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(54) Title: REJUVENATION OF RECLAIMED ASPHALT

(57) Abstract: Asphalt compositions comprising reclaimed asphalt and an ester-functional rejuvenating agent derived from tall oil are disclosed. Rejuvenated binder compositions are also included. The rejuvenating agents restore to reclaimed asphalt desirable properties of virgin asphalt. Reduced glass-transition onset temperatures and improved creep stiffness in the rejuvenated binders translate to improved low-temperature cracking resistance in the asphalt. The rejuvenating agents impart desirable softening at low dosage while also maintaining acceptable penetration values. Dynamic shear rheometry results demonstrate that criteria for asphalt compositions under low, intermediate, and high temperature conditions can be achieved, and the asphalt will have good fatigue cracking resistance and rutting avoidance. The rejuvenating agents reduce the temperature needed to compact or mix asphalt compositions, which conserves energy and reduces cost. The rejuvenated asphalt and binder compositions enable greater use of reclaimed asphalt, especially RAP, and help the road construction industry reduce its reliance on virgin, non-renewable materials.

