

Superpave uses a completely new system for testing, specifying, and selecting asphalt binders. While no new aggregate tests were developed, current methods for selecting and specifying aggregates were refined and incorporated into the Superpave mix design system. Superpave volumetric mixture requirements were also established from currently used criteria.

### **Asphalt Binder**

The new Superpave binder specification, (AASHTO MP1, given in Appendix A) is unique in that it is performance based and that binders are selected on the basis of the climate and traffic in which they are intended to serve. The physical property requirements are constant among all grades of binders. What differentiates the various binder grades is the temperature at which the requirements must be met. For example, a binder classified as a PG 64-22 means that the binder must meet high temperature physical property requirements at least up to a temperature of 64°C and low temperature physical property requirements at least down to -22°C.

The Appendix provides a listing of the more common grades as published in AASHTO MP1. However, the PG grades are not limited to those given classifications. In actuality, the specification temperatures are unlimited, extending unbounded in both directions. The high and low temperatures extend as far as necessary in standard six-degree increments. For example, even though a PG 58-10 is not shown, it exists as a legitimate grade in the system.

Even with binder grades classified according to high and low temperature categories, more information is needed to select a binder for a particular location. A module in the Superpave software assists users in selecting binder grades. Three methods are available by which the user can select a binder grade:

*By Geographic Area:* An Agency would develop a map showing binder grade to be used by the designer based on weather and/or policy decisions.

*By Pavement Temperature:* The designer determines