NATIONAL COLD PLASTIC - AREA MARKING

PRODUCT DESCRIPTION	National Cold Plastic Area Marking is a two-component Solvent free area marking paint based on MMA resin technology. This product cures fast and can be opened to traffic within a short period, after application. When cured completely the product demonstrates very high adhesion to the surface, abrasion resistance, and high dirt pickup and tire mark resistance.

RECOMMENDED USES	National Cold Plastic Area Marking recommended for bus stops, cycle tracks areas, roundabouts, speed transition zone indication lanes and various other applications which require application of in large areas. Can be applied on asphalt and concrete pavements in urban areas. For concrete, the concrete must have been laid at least 1 month ago. This product is to be applied manually by notched squeegee or by trowel and a short napped roller to the specified thickness of 1 mm to 3.0 mm.

TECHNICAL DATA

COLOUR, DRY FILM	White, Yellow and Red (Other Colors available on special request)
FINISH, DRY FILM	Flat skid resistant finish
VOLUME SOLIDS (ASTM D2697)	98 ± 2%
SPECIFIC GRAVITY, ISO 2811-1	1.65± 0.05 Kg/L
THEORETICAL CONSUMPTION	1 mm FILM THICKNESS: ≈ 1L/m2 ≈1.65 kg/m2
RECOMMENDED WFT (WET FILM)	1000-3000 microns (1- 3 mm)
FLASH POINT	Not Applicable
POT LIFE @30°c	Refer table provided
CURING TIME*	Approximately 20 minutes at 25°C (*Depends on the climatic conditions)
SOLVENT CONTENT SOLVENT-FREE	Do not add solvent while applying

ADVANTAGES

National Cold Plastic Area Marking	Fast curing and can be opened to traffic in short times

POTLIFE / SETTING TIME/ % HARDENER PROPORTION OF TOTAL FORMULATION AT DIFFERENT TEMPERATURES

Temperature (°C) (Surface)	Hardener (50% DBPO) (% by Weight)	Pot life	Setting Time (min)
10	2.0	18	50
20	2.0	10	30
20	1.0	15	35
30	1.0	8	20
30	0.5	12	30
40	0.5	6	18

APPLICATION INSTRUCTION

SURFACE PREPARATION	**Road surface / pretreatment** **General Information** The surface must be dry, clean and free from grease, oil and loose gravel and other contaminations. The surface and potential existing old markings must be checked for their carrying capacity and compatibility with the material to be applied. In case of doubt, test applications and adhesion tests are required. Ideally, old markings should be removed with appropriate mechanical procedures. **Concrete or cement bound surfaces** The pavement components in new road surfaces that prevent good bonding (fine mortar layer, concrete slurries) must be appropriately removed (e.g. with high pressure water jet, fine mill cut or similar). We recommend conducting test applications. **Bituminous surfaces** Any loose components such as chippings must be removed. Flux oils, releasing agents for road rollers are detrimental to good bonding of markings or can cause discoloration of the striping. Since a mechanical removal is hardly possible, the surface should be exposed to traffic for 4 – 6 weeks or an initial marking of paint is to be applied. A bonding check is required before applying the final marking. **Application techniques** With common tools like notched squeegee when the surface is rough and flat squeegee when the surface is smooth. **Two coat application process:** (cementations and asphalt substrates)

	Priming: National Cold Plastic Area Marking materials don't need primer at asphalt surface. If primer is required (e. g. concrete substrates) consult National Paints Technical department and seek advice before application of primer) **Application of National Cold Plastic Area Marking**: Mix the required quantity of National Cold Plastic Area Marking material with the required quantity of the hardener. Apply at app. 1.0 kg to 1.5 kg per square meter depending on substrate type and texture (asphalt substrates will normally require more material). Pour the mixture onto the substrate and spread with a toothed squeegee or pin rake to a depth of app. 0.6 to 1.0 mm. Fully broadcast with a rounded aggregate of up to 1.5 mm in size (at app. 2.5 kg to 3.0 kg per sqm). The surplus aggregate has to be removed after the curing and before application of second layer. This material could be used again. Apply a second coat of National Cold Plastic Area Marking material at app. 0.8 kg per sqm using a straight edged rubber or foam squeegee. Material consumption rates will vary depending of the texture of the substrate (especially on asphalt). **One layer system (cementations and asphalt substrates):** Mix the required quantity of National Cold Plastic Area Marking material with the required quantity of the hardener. Then add app. 10 kg of hard rounded aggregate (up to app. 1.5 mm in size) into the 10 kg of National Cold Plastic Area Marking material. Mix for one to two minutes, with high speed hand held mixer then apply app. 3 kg per square meter (1.5 mm nominal thickness – using up to 1.5 mm aggregate). Pour the mixture onto the asphalt substrate and spread with a pin rake adjusted and set to the maximum grain size of aggregate, rounded up to the nearest mm. Please note: Material consumption rates will vary depending of the texture of the substrate (especially on asphalt). Apply National Cold Plastic Anti Blackening Clear coat if required

CONDITIONING DURING APPLICATION	The substrate temperature shall be above 10°C and minimum 3°C above dew point free from moisture and condensation.

