CLT Floor Panel Calculation

~Bending Stress divided by Standard Strength~

How to calculate standard strength:Fb

2016年版　CLTを用いた建築物の設計施工マニュアル

$$\mathrm{Fb} = \sigma \mathrm{b\_oml} \times \frac{I_A}{I_0} \times 0.4875$$

~Condition~

Ignore the influence of orthogonal layer

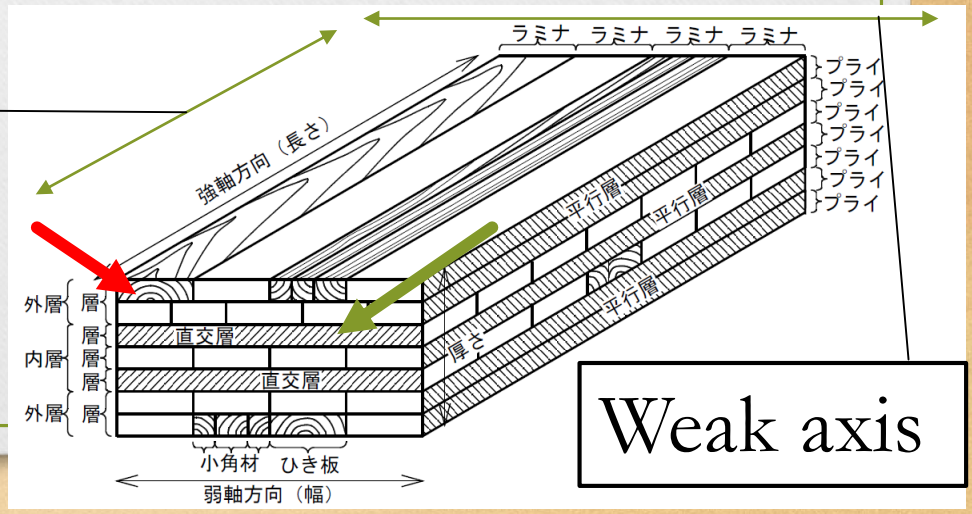
$$Fb = \sigma b\_oml \times \frac{I_A}{I_0} \times 0.4875$$

Fb：Standard strength in out-of bending CLT

σb_oml：average lamina strength of **surrounding layer**

※when we would like to calculate the strength of the weak axis direction, we must use lamina strength of **most distant orthogonal layer**.

Strong axis



Weak axis

$$Fb = \sigma b_{\_oml} \times \frac{I_A}{I_0} \times 0.4875$$

I_A : sectional secondary moments of CLT when we regard CLT cross-section as no strength irregularity

I_0 : sectional secondary moments of CLT

0.4875 : adjusting coefficient (=0.75×0.65)

0.75 : convert the lamina average strength to 95% lower limit strength

0.65 : other's adjusting coefficient