SAFETRACK® LM

Cold Plastic Line Markings

Product Description

SAFETRACK® LM is a range of cold-plastic line marking products that are based on Stirling Lloyd's, now GCP Applied Technologies, unique ESSELAC® advanced resin technology and extensive experience in the development of genuine high performance line marking systems. These cold-applied reactive curing systems are the result of our ongoing research and development programme into providing products that offer improved design life and durability, and overcome the shortcomings found in today's traditional marking products. The range gives the client the power to design line markings to fit a specific solution. With their excellent durability they will maintain their properties for many years with minimal degradation, providing a product that in whole-life costing terms provides 'Best Value for Money' and the user, with a product that provides the continued safety and guidance intended. The range includes solid line markings that provide significant improvements in adhesion, long term durability and night time visibility in the wet when compared to conventional line marking systems.

Uses

The SAFETRACK® LM range currently consists of two products:

- Durable: a hard wearing, economical line marking
- Retromax: a solid line marking for highways

Each has its own unique features to cover all requirements and applications and is designed to exceed the performance requirements of BS EN 1436 and ensure that this performance is maintained over the long term. For areas of use for each system, please see Table on Page 3.

High quality pigmentation and 'non-yellowing' resin technology ensure that luminance and colour do not degrade under extended UV exposure.

Advantages

- BSI certified for use on UK Highways England Network
- Enhanced dry and wet night retro reflectivity – improves road safety
- Superb durability minimises maintenance costs, traffic management, congestion and disruption
- Environmentally friendly, solvent-free, lead-free, minimal VOC emissions
- Cold-applied - improved site safety; suitable where hot trades are prohibited e.g. airports
- Good thermal/dimensional stability - maintains profile, retains retroflectivity and does not mark in warm weather
- Superb adhesion to concrete, cobbles, block paving and asphalt
- Excellent weather & UV resistance
- Excellent skid resistance

- Available in a range of colours
- Can be supplied to suit single-operative hand application through to vehicle-mounted high output machines
- Lower whole life costs

Technical Data

- Application Temperature Range[1] -5 to 40 °C
- For in-situ performance refer to the Table on Page 3.

[1] SAFETRACK ®LM is supplied in winter and summer grades. The winter grade is automatically supplied in the UK between October and March. For application outside of these temperatures for further information please contact our Customer Services Department.

Surface Preparation

For the best durability all surfaces should be clean, dry and structurally sound. Any oil, grease, diesel or petrol should be removed using an appropriate method.

Asphalt

Hot-laid surfacing, such as hot rolled asphalt, stone mastic asphalt and bitmac generally need no preparation other than removing all loose debris.

Concrete

New concrete substrates should be a minimum of 7 days old. All laitance and contamination should be removed. Repairs to damaged concrete can be made using a METASET® ResiFilla rapid curing levelling and repair compounds.

Existing Thermoplastic Line Markings

SAFETRACK® LM can be applied directly over existing thermoplastics. Removing all surface contamination will enhance durability. Please note however that full durability performance will only be achieved by the complete removal of the existing thermoplastic lining.

Application

Immediately prior to application ensure the substrate is dry and above the dew point.

Mixing

SAFETRACK® LM consists of a pigmented resin base and BPO catalyst. The addition level of BPO catalyst is determined by temperature. Refer to the graph on Page 2. The difference in BPO catalyst levels allows adequate working life and will ensure full cure across the temperature range.

SAFETRACK® LM resin is supplied in a range of pack sizes. Some settlement may occur during storage and transportation so in all cases the contents should be stirred thoroughly using a mechanical stirrer, such as an air-driven drill (400-800rpm) and paddle, immediately prior to use or before decanting.

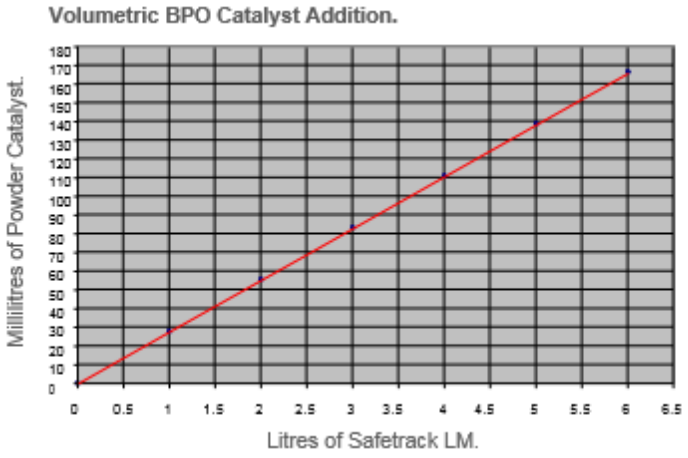
Decanting

Where material is supplied in bulk and there is a need to split the contents of the container to avoid unnecessary wastage, use a SAFETRACK® splitting kit.

BPO Catalyst Addition

For standard pack sizes of 8kg and 25kg the BPO catalyst is supplied pre-packed to the correct weight. It can also be supplied in bulk or when splitting packs, it will need to be measured out. The preferred technique of measuring and dispensing the BPO catalyst is by means of a volumetric scoop. The correct quantity volume of BPO catalyst can be derived from the graph below. Add the correct amount of BPO catalyst to the SAFETRACK® LM and mix thoroughly using a mechanical mixer until all the catalyst has dispersed which takes approximately one minute. Scrape around the sides and base of the mixing vessel to ensure thorough mixing and mix only enough material that can be applied within the working life.

