid 2-3mm above surface	
Surface - Skid Resistant Material	MMA	1-3mm	



Selection Grid

	Expected * Service Interval	Initial Cost	Uses
	1-3 times / year	\$	Local Roads, Highways, Parking Lots
	2-4 years	\$\$\$	Local Roads, Highways, Parking Lots, Highway Messages
	3-5 years	\$\$\$\$	Medium ADT, Arterials, Collectors, High-Speed, Highway Messages
	4-6 years	\$\$\$\$\$	High-Speed Urban, Highways
	6-9 years	\$\$\$\$\$\$	High ADT, High-Wear, Arterials, High-Speed
	3-5 years		High ADT, Arterials, Collectors, High-Speed

* variance is based on wear and intended application

(ie: longitudinal vs. transverse & arterials vs. collectors vs. high-speed, etc)



Specialty Applications

Wet Night High Visibility Markings

Adding a texture or profile to the markings allows the water to flow away exposing the glass bead. These markings are much more visible in rainy conditions compared to a flat line.



Skid Resistant Surfaces

Whether its an intersection where safety is a concern or dedicated bikeways, skid resistant surfaces in specified colours or black to match the surrounding asphalt provide increased skid resistant. Results; decreased stopping distance, enhanced safety.



Specialty Applications

High Visibility Enhanced Crosswalks

These crosswalks are hard to miss. Some jurisdictions are using colours on the roadway to enhance certain crosswalks.



Custom Colours and Applications

Lafrentz provides a rainbow of standard stock colours. But when it just has to match, we use the Pantone colour system to blend to your custom requirements.





LAFRENTZ

LAFRENTZ ROAD MARKING

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