APPLICATION DATA

APPLICATION METHOD	Single coat application with a toothed squeegee or pin rake. For two coat applications after broadcasting desired size aggregate & removing the un-adhered aggregate second coat applied with a straight edged rubber or foam squeegee. Can also be applied as a single coat by special spray equipments if facility exists.
CLEANING/THINNING	Special thinner required for cleaning the tools
THINNER (VOLUME)	Solvent-free, do not add solvent while applying
MIXING RATIO BY WEIGHT	1- 2% Catalyst (depending of exterior temperature and surface temperature. Do not exceed more than 2% Catalyst)
AIRLESS SPRAY REQUIREMENTS	As per the spray equipment requirements and settings

SYSTEM

RECOMMENDED SYSTEM To be applied on prepared surface.	Two coat application: 1x National Cold Plastic Area Marking –(800-1000 microns) Board cast desired size aggregates (required size 1x National Cold Plastic Area Marking 450-500 microns 1x National Cold Plastic – Anti Blackening Clear Coat (if required) Or for single coat application : 1x National Cold Plastic Area Marking –(800-2000 microns) 1x National Cold Plastic – Anti Blackening Clear Coat (if required)

ADDITIONAL DATA

SHELF LIFE @ 30ºC	6 months, in original sealed container, with proper storage conditions.

PACKING SIZES	30 Kg.

HEALTH & SAFETY

SAFETY PRECAUTIONS	Generally, most of the MMA based materials are quite safe to handle with due precautions. As a general rule, avoid skin and eye contact by wearing overalls, gloves, goggles, and mask etc. Spillage on skin should immediately be removed by thorough washing with water and soap or suitable cleaner. Eye should be flushed with fresh water. Avoid inhalation of vapors and paint mist by wearing suitable mask. In the event of ingestion and eye contact, seek medical attention immediately. Painting must be carried out in well-ventilated area. Local safety regulations to be followed.

STORAGE & HANDLING

STORAGE	Store the paint in proper storage conditions as per the local regulations. Keep the paint container in sealed condition under shed, away from direct sunlight and extreme temperatures. Do not stock paint material near to any ignition sources. Do not put back the half or unused material back in original container, containing the supplied paint, to avoid contamination. Handle with care. Stir well before use.

NOTE: We warranty only the quality of our product and this data sheet is based on results obtained from experience and tests. We reserve the right to change data without prior notice. For surface preparation, safety details refer specified and safety data.

This data sheet supersedes all previous issued.
Issued: 07/2020

APPLICATION METHODS

MIXING INSTRUCTIONS:

Pre-mix the material thoroughly with a high-speed power drill mixer. Once the material has been thoroughly mixed, add the pre-determined amount of BPO Powder (the activator / catalyst). A guideline for determining the amount of BPO Powder required is:1% by weight at 10°C will give approximately 10 – 15 minutes of pot life before hardening (Note that 1% of the 30 kilogram pail is 300 grams). Please use the temperature chart on the following page as a guide to have 10 – 20 minutes to work with the material.
Note: DO NOT USE less than 0.5% or More than 3.0% BPO. the material does not polymerize properly outside of this range.
The BPO should be added slowly and well mixed around the sides of the pail, up and down using the high-speed drill mixer for approximately one minute. Longer mixing means shorter pot life.
* SEE TEMPERATURE GUIDE ON BACK PAGE FOR MORE INFORMATION ABOUT ADDING BPO CATALYST

CLEANING EQUIPMENT & TOOLS

It is good practice to keep tools and equipment in a clean state. While the material is soft, the tools and equipment can be cleaned with a scraper, rags and solvent. Acetone, Xylene or Toluene are types of solvent that work well. If the material hardens on tools and equipment, the material can be softened and released by heating with a propane tiger torch.

MAINTENANCE

National Cold Plastic Area Marking uses a chemical catalyst to create a strong bond to the aggregate in the road surface. Methyl Methacrylate is the same hard resin compound as that used to make Plexiglas and dentures – meaning cold plastic markings are highly durable and very long-lasting.
MMA based materials can be applied at lower temperatures than hot melt thermoplastic (as low as 0°C). The average maintenance schedule is 10 times lower than normal paint, and when repairs are necessary it can be overlaid on a previous marking after properly cleaning the existing marking, to provide monolithic repairs (avoiding the need for complete line removal and reapplication).
National Cold Plastic Area Marking is fast-curing, meaning roadways can be opened to traffic soon after application and is usually ready for traffic in one hour after completion of the application. The existing markings can be washed with normal water to renew them to the complete a new look if any periodical maintenance required.

CHEMICAL RESISTANCE & DURABILITY:

National Cold Plastic Area Marking is highly resistant to degradation. It's completely UV- stable, meaning it won't deteriorate over time with exposure to the sun's UV rays. It won't degrade due to oil content in pavement materials, or from oil dropped from traffic.

APPLICATION:

1. Marking are laid out prior to applications.
2. Catalyst is added to the material on the jobsite immediately prior to application (see table on back page for pot life estimates).

3. The catalyzed material is poured on the cleaned and prepared road to produce a 1.5 – 2 mm thick MMA based layer for areas markings, roundabouts, cycle lanes etc.

4. Complicated symbols are applied by using a template.

SURFACE CONDITIONS:

Surface conditions should be clean and dry. Fine dust, sand or clay must be removed before application of cold plastic materials. A sweeper, air equipment or broom will work in most situations.
The surface temperature of the asphalt is also critical. For best results, the temperature should be above freezing if materials are surface laid.