Hi-Brite Pavement Systems MMA CAP Systems

Hi-Brite MMA Cold Applied Plastic (CAP- PlastiMMArk) are a specially formulated two-component methacrylate resin compound that chemically bonds to the applied surface. The range has been specifically engineered to deliver a fast curing and highly durable pavement marking solution. This specially formulated paint is Australian produced in a facility that delivers consistent quality in the manufacturing process and through sound management systems has achieved NATA Laboratory Accreditation, ISO 9001:2000 Quality Management Accreditation and is a recognised APAS manufacturing facility. The attention we give to quality management systems ensures that all batches of production are consistent and meet our customer requirements and specifications.

The Hi-Brite MMA CAP (PlastiMMArk) is based on proven technology and engineered to deliver beyond the performance it is recognised for in the market. This two component road marking system is renowned for its durability making it an ideal option for application in high traffic wear areas such as intersections, roundabouts, junctions and general heavy traffic roads.

Hi-Brite Trowel Screed PlastiMMArk

Hi-Brite Trowel screed is a two-component methacrylate resin compound (MMA) that is both fast-curing and highly durable and is certified by APAS. This system is specifically designed to deliver maximum visibility and skid resistance for key road braking zones such as approaches to intersections, roundabouts, traffic lights, stop bars, directions symbols and other transverse markings.

Through extensive research both locally and internationally this process was developed into high performance coatings used at critical intersections delivering both the dry and wet friction testing results along with the durability and line integrity. This coating is far superior to the widely used conventional water based systems and thermoplastic systems in operation.

Hi- Brite Spray PlastiMMArk

The Hi-Brite spray system has been engineered and formulated following research in to high performance longitudinal line marking systems. The retro reflectivity results and durability are far superior to the widely used conventional water based systems and thermoplastic systems in operation. The Plasti MMArk spray system will deliver increased life of the coating, improved bead retention and reduce overall lifecycle cost when applied correctly.

Hi-Brite Structured PlastiMMArk

The APAS approved long life fast curing two component methacrylate resin compound has been designed as a viable and cost effective structured marking solution.

This structure marking delivers the highest level of durability and offer superior luminance and reflectotivity and is the ideal alternative to thermoplastic. The Hi-Brite structured product can produce multiple structured patters depending on user requirements and machines used.

Hi-Brite Roll-On PlastiMMArk

The Hi-Brite roll-on system has been developed to deliver a durable skid resistant system that is commonly used in colour to delineate on the road. The performance benefits of this product and its application make it ideal for bus lanes, cycleways and coloured pavement pads such as school zones.

This product delivers stable consistent colours that are highly UV resistant and when combined with the appropriate aggregate can achieve a BPN in excess of 65BPN with the correct application

Paint Properties

- Density 1.45-1.65
- Viscosity 80-90KU @ 25 degrees
- Volume Solids >99%
- Weight Solids >99%
- VOC Content 20g/l
- Approx. Coverage 1 sqm/L at 1mm dry thickness

Available Sizes

- 15 Litre Plastic Pales
- 200 Litre Steel Drums
- 500 Litre IBC
- 1000 Litre IBC

Surface Preparation

- **Bitumen or Asphalt Surfaces – Bare Freshly Laid**

The marking surface should be clean, dry, free of any oil, grease, hydraulic fluids and all other loose materials. Bitumen or Asphalt based surfaces all contain large amounts of oils, greases and waxes while molten and when being freshly applied.

Over time weathering (sun, rain, wind, etc) of the freshly laid bitumen surfaces causes this oily/greasy material to come to the surface of the new bitumen and be oxidised and removed leaving a largely non-greasy surface. The length of time recommended before coating onto freshly laid bitumen or asphalt surfaces is 28 days minimum. Any coating applied onto freshly laid bitumen before an appropriate time has passes will not achieve its maximum life expectancy and is likely to fail prematurely and/or blacken significantly.

To remove contaminants from the surface prior to coating high pressure water blasting, removal of any loose materials dislodged and drying is recommended.

