

## **APPENDIX 1**

### **Types of Treatment used for Highway Maintenance**

High specification, durable materials are used on the carriageway. Effective and regular maintenance is also required to maintain the surface in good condition.

#### **1. Carriageways**

Carriageway maintenance falls into two categories, namely reconstruction for badly deteriorated sections and preventive maintenance.

Resurfacing involves the removal of the existing surface, usually to a depth of 100mm (sometimes 150mm for classified roads), and replacement with new high strength materials. Two surface course materials are used:

- Close Graded Macadam (for lightly trafficked local roads)
- Stone Mastic Asphalt (in areas of heavy traffic)

In the case of preventive maintenance two types of treatment are used either a thin layer of microsurfacing, 15 to 20mm thick, which is applied to the existing carriageway to extend its life or Surface Dressing which comprises of a layer of bitumen applied to the road surface and one or two layers of stone is used to cover and dress the bitumen. Both treatments seal the surface to prevent the ingress of water and restore the skidding resistance.

Where required for safety reasons, coloured high friction surfacing is applied to the surface of the carriageway.

An in-situ recycling process known as Retread has been evaluated as an alternative to carriageway reconstruction and is used where appropriate. The process involves breaking up, reshaping and relaying the existing road materials in the binder course. A new surface course is then laid on top. This should be slightly cheaper than the alternative of full reconstruction, but the main benefit will be the reduced environmental impact.

#### **2. Footways**

The majority of footways in the borough are surfaced in bituminous materials. The use of block paving is generally limited to town centres.

As for carriageways, the alternative treatments are reconstruction and preventive maintenance.

Where the footway is badly deteriorated, the surface is excavated to a depth of 75mm and replaced with new bituminous material. At the same time any damaged kerbs are replaced.

TREATMENT	DESCRIPTION
<b>Carriageway Resurfacing</b>  <b>(C/Resurface)</b>	Removal of the existing surface, usually to a depth of 100mm, and replacement with new high strength materials. Two surface course materials are used: Close Graded Macadam (for lightly trafficked local roads) Stone Mastic Asphalt (in areas of heavy traffic)  ****R denotes where Retread process is proposed.
<b>Carriageway Microsurfacing</b>  <b>(Micro)</b>	A cold-applied material comprising aggregate and bitumen emulsion applied 15-20mm thick as a preventive maintenance. This seals the surface and restores the skidding resistance.
<b>Surface Dressing</b>  <b>(S Dress)</b>	Surface Dressing which comprises of a layer of bitumen applied to the road surface and one or two layers of stone is used to cover and dress the bitumen. This seals the surface preventing the ingress of water and restores the skidding resistance.
<b>Footway Reconstruction</b>  <b>(F/Resurface)</b>	Where the footway is badly deteriorated, the surface is excavated to a depth of 75mm and replaced with new bituminous material. At the same time any damaged kerbs are replaced.
<b>Footway Microsurfacing (rubber chip)</b>  <b>(F/R/Chip)</b>	For moderate levels of deterioration where some regulating is required, a microsurfacing material is applied 15mm thick. The material being used in Dudley includes recycled rubber crumb (from scrap car tyres) as part of the aggregate.
<b>Footway Slurry Seal</b>  <b>(F/Slurry)</b>	A slurry of bitumen emulsion and fine aggregate is applied 6mm thick to seal the surface and prolong the life of the footway.

**Note**

(S Dress)

Headings used on Programme