

Pucinotti Method

(cores without rebars)

Bibliography (9) – 2013

This method takes into account different factors influencing the assessment of the in situ equivalent mean strength of concrete and the relative specified concrete strength suggesting to calculate them with following formulas :

equivalent mean strength :
$$f_{cm,P}^{situ} = \alpha_2 * C_{dia} * C_{dril} * (\sum_{i=1}^n C_{L/\Phi_c}^i * f_{c,i}) / n$$

Where :

$f_{cm,P}^{situ}$: in situ equivalent mean strength of concrete (N/mm²)

$f_{c,i}$: measured strength of each core (N/mm²)

C_{L/Φ_c} : correction coeff. for height/diameter ratio of core (-)

Φ_c : core diameter (mm)

L : core height (mm)

$$C_{H/D} = \frac{2}{1.5 + \frac{\phi}{L}}$$

C_{dril} : correction coeff. for damage because of drilling (-)

$$\begin{aligned} &1.2 \text{ for } f_{c,i} < 20 \text{ MPa} \\ &1.1 \text{ for } f_{c,i} \geq 20 \text{ Mpa} \end{aligned}$$

C_{dia} : correction coeff. for damage because of drilling (-)

$$\begin{aligned} &1.06 \text{ for diam. } 50 \text{ mm} \\ &1.00 \text{ for diam. } 100 \text{ mm} \\ &0.98 \text{ for diam. } 150 \text{ mm} \\ &\text{linear interpolation allowed} \end{aligned}$$

specified concrete strength :

$$f_{ck,P}^{situ} = f_{cm,P}^{situ} - 5$$