- **Bitumen or Asphalt Road Surfaces – Bare Old and Weathered**

The marking surface should be clean, dry, free of any oil, grease, hydraulic fluids and all other loose materials. An old weathered bitumen surface is considered to be any bare bitumen or asphalt surface which has been exposed to exterior weathering conditions for a period of years after being laid. Aged surfaces should not leech any significant amounts of oily/greasy materials to the surface providing a largely stable surface to work with. Road grime and other contaminants must be removed prior to coating.

Some severely aged surfaces are prone to crumbling and loosing aggregates over time, these loose materials must be removed prior to coating to ensure a proper finish is achieved.

To remove contaminants from the surface prior to coating high pressure water blasting, removal of any materials dislodged and drying as is recommended.

- **Bitumen or Asphalt Road Surfaces – Previously Coated**

The marking surface should be clean, dry, free of any oil, grease, hydraulic fluids and all other loose materials. Previously coated Bitumen or Asphalt based surfaces may present a wide range of difficulties depending on particular material which has been previously coated.

Hi-Brite supplied products may be coated directly over previously applied Hi-Brite coatings of the same type

The surface must be in sound condition to ensure the over coated layer achieves maximum life expectancy. To remove residual contaminants and loose materials high pressure water blasting and drying are recommended prior to coating.

It is recommended removal of all previously applied coatings if their origin is unknown. Mechanical methods such as grinding, shot blasting or water cutting are required to remove the coatings. Coatings are considered remove when a minimum of 50% of the underlying substrate is visible and bare from the surface.

- **Fresh and Aged Bare Concrete Surfaces**

Fresh concrete surfaces by nature are very unstable for coating directly onto due to the chemical curing processes still occurring within the concrete. The concrete curing process can take weeks/months to finish depending on the environmental conditions. Line marking coatings systems applied to the surface before curing is completed will not deliver their maximum life expectancy.

It is recommended a minimum of 28 days after the concrete has been laid to allow sufficient curing to be completed before coating.

It is recommended mechanically grinding, shot blast or water cutting the surface prior to coating to ensure all contaminants and surface residues are completely removed. Debris and any loose materials created by the mechanical actions must be completely removed prior to coating.

Moisture levels present in the concrete must be below 6% prior to coating. The surface may be dried via use of gas powered drying equipment or left to dry naturally. If the surface is left uncoated for more than 24hours after the grinding stage then use of ‘Primer’ is required prior to coating any Hi-Brite products onto the surface to ensure a strong surface bond is achieved.

- **Concrete Curing Compounds and Previously Coated Concrete**

Concrete curing compounds, concrete sealers and existing linemarking products consist of a wide range of different materials and different brands applied by concreters/contractors directly to the surface of freshly poured wet concrete to assist in the curing of the concrete. These materials are employed for a variety of reasons which will not be discussed in this application guide.

Hi-Brite products are not recommended to be used in combination with any other pavement coatings, treatments, compounds or surface preparations. Due to wide and varying nature of these products compatibility cannot be guaranteed and the life expectancy of the coatings can be significantly reduced because of being coated on top of these materials.

It is recommended that removal of all previously applied coatings. Mechanical methods such as grinding, shot blasting or water cutting are required to remove the coatings. Coatings are considered remove when a minimum of 50% of the underlying substrate is visible and bare from the surface.

Hi-Brite MMA Cap Preparation

- **Spray CAP PlastiMMArk**

Hi-Brite Spray CAP can be successfully applied using airless equipment. The desired film thickness can be achieved by varying the gun height, tip size, pump pressure and application speed. All components and surfaces of the application equipment must be chemically resistant.

Specifically, designed equipment for the application of two component material allow for the exact mixing ratio of the product.

Manual or Semi-Automatic application: Hardener powder is most suitable, whereby the powder is manually fed and mixed with a stirrer to the cold plastic before application.

Machine application with fully-automatic dosage and mixing: Liquid BPO is used for fully automatic machines. Two major mixing ratios are used. 98:2 systems and 1:1 systems.

Consult an RRSP representative to understand the range of equipment available.

