

## Co-efficient of Variation of Fibre Diameter

According to Palmer, the co-efficient of variation (CV) of fibre diameter of three-component blend can be predicted as follows:

$$C_2 = x_1 C_1^2 + x_2 C_2^2 + x_3 C_3^2 + 5,29 \times 10^4 \left\{ x_1 x_2 \left( \log_{10} \frac{d_1}{d_2} \right)^2 + x_2 x_3 \left( \log_{10} \frac{d_2}{d_3} \right)^2 + x_3 x_1 \left( \log_{10} \frac{d_3}{d_1} \right)^2 \right\}$$

where C = CV of blend

$C_1$ ,  $C_2$  and  $C_3$  are the CV's (in %) of each component

$d_1$ ,  $d_2$  and  $d_3$  are the mean fibre diameters (in m) of each component, and  $x_1$ ,  $x_2$  and  $x_3$  are fractions of each component blended.

In a two-component blend  $x_3 = 0$ .