



Pavement Materials

- M1. An asphalt concrete mixture has a density of 2385 kg/m³. The asphalt content is 6.8% and asphalt absorption is 0.7%. Find the mass of the aggregate and the net asphalt in each cubic Meter.
- M2. An asphalt concrete mix has a density of 2370 kg/m³ at an asphalt content of 5.8%. The asphalt absorption is 0.9%. The relative density of the aggregates is 2.67; of the asphalt, 1.05. Find the percents of air voids, VMA, and VFA.
- M3. Water absorption of an aggregate is 1.3%. Estimate the asphalt absorption for this aggregate.
- M4. Asphalt content of a mix is 5.7%, expressed as a percent of the mass of the aggregates. Find the percent of air voids and voids in mineral aggregate if asphalt absorption is 0.5% and the relative densities of the aggregate and asphalt cement are 2.66 and 1.02, respectively. Density of the mix is 2390 kg/ m³.
- M5. What causes aging or cracking of asphalt concrete? How are aging and cracking controlled in the design, Production, and construction of pavement?
- M6. What characteristics of an asphalt concrete mix are the most important in the development of strength?
- M7. Specifications for asphalt concrete often give a minimum and a maximum value for allowable air voids. Why? What properties are affected and how?

M8. Why is a minimum percentage for the VMA in an asphalt concrete mix usually specified? What property is affected and how'?

M9. What is mineral filler? Why is it important?

M10. What properties of aggregates are important to ensure a high degree of skid resistance in a pavement Surface? Why?

M 11. Write a one-to- two-page report on the design of asphalt concrete mix as conducted in the laboratory visit.