

Figure: 1

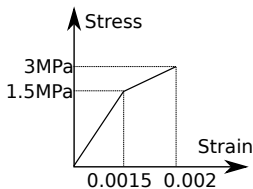


Figure: 2

Q.1

a In Figure 1, Y-axis and X-axis denotes σ_A/σ_Y and number of load cycle (n) respectively. Find σ_A for $n=250$ and endurance limit if $\sigma_Y = 250\text{MPa}$.

b For Figure 2, find Yield stress from offset method.

c Find modulus of resilience and toughness for Figure 2.

Q.2

a Cement A has more C_3A content than cement B. Assuming only hydration of C_3A , which will have more initial setting time? Explain.

b Cement A passes 6% and Cement B passes 15% from $IS90\mu$ sieve. Which of two will have faster rate of hydration? Explain.

c Write down a compound which contributes least to cement composition and its positive effect on cement.