

## COMPARISON OF CLUSTERING APPROACHES ON TEMPERATURE ZONES FOR PAVEMENT DESIGN

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### *ABSTRACT*

The asphalt pavement response depends on various factors including mixture properties, traffic and environmental characteristics. The selected grade of binder primarily depends on maximum and minimum pavement temperature expected in that particular region. In absence of actual pavement temperature data, air temperature data has been used as surrogate model. One such example is Superpave specifications for asphalt binder specifications. However, in other parts of world, availability of historical database is rare and network of weather stations are sparsely located. A map of homogeneous zones that experience similar temperature will facilitate binder selection for a given location. The temperature data collected by Indian meteorological department over past 63 years was used in this research. Using the above data, homogeneous air temperature regions were developed based on cluster analysis approach. This study compares homogeneous regions developed using unsupervised cluster analysis algorithms. Key issues with these clustering techniques are discussed in detail.