Common Expression to Combine Long Term Losses (Canadian Code)

$$\Delta f_{ps} = \frac{n f_c C_t + \varepsilon_{sh} n E_c + f_{re}}{1 + n(\rho_p + \rho_s)(1 + e^2 / r^2)(1 + 0.8 C_t)} \ldots\ldots\ldots 10.4.8$$

Where, Δf_{ps} = Loss of Prestress

n = Average Modular Ratio

f_c = Concrete Stress at the Level of Tendon due to sustained load & Initial Prestressing Force

C_t = Creep Co-efficient

ε_{sh} = Shrinkage Strain

E_c = Modulus of Elasticity of Concrete

f_{re} = Intrinsic Relaxation of Prestressing Steel

$\rho_p = A_{ps} / A_c$, $\rho_s = A_s / A_c$

e = eccentricity of prestressing tendon from section centre

r = Radius of Gyration = $\sqrt{(I_c / A_c)}$

Common Expression in Euro Code in Line with Above