



CLIENT NOTE R2K-01

DENSE GRADE ASPHALT: Highways, Arterial, Industrial and Distributor Roads

Dense graded asphalt or Asphaltic Concrete (AC) is a continuously graded mixture of coarse and fine aggregates, mineral filler and bitumen, produced hot in a mixing plant. It is delivered, laid and compacted while hot.

Roads2000 manufactures its own dense grade asphalts and is capable of producing and laying mixes with maximum stone sizes from 20mm to 7mm.

Generally highways, arterial, industrial and distributor roads require stiffer dense grade asphalts to compensate for the increased traffic loading. The IPWEA/AAPA Technical Specification for Supply and Laying of Hot Asphalt Road Surfacing (Rev 2) provides advice on which dense grade designs should be used in particular circumstances.

Roads2000 uses Class 320 bitumen exclusively for all dense grade asphalts. This ensures that issues related to “soft” asphalts eg flushing, scuffing and shoving are minimised.

When laying dense grade asphalts, it is recommended that layer thicknesses are not less than 2.5x the stone size or greater than 5x the stone size eg 10AC should be no thinner than 25mm or thicker than 50mm. When laying multi-layer asphalts, the previous layer must be allowed to cool below 40°C. Compaction should be provided by a steel roller initially and back rolled with a rubber-tyred roller.

If a dense graded asphalt surface is to be opened to the traffic immediately, it is recommended that sand be spread lightly on the surface to minimise scuffing while the asphalt is still hot. The slippery surface must be sign posted with the appropriate warning signage.

In areas where there are significant braking and turning movements and or increased commercial traffic, it is recommended that “intersection” mixes are used or alternatively stiffer and/or modified bitumen binders within the mix design.

Roads2000 can provide advice to clients on the mix designs where required.

References

1. IPWEA/AAPA Technical Specification, Tender Form and Schedule for Supply and Laying of Hot Asphalt Road Surfacing (Rev 2, April 2002)
2. AAPA Fundamentals of Bituminous Surfacing (2010)