

## **APPENDIX 'D'**

# **APPLICATION INSTRUCTIONS – CYCLEGRIP® MMAX CORUNDUM BIKE LANE TREATMENT SYSTEM**



## APPLICATION INSTRUCTIONS

### CycleGrip® MMAX Corundum Bike Lane Treatment System

**Overview:**

CycleGrip® MMAX Corundum combines state-of-the-art Methyl Methacrylate resins with intermixed hardwearing aggregate and premium pigments to deliver an extremely durable, color stable lane delineation treatment system that meets non-slip requirements needed for cyclists. CycleGrip® MMAX Corundum is mixed onsite and is distributed on to the pavement substrate using squeegees. CycleGrip® MMAX Corundum cures in a wide range of temperatures with predictable back to traffic times of 20-60 minutes.

**Storage:**

Avoid extreme storage temperatures. Keep materials in dry, protected areas, between 40°F – 80°F. Keep out of direct sunlight and protected from open flame. Use within six months of receipt.

**EQUIPMENT:**

The following items are needed during the different stages of application.

<u>Surface prep &amp; layout</u>	<u>Mixing</u>	<u>Installation</u>	<u>Clean up</u>
Stiff broom	High speed / torque drill (with power source / spare batteries)	Long handled squeegees	Solvent resistant gloves
Blower / compressed air	Mixing paddles	Spare rubber squeegee blades	Safety glasses
Measuring tape	Measuring cup	Straight hand trowels	Acetone
Chalk line	Small tarp	Long handled roller cages	Large cleaning tub
Marking crayons	Screw driver/bucket opener	Rollers - med. nap (5 per 1000 sqft)	Solvent resistant brushes
Duct tape/white masking tape	Utility knife		Cloth rags
Roofing paper	Misc tools		Trash bags
	Generator		
	Extension Cord		

**GENERAL REQUIREMENTS:**

**SURFACE:** CycleGrip® MMAX Corundum can be applied on stable, well compacted asphalt or non-bituminous concrete surfaces, such as Portland cement concrete. New substrates should be allowed to age harden or cure for minimum 15 days (asphalt) to 30 days (concrete) before installation. Pavement surface must be completely free of dirt, debris, moisture, curing compounds and other contaminants that can affect adhesion. Chemical contaminants such as vehicle fluids must be removed well in advance using a degreasing solution and power washer, ensuring all residues are removed. Existing pavement markings within the application area may be removed by gently sandblasting, shot-blasting, water-blasting or grinding making sure that minimal damage is done to the substrate. Aged surfaces containing reflective cracking should be repaired, or reflective cracking should be expected to re-appear after installation.

**MATERIAL:** Avoid extreme storage temperatures. Keep materials in dry, protected areas, between 40°F – 80°F. Keep out of direct sunlight and protected from open flame. Use within six months of receipt.

**TEMPERATURE:** Ambient and surface temperatures for installation should be between 40-100°F, and should be 5°F above the dew point temperature. There should also be less than 75% relative humidity when installing CycleGrip® MMAX Corundum.

**SAFETY PRECAUTIONS:**

Review MSDS for CycleGrip® MMAX Corundum before usage.



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### CycleGrip® MMAX Corundum Bike Lane Treatment System

#### INSTRUCTIONS FOR APPLICATION:

**Surface Prep:** All surfaces must be dry, free of any dust and loose debris and at the proper temperature prior to striping. Even though the surface may appear dry, it is best to check for sub-surface moisture to improve bond. Check by taping a one foot square piece of clear plastic down on the roadway and observe for 30 minutes to see if moisture forms. Clean the intended application area thoroughly. All loose particles, dirt, sand dust, etc. must be removed. Concrete surfaces should be wire brushed, at minimum. Sweep completely. Use a power blower or compressed air. Clean areas containing chemical contaminants such as vehicle fluids, using a degreasing solution. Proper removal of contaminants and degreasing solution are necessary well in advance of the application.

**Masking:** Using duct tape and roofing paper, mask off perimeter of area to be colored, as well as any object not to be colored such as manhole covers, drains and existing markings. Pre-measuring and pre-marking the entire application into 45-50 SQFT sections will help ensure proper coverage and specified build thickness. A single mixed pail of MMAX should cover each pre-marked 45-50 SQFT section.

**Mixing:** Add 25 lbs of CycleGrip® MMAX Corundum aggregate into the 2 gallons CycleGrip® MMAX Corundum resin and mix with clean mixing paddle, using a high speed, high torque drill. Add the recommended amount of powder catalyst, based on ambient and pavement temperature (Table 1), and mix thoroughly.

After adding the catalyst, CycleGrip® MMAX Corundum will start curing and must be applied to the pavement immediately. There will be 4 to 10 minute working time, which is temperature dependent.

Material will mix to approximately 2.79 gallons (10.55 liters), weigh 52 lbs and cover 45-50 sqft @ 90 mils.

Caution: Clean the mixing paddle between uses or understand that material will immediately initiate curing if previously exposed to catalyzed material (and not cleaned).

Table 1: Recommended catalyst by temperature range:

< 70° F / 18° C	lbs (kg)	.52 (0.24)
	fl. oz. (liters)	8 (0.24)
> 70° F / 18° C	lbs (kg)	.26 (0.12)
	fl. oz. (liters)	4 (0.12)

**Installation:** Immediately, pour one mixed pail of material on to a single marked 50 SQFT section of the application area and use a squeegee to evenly distribute at a coverage rate of 45-50 sq. ft. Use trowel in small, tight areas where squeegee cannot effectively be used. After rough distribution with squeegee, back roll material (one direction only) to remove working lines created with squeegee and create a consistent, anti-slip texture. Roller will last longer during continuous usage when it remains wetted with new batches of MMA resin, but will need to be replaced when it starts 'pulling' material or creating differences in texture. Stopping and starting will decrease the useful life of the roller.

As material gels, but before it cures, remove masking.

**Clean up:** Clean all tooling in acetone before material is cured. Clean in well ventilated areas to reduce fume build-up and worker exposure. Do not come into direct contact with solvents - use proper personal protective equipment. Acetone is extremely flammable; take proper handling measures to reduce static discharge and combustion. Dispose of all contaminated materials in accordance with all applicable federal, state and local laws and regulations.

**Opening to traffic:** CycleGrip® MMAX Corundum must be 100% cured, which will be a hardened solid state, before traffic is permitted. Curing is based on temperatures and amount of catalyst added, but typically takes 20-60 minutes.