This Form is not to be used for the selection of cutter oil percentage for primes and primerseals. Refer to Form 395A

NOTES: 1. This chart shows the zones within which cutback bitumen will adhere to aggregate under various conditions, and the percentage of cutter oil to be added at various pavement temperatures. It is intended for use with class 170 Bitumen.

2. Use zone: -
   - A - B when aggregate is not precoated,
   - B - C when aggregate is precoated and contains moisture,
   - C - D when aggregate is precoated and free from moisture

3. Select cutter oil percentage from:
   - Middle portion of appropriate zone - when weather conditions are normal for the season,
   - Lower portion of appropriate zone - on days that are cooler than normal for the season,
   - Upper portion of appropriate zone - on days that are warmer than normal for the season.

4. When the pavement is partly in sun and partly in shade, select a cutter oil percentage for which the viscosity will be in the appropriate zone for both conditions.

EXAMPLE: Data - Expected pavement temperature at time of spraying is 22°C. Aggregate is precoated and free of moisture

Method - Use viscosity zone C - D

Follow the 22°C vertical line to the middle zone C - D. Opposite this point read the percentage cutter oil required in the mixture as 8% approximately.
DETERMINATION OF APPLICATION RATE OF HOT CUTBACK BITUMEN BINDER FOR SEALS AND RESEALS

The two steps in calculating the application rate of hot cutback bitumen binder are outlined below:

(i) Determination of application rate of cold cutback bitumen

\[
\text{Application rate of cold cutback bitumen} = \frac{\text{Application rate of cold residual bitumen}}{100} \times \left( \frac{100}{100 - \% \text{ of cutter oil}} \right)
\]

(ii) Determination of application of hot cutback bitumen

\[
\text{Application rate of hot cutback bitumen} = \frac{\text{Application rate of cold cutback bitumen}}{\text{Multiplier from RMS Form 500C spraying temperature}}
\]

Example 1
If the cold bitumen application rate is 0.95 L/m² and the selected cutter oil content to be used is 6% then;

\[
\text{Application Rate of Mixture (Cold)} = \frac{0.95 \times 100}{100-6} = 1.01 \text{ L/m}^2
\]

If the proposed spraying temperature is 150°C and the cold application rate of mixture is 1.01 L/m², then:

\[
\text{Application Rate of Mixture (@ 150°C using multiplier from RMS 500C)} = 1.01 \times 1.0897 = 1.10 \text{ L/m}^2
\]

Example 2
If the cold bitumen application rate is 0.60 L/m² and the selected cutter oil content to be used is 12% then;

\[
\text{Application Rate of Mixture (Cold)} = \frac{0.60 \times 100}{100-12} = 0.68 \text{ L/m}^2
\]

If the proposed spraying temperature is 135°C and the cold application rate of mixture is 0.68 L/m², then:

\[
\text{Application Rate of Mixture (@ 135°C using multiplier from RMS 500C)} = 0.68 \times 1.0792 = 0.73 \text{ L/m}^2
\]

MAXIMUM HEATING TEMPERATURES FOR CUTBACK BITUMEN BINDERS

<table>
<thead>
<tr>
<th>Cutback Bitumen</th>
<th>Conventional Cutter Oil</th>
<th>Fast Evaporating Cutter Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>AMC00 AMC0 AMC1 AMC2 AMC3 AMC4 AMC5 AMC6 AMC7</td>
<td>FC2 FC3 FC4 FC5 FC6 FC7</td>
</tr>
<tr>
<td>Equivalent % Cutter Oil</td>
<td>56 44 34 27 21 16 11 7 3</td>
<td>25 20 15 10 7 3</td>
</tr>
<tr>
<td>Max. Heating Temperature (°C)</td>
<td>30 55 80 100 115 135 150 160 175</td>
<td>95 95 110 140 150 160</td>
</tr>
</tbody>
</table>