Volumetric BPO Catalyst Addition.



Once the BPO catalyst is added it initiates the 'working-life' of the material during which time it should be applied. The 'working-life' of the material will vary depending upon the quantity mixed, the ambient and material temperature and the level of BPO catalyst addition. As a general rule the higher the temperature the shorter the working life. Do not add fresh material to partially cured material.

Working Life/Drive on Time

MATERIAL TEMPERATURE	WORKING LIFE	DRIVE ON TIME
25°C (Summer)	5 minutes	30 minutes
20°C (Summer)	8 minutes	40 minutes
15°C (Summer)	9 minutes	45 minutes
10°C (Summer)	12 minutes	60 minutes
15°C (Winter)	4 minutes	20 minutes
10°C (Winter)	5 minutes	25 minutes

5°C (Winter)	6 minutes	35 minutes
0°C (Winter)	8 minutes	40 minutes
-5°C	9 minutes	55 minutes

Application

SAFETRACK® LM is suitable for application by hand, draw-box or mechanical means. Refer to Table on Page 3 for further information.

To provide retro-reflectivity for highway use, an over-scatter of SAFETRACK® 'drop-on' Glass Beads is required. These must be applied immediately after LM resin has been laid and before the material starts to gel. SAFETRACK® Glass Beads have been chosen to achieve optimum performance with our SAFETRACK® LM systems. Do not substitute any other type of 'drop-on' bead otherwise performance may be impaired. Once applied SAFETRACK® LM should be allowed to fully cure before trafficking. Old SAFETRACK® LM markings can be easily over-coated with new after they have been well cleaned with a brush.

Application in Enclosed Areas or Areas of Poor Ventilation

If application is to proceed in an enclosed space or an area with restricted air circulation, such as a warehouse, there is a possibility of the system not fully curing at the surface. To prevent this from happening adequate air inflow and outflow must be provided. Mechanical ventilation such as industrial fans with an air exchange of 5 to 6 times an hour is normally sufficient.

Coverage

Retromax: 0.33kg/lm

Durable: 0.18kg/lm

SAFETRACK® Glass Beads: 0.04kg/lm

The required coverage rate will vary with surface texture and porosity. Coverage is based on a 100mm wide line.

Colours

SAFETRACK® LM is available in the following standard colours:

Retromax – White
Durable – White, Yellow

Cleaning

All tools and equipment should be cleaned with acetone before the material is allowed to cure.

Packaging & Storage

SAFETRACK® LM is supplied in the following kits:

8.08kg Patch Packs (white & yellow only)
8.08kg
25.25kg

SAFETRACK® 'Drop-on' Glass Beads are supplied in 25kg bags.

All components of the SAFETRACK® LM system should be stored in cool, dry, protected conditions, out of direct sunlight and in accordance with the relevant site Health & Safety regulations.
Storage temperature must not exceed 25 °C. Do not store near naked flames or foodstuffs.

Stored in unopened containers, under the correct conditions, the components have a minimum shelf life of twelve months. If your product is more than twelve months old you must contact GCP before use.

Health & Safety

Please refer to our Safety Datasheets for further information.

General Information

SAFETRACK® LM is part of a wide range of specialist surfacing and repair materials manufactured and supplied by GCP. These include the following related products:

- SAFETRACK® HW 'HAPAS' Type 1 High Friction Surfacing
- SAFETRACK® SC Colour Demarcation
- SAFETRACK® Overbanding & Crack Infill
- METASET® rapid curing levelling and repair compounds

If you require any further information on these or any other of our products, please contact us or visit our website www.gcpat.com.

AREAS OF USE	RETROMAX	DURABLE
Motorways & 'A' Roads – guide & centre lines	Yes	
Markings at Junctions e.g. stop line	Yes	
Minor Roads	Yes	Yes
Edge Lines	Yes	
Direction Arrows	Yes	Yes
Yellow Lines	Yes	Yes

Roads with street lighting	Yes	Yes
Airfields		Yes
Car Parks		Yes
Cycle lanes, Bus lanes, Restricted areas	Yes	Yes
Pedestrian crossings	Yes	Yes
Cobbles, Kerbs and Block Paving		Yes

IN-SITU PERFORMANCE	RETROMAX		DURABLE	
Dry Retroflectivity – mcd/m^2/lx	125	R2	N/A	N/A
Wet Retroflectivity – mcd/m^2/lx	48	RW2	N/A	N/A
Skid Resistance – SRT	53	S2	54	S2
Luminance Coefficient Qd	176	Q3	177	Q3

All results are based on laboratory accelerated wear tests after 3,500,000 wheel overs.

METHODS OF APPLICATION	RETROMAX	DURABLE
Brush application to masked areas	Yes	Yes
Hand box/draw box	Yes	Yes
Hand propelled extrusion machine for reactive plastic e.g. Durozet 5	Yes	Yes

SAFETRACK® LM is currently supplied as a 2-component system consisting of resin and BPO catalyst. It can be supplied in variable ratios and a 3-component form for application through high volume vehicle mounted system.

GCP0082 SAFETRACK® LM Data Sheet_0418

MA206 SAFETRACK® LM DATASHEET (Issue 9)

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gcpat.uk/solutions/products/safetrack-highway-maintenance-products/safetrack-lm