### Pavement Layers

<table>
<thead>
<tr>
<th>Bound layers</th>
<th>Cul de sac - Home Zone</th>
<th>Spine Rd - Heavily Trafficked</th>
<th>Industrial Estates/Link roads</th>
<th>AADT &gt; 3000 vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surface course</strong></td>
<td>Minimum compacted thickness:</td>
<td>40mm</td>
<td>40mm</td>
<td>40mm</td>
</tr>
<tr>
<td>(Single course)</td>
<td>Chip size range:</td>
<td>10mm or 14mm</td>
<td>10mm or 14mm</td>
<td>10mm or 14mm</td>
</tr>
<tr>
<td>Material name:</td>
<td>SMA surf (IS EN 13108-5)</td>
<td>SMA surf (IS EN 13108-5)</td>
<td>SMA surf (IS EN 13108-5)</td>
<td>SMA surf (IS EN 13108-5)</td>
</tr>
<tr>
<td>Alternatively:</td>
<td>HRA (IS EN 13108-4)</td>
<td>HRA (IS EN 13108-4)</td>
<td>HRA (IS EN 13108-4)</td>
<td>HRA (IS EN 13108-4)</td>
</tr>
<tr>
<td><strong>Binder course</strong></td>
<td>Minimum compacted thickness:</td>
<td>100mm</td>
<td>60mm</td>
<td>60mm</td>
</tr>
<tr>
<td>(Single course)</td>
<td>Chip size range:</td>
<td>20mm</td>
<td>20mm</td>
<td>20mm</td>
</tr>
<tr>
<td>Material:</td>
<td>AC 20 dense bin (IS 13108-1)</td>
<td>AC 20 dense bin (IS 13108-1)</td>
<td>AC 20 dense bin (IS 13108-1)</td>
<td>AC 20 dense bin (IS 13108-1)</td>
</tr>
<tr>
<td><strong>Base course</strong></td>
<td>Minimum compacted thickness:</td>
<td>80mm</td>
<td>120mm</td>
<td>220mm (2 layers)</td>
</tr>
<tr>
<td>(Single or double course)</td>
<td>Chip size range:</td>
<td>32mm</td>
<td>32mm</td>
<td>32mm</td>
</tr>
<tr>
<td>Material name:</td>
<td>AC 32 dense base (IS 13108-1)</td>
<td>AC 32 dense base (IS 13108-1)</td>
<td>AC 32 dense base (IS 13108-1)</td>
<td></td>
</tr>
<tr>
<td><strong>Unbound layers</strong></td>
<td>Sub-base</td>
<td>Minimum compacted thickness:</td>
<td>150mm</td>
<td>150mm</td>
</tr>
<tr>
<td>Material name:</td>
<td>Refer to TII publication - Series 800 (Including Clauses 801-804)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Capping</strong></td>
<td>Compacted thickness:</td>
<td>Refer to TII publication - DN-PAV-0321 (i.e. CBR, plate compaction, water tables, etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material name:</td>
<td>Refer to TII publication - DN-PAV-0321 (i.e. Class 6F2/6F1, water tables, etc)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Surface course**

<table>
<thead>
<tr>
<th>Material description</th>
<th>Red SMA</th>
<th>Buff SMA</th>
<th>Black SMA with Red Chip</th>
</tr>
</thead>
<tbody>
<tr>
<td>For use on:</td>
<td>DEMURS</td>
<td>Cul de sacs, DEMURS</td>
<td>Traffic Calming Ramps</td>
</tr>
<tr>
<td>Min compacted thickness:</td>
<td>40mm</td>
<td>40mm</td>
<td>40mm</td>
</tr>
<tr>
<td>Chip size range:</td>
<td>10mm only</td>
<td>10mm only</td>
<td>10mm only</td>
</tr>
<tr>
<td>Min chip PSV value:</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Material name:</td>
<td>SMA surf PMB (IS EN 13108-5)</td>
<td>SMA surf PMB (IS EN 13108-5)</td>
<td>SMA surf PMB (IS EN 13108-5)</td>
</tr>
<tr>
<td>Chip colour:</td>
<td>Red</td>
<td>Buff</td>
<td>Red</td>
</tr>
<tr>
<td>Aggregate colour ratio:</td>
<td>Chips &gt;4mm: Coloured Aggregate</td>
<td>Chips &gt;4mm: Coloured Aggregate</td>
<td>Chips &gt;4mm: Coloured Aggregate</td>
</tr>
<tr>
<td>Pigment colour:</td>
<td>Red</td>
<td>Buff</td>
<td>n/a</td>
</tr>
<tr>
<td>Pigment % in mix:</td>
<td>5% (Typically)</td>
<td>5% (Typically)</td>
<td>None</td>
</tr>
<tr>
<td>Binder:</td>
<td>Black</td>
<td>Clear</td>
<td>Black</td>
</tr>
<tr>
<td>After treatment:</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Protected from Traffic:</td>
<td>4hrs min</td>
<td>4hrs min</td>
<td>2hrs min</td>
</tr>
</tbody>
</table>

### Notes

1. Any deviation from the requirements above must be approved in advance by SDCC Roads Department
2. Design must be in compliance with current IS EN 13108 and SR28
3. Design must be signed off by a certified person
4. Where a subgrade has a CBR lower than 2.5%, it is considered unsuitable for support, and must be ‘permanently improved’
5. SDCC require that 2 days advance notice by email is given by the developer to SDCC in advance of all bituminous work being carried out (date & approx times included)
6. Cores will be required post completion to verify laying depths and proper compaction; and shall be taken in accordance to the requirements of BS 594987 Clause 1
Developers/Builders and their staff who are involved in the construction of Road Pavements should be very familiar with the contents of the following documents:

<table>
<thead>
<tr>
<th>Document</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>TII - DN-PAV-03021</td>
<td></td>
</tr>
<tr>
<td>TII - Specification for Roadworks - Series 800 - Unbound materials (CC-SPW-00800)</td>
<td></td>
</tr>
<tr>
<td>BS 594987:2015 - Specification for transport, laying, compaction and product-type testing protocols</td>
<td></td>
</tr>
</tbody>
</table>

Notwithstanding the information contained in the above documents, SDCC TIC section draw particular attention to the items below where reoccurring problems are being regularly encountered at construction stage:

<table>
<thead>
<tr>
<th>Item</th>
<th>Problems</th>
<th>Remedy</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Drying out</td>
<td>Avoid stock-piling</td>
<td>Series 800 Clause 802/1</td>
</tr>
<tr>
<td>Laying</td>
<td>Being laid in layers greater than 225mm</td>
<td>Remind ground workers of the max layer depth</td>
<td>Series 800 - Clause 802 - Laying</td>
</tr>
<tr>
<td>Compaction</td>
<td>Incorrect procedures being employed</td>
<td>Compaction to be carried out to specification for unbound mixtures</td>
<td>Series 800 - Clause 802 - Table 8/4</td>
</tr>
<tr>
<td><strong>Sub-base</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Separation of large and fine aggregate; not being placed to specification</td>
<td>Avoid stock-piling; random spot-checks, turn away trucks with segregated material</td>
<td>Series 800 - Clause 802 - Transport</td>
</tr>
<tr>
<td>Laying</td>
<td>Irregular surface profile</td>
<td>Sub-base to be machine laid; finished layer must have a closed blinded finish</td>
<td>Series 800 - Clause 802 - Laying</td>
</tr>
<tr>
<td>Compaction</td>
<td>Incorrect compaction procedures being employed</td>
<td>Compaction to be carried out to specification for unbound mixtures</td>
<td>Series 800 - Clause 802 - Table 8/4</td>
</tr>
<tr>
<td><strong>Base</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Segregation of material being loaded; cold material delivered to site</td>
<td>Better quality control by Builder, and supervision of Sub-Contractor; temp control</td>
<td>BS 594987 Clause 4.1 &amp; 4.2</td>
</tr>
<tr>
<td>Laying</td>
<td>Laying during unsuitable weather conditions (i.e. heavy rain, cold temps)</td>
<td>Better programming</td>
<td>BS 594987 Clause 6.1, 6.2, 6.3 &amp; 6.4</td>
</tr>
<tr>
<td>Compaction</td>
<td>Incorrect compaction procedures being employed</td>
<td>Compaction to be carried out to specification for bound mixtures</td>
<td>BS 594987 Clause 9.1, 9.2 &amp; 9.3</td>
</tr>
<tr>
<td><strong>Binder course &amp; Surface course</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection of the exposed surface (Base)</td>
<td>Contaminated, open texture filled with clay/dirt; Prevention in the first instance; housekeeping; reduce time between laying courses</td>
<td>BS 594987 Clause 5.1</td>
<td></td>
</tr>
<tr>
<td>Bond coat between every bituminous course</td>
<td>Not being applied; not being verified; SDCC must receive notice of laying</td>
<td>Min bond coat - 0.7 litres/m²; solution must be allowed to oxidise &amp; become tacky</td>
<td>BS 594987 Clause 5.5</td>
</tr>
<tr>
<td>Material</td>
<td>Segregation of material being loaded; cold material delivered to site</td>
<td>Better quality control by Builder, and supervision of Sub-Contractor; temp control</td>
<td>BS 594987 Clause 4.1 &amp; 4.2</td>
</tr>
<tr>
<td>Laying</td>
<td>Laying during unsuitable weather conditions is completely unacceptable</td>
<td>Better programming &amp; quality control by Builder, and supervision of Sub-Contractor</td>
<td>BS 594987 Clause 6.1, 6.2, 6.3 &amp; 6.4</td>
</tr>
<tr>
<td>Compaction</td>
<td>Incorrect compaction procedures being employed</td>
<td>Compaction requirements for bound materials must be met</td>
<td>BS 594987 Clause 9.1, 9.2 &amp; 9.3</td>
</tr>
<tr>
<td><strong>Joints</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal</td>
<td>Mats not laid tightly together; joint holding water (freeze/thaw issues)</td>
<td>Better quality control by Builder, and supervision of Sub-Contractor</td>
<td>BS 594987 Clause 6.8</td>
</tr>
<tr>
<td>Edge-sealing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerbs and other edges</td>
<td>No evidence sealing is being carried out</td>
<td>Better quality control by Builder, and supervision of Sub-Contractor</td>
<td>BS 594987 Clause 6.9</td>
</tr>
<tr>
<td><strong>Topsealing:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal joints</td>
<td>TII/SDCC do not approve top-sealing with standard bitumen seal</td>
<td>Material must have min SRV (Skid Resistance Value) value of 55 (i.e. overbanding product)</td>
<td></td>
</tr>
<tr>
<td>Min on Arrival</td>
<td>See Table A.1 (Range 110-140 °C)</td>
<td>Material &amp; mix dependent</td>
<td>BS 594987 Table A.1</td>
</tr>
<tr>
<td>Min immediately prior to Rolling</td>
<td>See Table A.1 (Range 80-110 °C)</td>
<td>Material &amp; mix dependent</td>
<td>BS 594987 Table A.1</td>
</tr>
<tr>
<td><strong>Gradients</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ponding</td>
<td>Min 1:100 longitudinal; 1:40 crossfall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SDCC TIC Policy - Appendix 6 - Roads Minimum Standards