## Special Provision to Special Specification 3096 Asphalts, Oils, and Emulsions



Special Specification 3096, "Asphalts, Oils, and Emulsions," is amended with respect to the clause cited below. No other clause or requirements of this Item are waived or changed.

Section 3096.2.2, Table 3 Polymer-Modified Asphalt Cement has been replaced by the following:
Table 3
Polymer-Modified Asphalt Cement

| Property | Test Procedure | Polymer-Modified Viscosity Grade |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AC-12-5TR |  | NT-HA ${ }^{1}$ |  | AC-15P |  | AC-20XP |  | AC-10-2TR |  | AC-20-5TR |  |
|  |  | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max |
| Polymer |  | TR |  | - |  | SBS |  | SBS |  | TR |  | TR |  |
| Polymer content, \% (solids basis) | $\begin{gathered} \hline \frac{\text { Tex-533-C }}{\text { or Tex- }} \\ 553-C \end{gathered}$ | 5.0 | - | - | - | 3.0 | - | - | - | 2.0 | - | 5.0 | - |
| Dynamic shear, $\mathrm{G}^{*} / \sin \delta, 82^{\circ} \mathrm{C}$, $10 \mathrm{rad} / \mathrm{s}$, kPa | T315 | - | - | 1.0 | - | - | - | - | - | - | - | - | - |
| Dynamic shear, $\mathrm{G}^{*} / \sin \delta, 64^{\circ} \mathrm{C}$, $10 \mathrm{rad} / \mathrm{s}$, kPa | T315 | - | - | - | - | - | - | 1.0 | - | - | - | 1.0 | - |
| Dynamic shear, $\mathrm{G}^{*} / \sin \delta, 58^{\circ} \mathrm{C}$, $10 \mathrm{rad} / \mathrm{s}, \mathrm{kPa}$ | T315 | 1.0 | - | - | - | - | - | - | - | 1.0 | - | - | - |
| Viscosity $140^{\circ} \mathrm{F}$, poise $275^{\circ}$ F, poise $275^{\circ} \mathrm{F}$, Pa -s | $\begin{aligned} & \text { T } 202 \\ & \text { T } 202 \\ & \text { T } 316 \end{aligned}$ | $1,200$ |  | - | $\begin{gathered} - \\ 4.0 \\ \hline \end{gathered}$ | 1,500 | $\overline{8.0}$ | 2,000 | - | 1,000 | 8.0 | 2,000 | $\overline{10.0}$ |
| Penetration, $77^{\circ} \mathrm{F}, 100 \mathrm{~g}, 5 \mathrm{sec}$. | T 49 | 110 | 150 | - | 25 | 100 | 150 | 75 | 115 | 95 | 130 | 75 | 115 |
| Elastic recovery, $50^{\circ} \mathrm{F}$, \% | Tex-539-C | 55 |  |  |  | 55 | - | 55 | - | 30 | - | 55 | - |
| Polymer separation | Tex-540-C | None |  | - |  | None |  | None |  | None |  | None |  |
| Flash point, C.O.C., ${ }^{\circ} \mathrm{F}$ | T 48 | 425 |  | 425 |  | 425 | - | 425 | - | 425 | - | 425 | - |
| Tests on residue from RTFOT aging and pressure aging: Creep stiffness $\begin{aligned} & \mathrm{S},-18^{\circ} \mathrm{C}, \mathrm{MPa} \\ & \mathrm{~m} \text {-value, }-18^{\circ} \mathrm{C} \end{aligned}$ | T 240 and R 28 T 313 | $\overline{0.300}$ | 300 | - | - | - $\square^{-}$ | 300 | ${ }_{0}^{-}{ }^{-}$ | 300 | - ${ }^{-}$ | 300 | - ${ }^{-}$ | 300 |

1. This is a hot-applied TRAIL product.

Section 3096.2.5, Diluted Emulsions tables has been added.
Diluted Emulsions. Provide emulsified asphalt that is homogeneous, does not separate after thorough mixing, and meets the requirements for the specified type and grade in Tables 12A, and 12B, where the suffixes 50/50, 40/60, and 30/70 mean 50\% emulsion diluted with $50 \%$ water; $40 \%$ emulsion diluted with $60 \%$ water, and $30 \%$ emulsion diluted with $70 \%$ water, respectively. For example, CSS-1H 40/60 means $40 \%$ CSS-1H diluted with $60 \%$ water and AE-P 30/70 means 30\% AE-P diluted with 70\% water.

Table 12A

| $\begin{gathered} \text { Table 12A } \\ \text { Diluted CSS-1H } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Property | Test Procedure | Type-Grade |  |  |  |  |  |
|  |  | Diluted Slow-Setting |  |  |  |  |  |
|  |  | CSS-1H 50/50 |  | CSS-1H 40/60 |  | CSS-1H 30/70 |  |
|  |  | Min | Max | Min | Max | Min | Max |
| Viscosity, Saybolt Furol $77^{\circ} \mathrm{F}$, sec. | T72 | Report Only |  | Report Only |  | Report Only |  |
| Distillation test: <br> Residue by distillation, \% by wt. <br> Oil distillate, \% by volume of emulsion | T59 | $30$ | $\overline{-}$ | $24$ | $-$ | 18 | $\overline{-}$ |
| Tests on residue from distillation: |  |  |  |  |  |  |  |
| Penetration, $77^{\circ} \mathrm{F}, 100 \mathrm{~g}, 5 \mathrm{sec}$. | T 49 | 40 | 110 | 40 | 110 | 40 | 110 |
| Solubility, \% | T 44 | 97.5 | - | 97.5 | - | 97.5 | - |
| Ductility, $77^{\circ} \mathrm{F}, 5 \mathrm{~cm} / \mathrm{min}$., cm | T 51 | 80 | - | 80 | - | 80 | - |

Table 12B
Diluted AE-P

| Property | Test Procedure | Type-Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Diluted Slow-Setting |  |  |  |  |  |
|  |  | AE-P 50/50 |  | AE-P 40/60 |  | AE-P 30/70 |  |
|  |  | Min | Max | Min | Min | Max | Min |
| Viscosity, Saybolt Furol $122^{\circ} \mathrm{F}$, sec. | T 72 | Report Only |  | Report Only |  | Report Only |  |
| Asphalt emulsion distillation to $500^{\circ} \mathrm{F}$ followed by Cutback asphalt distillation of residue to $680^{\circ} \mathrm{F}$ : Residue after both distillations, \% by wt. Total oil distillate from both distillations, \% by volume of emulsion | T 59 \& 78 | $\begin{gathered} 20 \\ 12.5 \end{gathered}$ | $20$ | $\begin{gathered} 16 \\ 10.0 \end{gathered}$ | $16$ | $\begin{aligned} & 12 \\ & 7.5 \end{aligned}$ | $12$ |
| Tests on residue after all distillation(s): Solubility, \% Float test, $122^{\circ} \mathrm{F}$, sec. | $\begin{aligned} & \text { T } 44 \\ & \text { T } 50 \end{aligned}$ | $\begin{gathered} 97.5 \\ 50 \end{gathered}$ | $\stackrel{-}{200}$ | $\begin{gathered} 97.5 \\ 50 \end{gathered}$ | $\stackrel{-}{200}$ | $\begin{gathered} 97.5 \\ 50 \end{gathered}$ | $\stackrel{-}{200}$ |

