Marcus Wax Applications for Thermoplastic Road Markings

Marcus wax to ease application and improve durability of Thermoplastic Road Markings

**Thermoplastic Road Markings (TRM)**

Marcus wax can be used in many TRM formulations to improve properties including:
- Modification / reduction of viscosity to facilitate application, especially in spray applied systems
- Increase formulation softening point
- Reduce settling of glass beads suspended in formulation
- Improve durability of TRM's

Marcus wax can overcome drawbacks associated with other techniques of reducing formulation viscosity that might include addition of oils (mineral, castor), which can bleed from the formula and cause other problems.

There are many variations of TRM's depending on vendor and application. Marcus waxes are compatible with many of these systems. A general Hydrocarbon TRM formulation would include:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aliphatic (C4,C5) Hydrocarbon</td>
<td>18-27</td>
</tr>
<tr>
<td>Marcus Wax (M300 or M500)</td>
<td>2-8</td>
</tr>
<tr>
<td>Inorganic filler (Calcium Carbonate, silica, Glass Beads)</td>
<td>20-75</td>
</tr>
<tr>
<td>Pigment</td>
<td>2-15</td>
</tr>
</tbody>
</table>

Some formulations will incorporate additional components such as plasticizers, antioxidants, and EVA resins.

Formulations that include rosin base resins combined with EVA resin also can use Marcus wax to improve application properties and durability.

In general TRM's are applied hot, usually 150-200C and can either be spray applied or extruded. Spray applications benefit from low and consistent viscosity needed for proper application.

Glass beads are usually incorporated into road marking formulations to increase reflectivity of light. The wax/resin system should allow for good glass bead adhesion as well as aid in suspending the bead (anti settling) in the molten formulation during application.

In general formulations must be stable for extend periods at elevated temperatures and have the ability to be reheated without degradation of properties in the US and many other countries, markings for roads and airports must usually meet specific performance and application requirements based on local, State and Federal regulations. Specific requirements should always be consulted beforehand.

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