- **Roll – On CAP PlastiMMArk**

Hi-Brite Roll On CAP can be successfully applied by rollers or squeegee. This system uses a 98:2 mixing ratio with the hardener powder mixed with a stirrer to the CAP prior to application. Desired thickness of the product is achieved by defining the quantity of material to be used per square meter, 1 litre of material per square meter will achieve a thickness of 1mm

- **Trowel Cap PlastiMMArk**

Hi-Brite Trowel CAP can be successfully applied by trowel. This system uses a 98:2 mixing ratio with the hardener powder mixed with a stirrer to the CAP prior to application. Desired thickness of the product is achieved by defining the quantity of material to be used per square meter, 1 litre of material per square meter will achieve a thickness of 1mm

- **Structured CAP PlastiMMArk**

Hi-Brite Profile CAP can be successfully applied by machine. This system uses a 98:2 mixing ratio with the hardener liquid mixed within the machine operation. Desired thickness of the product is achieved by defining the quantity of material to be used per square meter, 1 litre of material per square meter will achieve a thickness of 1mm

Film Thickness and Glass Bead Application

Achieving the desired dry film thickness of the paint is critical in relation to adhesion of the bead type to be applied. Achieving the right thickness will maximise bead retention and promote the wearing properties of the product.

Typical systems

- For light traffic areas applying 0.375L/sqm will deliver a film thickness of 0.375 um and is the optimum from a retention and luminous perspective for use with drop on BHR beads when applied at 350g per square meter. The delivered target retroreflectivity will be >300mcd/lux/sqm

- For medium traffic areas applying 0.5L/sqm will deliver a film thickness of 0.5 um and is the optimum from a retention and luminous perspective for use with drop on CHR beads when applied at 500g per square meter. The delivered target retroreflectivity will be >400mcd/lux/sqm
- For heavy traffic areas applying 0.75L/sqm will deliver a film thickness of 0.75 um and is the optimum from a retention and luminous perspective for use with drop on BHR beads when applied at 350g per square meter. The delivered target retroreflectivity will be >300mcd/lux/sqm

To achieve optimum retention of the bead application should occur prior to skinning of the paint as it dries, protecting the marking from any traffic type until dry will deliver the best result from a durability, bead retention and luminosity. Anti-skid can be achieved through the addition of crushed glass or similar material as a mix with the beads used

Cure Time and Application Conditions

The specific marking dry time will be dependent upon the thickness of the paint applied and the ambient weather condition at the time of application. If the humidity increases or the temperature drops or the wind speed drops then the dry time of the paint will increase.

The optimum weather conditions to apply Hi-Brite CAP is where the average air temperature is above 15 degrees, humidity is below 50% and wind speed is over 10kph. Where the ambient weather conditions move away from ideal conditions the dry time will increase and will require longer protection from traffic. The RMS Scientific Laboratory recommend (Ref TD 98-7 Doc 3148) that paint application should not occur where the air temperature is below 10 degrees or where the humidity is greater than 85%.

Surface and ambient air temperature will have an effect on the cure time of the product

Clean Up

Clean all equipment with gun wash solvent immediately after use. Build up on spray equipment may occur in hot weather due to the rapid dry nature of the product.

Flush all lines with gun wash solvent until the wash is clear, even a slight haze in the wash means that all traces of the paint have not been removed from the system.

Storage and Transport

Storage: Store under cover or in a well shaded area. Rotate stock. Store as required for flammable class 3 in a bunded area under cover. Store in well ventilated area away from sources of heat and ignition. Keep containers closed at all times.

Handling: Avoid ingestion, inhalation and prolonged skin contact should be avoided by good occupational work practice. Eye protection approved to AS1337 should be worn where there is a risk of splashes. Always wash hands before smoking and eating.

Usage Conditions: Always use in a well-ventilated area. If risk of inhalation of spray mist exists, wear appropriate respirator and comply with the applicable State Spray Painting Regulations.

Flammability: This product is flammable. All sources of ignition must be eliminated in or near the working area. DO NOT SMOKE. Fight a fire with CO2 or dry chemical powder.

Support and Service

At RRSP, we look to offer our customers the right road and pavement system solution through a combination of fast service, reliable inventories, knowledgeable people, personalized attention, and competitive pricing which is perceived by our customers to be the best value available. Have a question on this product or any other we offer give us a call

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