

A Guide to ASPHALT MIXES FOR ROUNDABOUTS

To assist in attaining the optimum performance for asphalt surfaced roundabout pavements under extreme traffic loading conditions, there are a number of measures that can be taken.

These measures are appropriate for heavily trafficked pavements, with a large number of commercial vehicles and a likelihood of channelised vehicle movements. As well, smaller radius roundabouts with slow moving traffic tend to add to pavement stress and so increase the need for design and construction care.

- Asphalt should be a dense, continuously graded mix of an intermediate sized stone — 14mm aggregate for deformation resistance and resistance to plucking.
- For a full depth asphalt or deep lift asphalt pavement, the wearing course should have a Class 320 binder, possibly stiffened with a modifier such as Gilsonite. A Class 600 binder would be appropriate if available. For existing pavements, one should ensure that the stiffness of any overlay remains compatible with that of the underlying asphalt layer.

- For a thinner asphalt surface, a Class 170 bitumen could be improved with a polymer modifier to give added tearing and deformation resistance, as an alternative to a Class 320 bitumen.
- Where roundabouts are constructed on existing pavements crossfall corrections or heavy patching often results in variations in asphalt layer depth. Appropriate mix size should be used in correction layers. The final surfacing layer should have limited variation in depth.
- Special care should be taken with pneumatic tyred rolling to give a dense, closed up surface.
- Traffic should be kept off the warm asphalt until it has cooled sufficiently to take severe loading. This may entail overnight closure or even hosing down to accelerate cooling if the lane must be opened.

Roundabouts in lightly trafficked streets or on large radius roundabouts in highway situations will be adequately served with the mixes that are presently used for the connecting streets and roads.

