

A Guide to Road/Car Park Marking Systems

A choice for clients and specifiers

There are several product types on the market that are available to clients and specifiers. Each one has distinct advantages and disadvantages dependent on the intended use, location, surface type and traffic expectations. Each type can also be broken down into several sub-categories which are explained below.

The principal types are:

1. Hot Applied Thermoplastic
2. Traffic Paint
3. Pre-formed Thermoplastic
4. Tape
5. Temporary materials

An explanation of each type is given below along with recommended uses.

1. Hot Applied Thermoplastic

Used for more than 95% of public road markings in the UK since the 1950's. Extensive use around the world. Principal colours are white and yellow but others such as blue, red and green are available. White material usually includes glass beads in the mixture to give night time reflectivity and additional glass bead application to the surface can be specified. Adheres to bitumen surface by heat transfer bonding.

- a) Application Methods: Screed, Spray or Extrusion equipment by specialist contractors only.
- b) Suitable for: Outdoor use only on bitumen based surfaces such as asphalt, surface dressing, slurry, tarmac etc.
- c) Can be used on concrete and block paving with care but more likely to fail. A tack coat should be used first to improve adhesion.
- d) Not suitable for: Indoor surfaces, factory floors, underground car parks, multi-storey car parks (except top deck). Thermoplastic requires the action of weather (rain especially) to maintain good appearance and if used indoors or under cover is likely to discolour badly.
- e) Poor adhesion properties to paint or other materials unless they are well worn and expose bitumen surface beneath.
- f) Special variants made for Raised Rib and Wet Night Marking.

Other advantages: New Thermoplastic markings will normally adhere well to existing thermoplastic lines so it is often used to renew old worn markings. Can be applied up to 4mm thick and therefore will give good wear characteristics in most circumstances.

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2. Traffic Paint

Used for concrete, block paving and indoor surfaces as well as all other surfaces outdoors. Available in a wide range of colours and easily made up for special colours.

a) Sub-types

- i Chlorinated rubber – Solvent base paint applied in one or two coats by airless spray equipment or by roller/brush. Becoming unacceptable on environmental grounds because of high VOC content. Cheap and cheerful but gradually being replaced by water based equivalents. Likely to be banned by EU legislation in the near future.
- ii Epoxy paint – Solvent base paint either one or two pack types and applied in one or two coats. Lower VOC'S than chlorinated rubber but still includes organic solvents. Applied by airless or air assisted equipment and by roller/brush.
- iii Water-base Acrylic Paint – No organic solvents, slower drying. Ideal for environmentally sensitive areas. Applied in single or double coats by suitable equipment or by roller/brush.
Note: Water-base paints require suitably modified equipment containing stainless steel connections and fittings throughout. More expensive than chlorinated rubber.
- iv Methylmethacrylate Paint – Available in thin or high build versions and suitable for all surfaces. Usually very hard wearing but also much more expensive than other paints or thermoplastic. Strong smell of ammonia when being used may affect users and other persons nearby. Special high performance variant used for wet night marking.

b. Great care must be taken when choosing products to be used in food processing factories or warehouses as organic solvents may taint produce.

c. Advantages: Traffic paints adhere well to concrete and block paving.

d. Disadvantages: VOC's, smell, slow drying as noted above. Some paints can be slippery when wet if applied to smooth surfaces.

3. Pre-formed Thermoplastic

Comes to user in ready-made form. Pre-cut logos and designs are factory made. Use and wear characteristics are as per Hot applied Thermoplastic above. Ideal for prestige locations, complex logo designs and multi-colour usage. Expensive by comparison with Hot applied Thermoplastic. Applied by hand and gas torch.

4. Tape

Available in rolls. Many colours available. Easy to apply but often easy to remove by vandals. Different types give different wear characteristics i.e. foil type is very thin and wears faster than thicker multi-layer tapes. Expensive but easy to use. May require additional adhesives.

- i Suitable for smooth surfaces indoors or outdoors.
- ii Not suitable for open textured surfaces such as porous asphalt, SMA etc

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5. Temporary Materials

Tape and paints are available for temporary situations and are easily removed when no longer required. Used for sporting events i.e. marathons and TV/Film sets or advertising.

General Comments

All marking materials, however applied, have one common requirement if they are to give satisfactory performance- a clean dry surface to be applied to. In some circumstances it may be necessary to remove existing coatings, paint, dirt, water etc to ensure adhesion. Not all products will adhere to themselves or others if overcoated without suitable preparation – just like your woodwork at home.

If you take the advice of the specialists and choose a suitable product, a good contractor and ensure that surfaces are suitably prepared you will get the best from the product chosen.

Reference Documents & Certification:

Traffic Signs Regulations & General Directions 2002

Traffic Signs Manual Chapter 5

Specification for Highway Works

Highway Agency Sector Scheme No 7 - Road Marking Approved Contractors

Road Safety Markings Association- Update Your Roadmarkings

Road Safety Markings Association- Stanspec (reprinted every year)

Certified Operative Training Scheme-Road Marking & Road Studs

BS:EN: 1436 Road Marking Materials



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