

Birzeit university

Civil engineering department – highway engineering

Quiz 5

Q1 : Determine the required asphalt concrete surface thickness assuming subgrade with 6.5 CBR, 12-in untreated aggregate base, 5-million design ESAL, and 60° F MAAT .

Q2 : A two-layer flexible pavement structure is to be designed for 3.2 structural number and one million design ESAL using minimum aggregate base thickness (CBR=70). Determine the required asphalt concrete surface thickness ($E=350000$ psi) .

Q3 : Determine the design ESAL for one-lane driveway mainly used by 15 single trucks/day with each truck having 16k single axle and 32k tandem axle considering 20 years analysis period. It is expected that the daily truck number will increase by 5% annually .