# CHEAT SHEET

## AXIAL

- T · TENSION
- C · COMPRESSION

· COLUMN
· CABLE
· TRUSS
· BRACE

$$F = \frac{P}{A}$$

F = STRESS
P = LOAD (#ORK)
A = CROSS SECT. AREA ($IN^2$ OR $FT^2$)

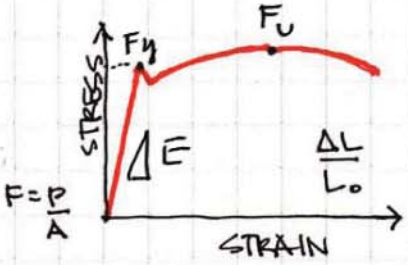
UNIT STRAIN - $$E = \frac{\Delta L}{L_o}$$

E = MODULUS OF ELASTICITY

$E = \frac{RISE}{RUN}$ = SLOPE

$E = \frac{STRESS}{STRAIN}$

$E_{STEEL} = 29{,}000\ KSI$




$F = \frac{P}{A}$

$$\Delta L = \frac{PL_o}{AE}$$

Δ =
L =
P = LOAD
$L_o$ = ORIG. LENGTH
A = AREA
E = MOD. OF ELAST.

TEMP $$\Delta L = \alpha(\Delta T)L_o$$

$\alpha_{STEEL} = .0000065$

## PERPENDICULAR

- V · SHEAR
- M · BENDING
- Δ · DEFLECTION

· DECK
· FLOOR
· JOIST
· BEAM
· ROOF

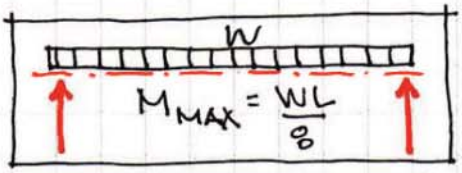
WOOD $$F_v = \frac{3V}{2A}$$ : SHEAR

$$A = b \times d$$

- WOOD
- STEEL
- CONC

$$F_B = \frac{M}{S}$$ : BENDING STRENGTH, FLEXURE

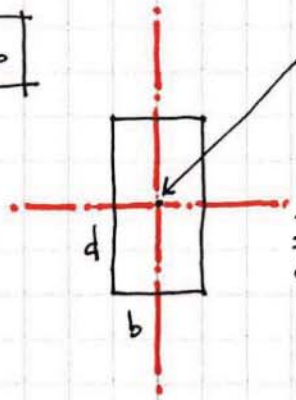
$$S = \frac{bd^2}{6}$$




$$\Delta = \frac{\text{CONST}\ \frac{W}{P} L^3}{EI}$$ (STIFFNESS)

$$I = \frac{bd^3}{12}$$

$\Delta_{ALLOW} = \frac{L}{240}, \frac{L}{360}$
- IS CODE SPECIFIED




$A = b \times d$ → SHEAR

$\frac{I}{C} = S = \frac{bd^2}{6}$ → MOMENT

$I = \frac{bd^3}{12}$ → DEFLECTION