



Figure 3.4 Superpave Binder Grade Selections for Cleveland

factors, it may not be necessary or cost-effective to require indiscriminately high values of reliability or abnormally conservative high or low temperature grades.

The Superpave computer program performs all of these calculations based on minimal user input. For any location, the user can enter a minimum reliability and the software will calculate the required asphalt binder grade. Alternatively, the user can specify a desired asphalt binder grade and Superpave will calculate the reliability. Consequently, agencies are faced with engineering management decisions. They will have to decide the level of reliability to be used. Depending on the policy established by each individual agency, the selected reliability may be a function of road classification, traffic level, cost, and other factors.

Selected contents of the complete weather station database contained in Superpave are available in Report SHRP-A-648, "Weather Database for the Superpave™ Mix Design System." The report includes tables of site location and calculated temperatures and binder selection for 50 and 98 percent reliability. Table 3.1 contains the selected binders for a sample of cities from this report, as well as the actual reliability calculated for the minimal grades listed for 50 and 98 percent reliability.

►► Adjusting Binder Grade Selection For Traffic Speed and Loading

The asphalt binder selection procedure described is the basic procedure for typical highway loading conditions. Under these conditions, it

is assumed that the pavement transient loads. For the high specified properties relating to heavy traffic has an additional effect on pavement performance. For high standing load applications. For high traffic volume, it may be selected one high temperature grade higher than the PG 58. For standing design temperature grades higher, such as PG 64.

Also, an additional shift in the selected high temperature grade for heavy traffic loads. If the design traffic volume is less than 30,000,000 equivalent single axle loads (ESAL), it is encouraged to consider selecting a higher temperature grade than the selection based on a design traffic volume that exceeds 30,000,000 ESAL, then the temperature grade higher than the selection based on a design traffic volume of 30,000,000 ESAL.

It should be emphasized that the Superpave design procedure does not guarantee total pavement performance is greatly affected by traffic volume. Permanent deformation or rutting of the mix, which is greatly influenced by high temperature cracking properties. Engineers should consider these factors when selecting binder grades.

Mineral Aggregate

important. There was general agreement that the central role in overcoming pavement performance problems were temperature cracking were the most significant. The researchers used these survey results to determine the properties that needed to be considered in aggregate gradation was developed.