TACK, BOND AND UNDERSEAL SPECS

Mike Brown, Oldcastle Materials Tx, Inc.
Gisel Carrasco, Austin District, TxDOT
What is the Big Deal?

- Tack, bond, or underseal
  - Does it really make a difference?
  - Do we have bonding issues?
- New materials and technology
  - Conventional tack coat and underseals
  - Tracking-resistance asphalt interlayer (TRAIL)
  - Spray paver
- Industry experience
- District experience
WORK ZONE RISK ASSESSMENT
What type of asphalt membrane is this?

- Tack
- Bond
- Underseal

Start the presentation to activate live content.

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What do you think is the total shot rate?

- 0.25 gal/sy
- 0.125 gal/sy
- 0.06 gal/sy
Can an acceptable cure time for products to be completed tracking?

- 1 hour
- 40 minutes
- 15-30 minutes

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How can you tell if the shot rate is appropriate?

There is full product coverage on the pavement.

The product is not being picked up by the delivery trucks, MTV, or paver.

There is no pick up on your boot soles.

Start the presentation to activate live content
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What shot rate would you recommend on this untreated subgrade if you were applying a thin overlay mix (≤ 1")?

- 0.15 gal/sy
- 0.08 gal/sy
- 0.02 gal/sy
Conventional Underseal & TOM Overlay

I-35 Front. Road, Williamson Co.
Conventional Underseal
Hot-Applied Non-Tracking Tack
Spray Paver
**Austin District Projects**

- **SH 29 Intersection with Parmer Lane**
  - TOM-C, PG 76-22
  - Hot-applied Non-tracking tack

- **US 183, Williamson Co.**
  - TOM-C, Cl A, PG 70-22 & Emulsified Asphalt NTT

- **SH 130, Williamson Co.**
  - CMHB-F, PG 70-22
  - Conventional Underseal

- **SH 45 Frontage Road, Round Rock**
  - Emulsified Asphalt Non-tracking Tack
CONTENT DISCLAIMER

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If you disagree with the information presented today, let's have a friendly conversation tomorrow. All characters appearing in this work are fictitious. Any resemblance to real persons, living or dead, is purely coincidental.

If you can still read this font size, it means that we have a high quality projector or you have good eye sight. If you are still reading, it means that we are spending too much time in this slide and we need to move on.

AUSTIN DISTRICT
SPECIAL SPECS
Before: “Multi Option” General Note Under Item 316

- Use Seal Coat, Spray Applied Underseal Membrane, or Polymer-Modified Asphalt Cement Non-Tracking Tack Coat – Hot Applied. Residual rate to be determined based on application method and roadway condition. Apply Aggregates (Multi Option) at a Contractor selected rate to avoid “pickup” of the asphalt. Asphalts (Multi Option) shall be per Tier II of the Seal Coat Material Selection Table or requirements for Polymer-Modified Asphalt Cement Non-Tracking Tack Coat – Hot Applied. Aggregate, asphalts, and application shall be in accordance with the general notes and latest specification or provision for the method chosen by the Contractor. Payment will be made using Item 316 Asphalt (Multi Option). Aggregate will be subsidiary.

Now: Special Specifications

- SS3041, Underseal Course
- SS3042, Bonding Course
### Austin District Special Specifications

#### MPL TRAIL TABLE

<table>
<thead>
<tr>
<th>TRAIL Product</th>
<th>Product Type</th>
<th>Supplier</th>
<th>Typical Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrafuse</td>
<td>Hot Asphalt</td>
<td>Blackridge</td>
<td>tack or seal</td>
</tr>
<tr>
<td>Trackless Tack</td>
<td>Emulsified Asphalt</td>
<td>Blackridge</td>
<td>tack</td>
</tr>
<tr>
<td>NTQS-1HH</td>
<td>Emulsified Asphalt</td>
<td>Asphalt Products Unlimited</td>
<td>tack</td>
</tr>
<tr>
<td>Underseal</td>
<td>Hot Asphalt</td>
<td>Jebro</td>
<td>tack or seal</td>
</tr>
<tr>
<td>CBC-1H</td>
<td>Emulsified Asphalt</td>
<td>Ergon Asphalt and Emulsions</td>
<td>tack</td>
</tr>
</tbody>
</table>

#### Tack Coat
- Subsidiary to hot mix bid item
- Use when placing a HMA lift over a new layer in accordance with the applicable HMA specification

#### SS 3042, Bonding Course
**Materials**
- Tracking-resistant asphalt interlayer (listed as “tack in MPL”)
- Spray applied underseal membrane

**Construction**
- Road preparation
- Minimum application rates
- Shear test

**Measurement**
- Paid by volume of the asphalt material

#### SS 3041, Underseal Course
**Materials**
- Tracking-resistant asphalt interlayer (listed as “seal” in MPL)
- Spray applied underseal membrane
- Seal Coat

**Construction**
- Road preparation
- Minimum application rates
- Shear test

**Measurement**
- Paid by volume of the asphalt material
- Aggregate is subsidiary
Recommended Application Rates

- The Engineer may adjust the application rate taking into consideration the existing pavement surface conditions.
- Unless otherwise directed, apply the selected material at the minimum rate listed below:

**SS 3042, Bonding Course**

<table>
<thead>
<tr>
<th>Material</th>
<th>Minimum Rate (gallons* per square yard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAIL</td>
<td>0.06</td>
</tr>
<tr>
<td>Spray Applied Underseal Membrane</td>
<td>0.11</td>
</tr>
<tr>
<td>*Net volume</td>
<td></td>
</tr>
</tbody>
</table>

**SS 3041, Underseal Course**

<table>
<thead>
<tr>
<th>Material</th>
<th>Minimum Rate (gallons* per square yard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAIL</td>
<td>0.15</td>
</tr>
<tr>
<td>Spray Applied Underseal Membrane</td>
<td>0.20</td>
</tr>
<tr>
<td>Seal Coat – Tier II emulsion</td>
<td>0.24</td>
</tr>
<tr>
<td>Seal Coat – Tier II asphalt</td>
<td>0.20</td>
</tr>
<tr>
<td>*Net volume</td>
<td></td>
</tr>
</tbody>
</table>
Shear Test

- Tex-249-F, Shear Bond Strength Test
  - Developed by TTI
  - 0.2 in/min loading rate
- The Engineer will select the core locations
- Informational purposes
When to use them?

- HMA overlay over existing HMA pavement
- Bonding Course
  - Default option
- Underseal Course
  - Notch and widen projects
  - Milled surfaces with visible cracking
  - PFC overlay
Please keep our service men and women, first responders, law enforcement and those who have the responsibility for them in our thoughts and prayers!