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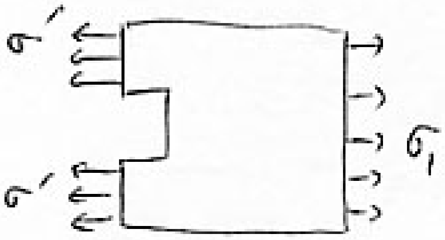
(1)



$$\sigma_1(wt) = \sigma'(w-b)t$$

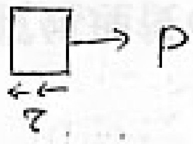
$$\sigma' = \frac{w}{w-b}\sigma_1$$

$\sigma' < \sigma_B$ より

$$\frac{w}{w-b}\sigma_1 < \sigma_B, \quad \therefore \sigma_1 < \frac{w-b}{w}\sigma_B$$

(2) $\sigma_1 \leq \dfrac{w-b}{w}\dfrac{\sigma_B}{S_1}$

(3)



$$P = \sigma_2 wt = \tau ab$$

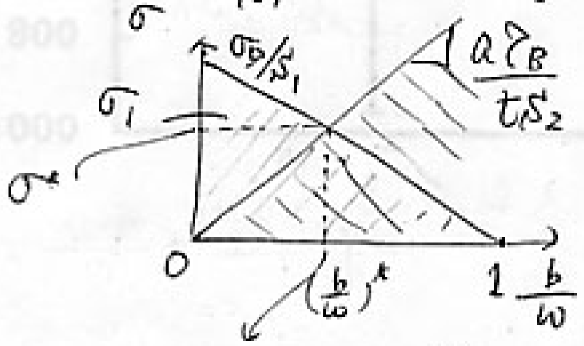
$$\therefore \tau = \frac{wt}{ab}\sigma_2$$

$\tau < \tau_B$ より

$$\frac{wt}{ab}\sigma_2 < \tau_B, \quad \therefore \sigma_2 < \frac{ab}{wt}\tau_B$$

(4) $\sigma_2 \leq \dfrac{ab}{wt}\dfrac{\tau_B}{S_2}$

(5) $\sigma_1 \leq \left(1-\dfrac{b}{w}\right)\dfrac{\sigma_B}{S_1}, \quad \sigma_2 \leq \dfrac{a\tau_B}{tS_2}\left(\dfrac{b}{w}\right)$ より



(6)

$$\left(1-\left(\frac{b}{w}\right)^*\right)\frac{\sigma_B}{S_1} = \frac{a\tau_B}{tS_2}\left(\frac{b}{w}\right)^*, \quad \frac{\sigma_B}{S_1} = \left(\frac{\sigma_B}{S_1} + \frac{a\tau_B}{tS_2}\right)\left(\frac{b}{w}\right)^*$$

$$\therefore \left(\frac{b}{w}\right)^* = \frac{\sigma_B/S_1}{\dfrac{\sigma_B}{S_1} + \dfrac{a\tau_B}{tS_2}}$$

$$\sigma^* = \left\{1 - \frac{\sigma_B/S_1}{\dfrac{\sigma_B}{S_1} + \dfrac{a\tau_B}{tS_2}}\right\}\frac{\sigma_B}{S_1} = \frac{a\tau_B/tS_2}{\sigma_B/S_1 + \dfrac{a\tau_B}{tS_2}}\frac{\sigma_B}{S_1}$$

$$= \frac{(\sigma_B/S_1)(a\tau_B/tS_2)}{\sigma_B/S_1 + a\tau_B/tS_2}$$

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