

Improvements to bitumen emulsions for the better performance of surface dressing

Surface dressing can be used as a successful and economical method on any type of roads, from trunk roads to gravel roads. The main object of surface is seal the existing road pavement; thereby arresting disintegration and providing a proper road network.

However premature failures can be observed on surface dressings in many instances. Therefore a research study was carried out in order to find the causes for this unsatisfactory consistency. As the preliminary stage field investigations were carried out on existing surface dressed roads to identify the failures. On going construction sites were investigated, focusing more on the quality control measures taken at the sites as well as the quality of the material.

Database of the test results on the samples of binder collected at the sites as well as from the manufacturing plant ere established. More emphasis was given to the properties, which are frequently out of the specification limits, and effect of these properties was studied Further research was carried out for the methods to improve the quality of the binder.

Best choice of emulsifier from the chemical stand for surface dressings, optimizing the particle diameter, type and speed of the manufacturing plant, type and penetration of

bitumen used and settings of the plant such as temperature and pressure are some of the important factors which should be controlled. A modifier which is cheap and locally available in plenty could be recommended to improve the rheological properties of the binder.