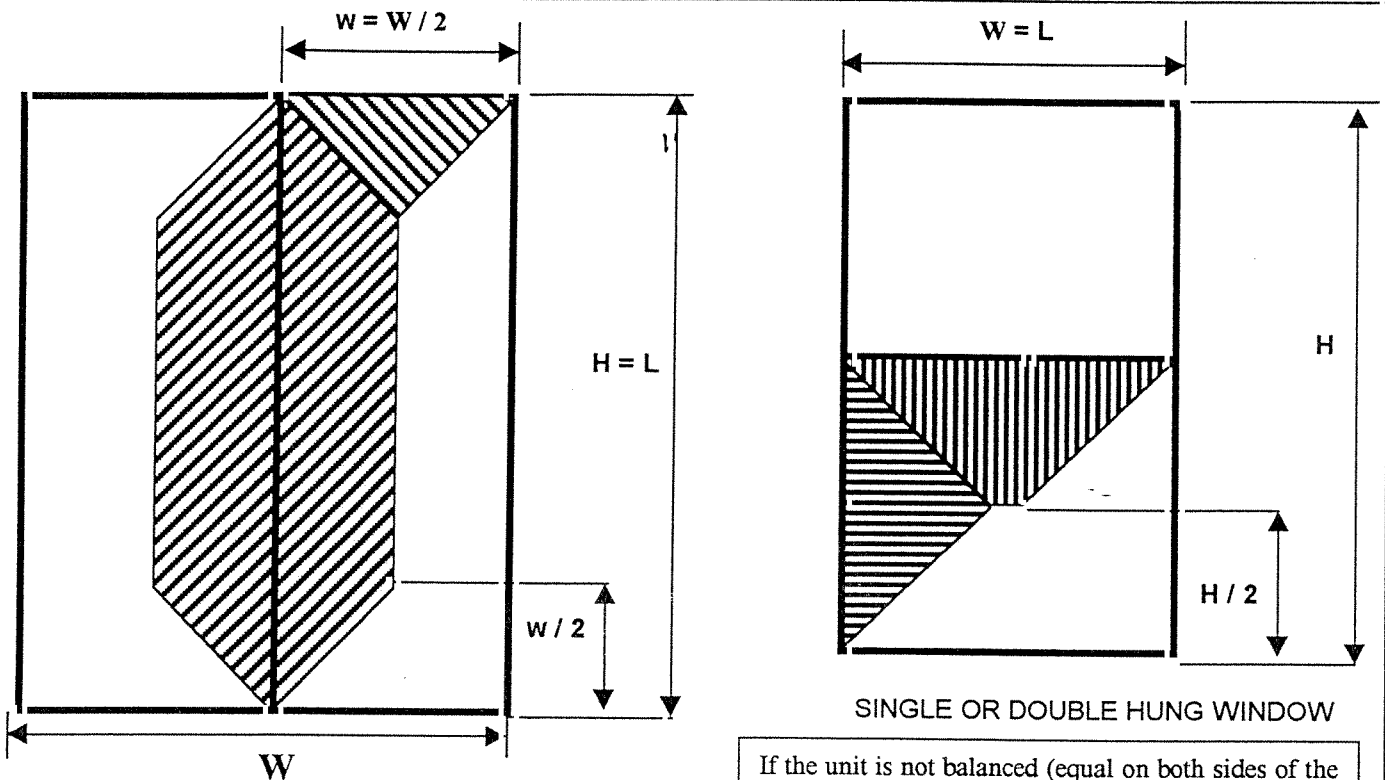


LOAD ANALYSIS FORMULAE & DERIVATIONS



SLIDING GLASS DOOR OR SLIDING WINDOW

SINGLE OR DOUBLE HUNG WINDOW

If the unit is not balanced (equal on both sides of the meeting rail), use the AAMA Procedural Guide as a reference to determine the K factors.

GENERAL DERIVATIONS

FIBERSTRESS	DEFLECTIONS	CONCENTRATED LOAD
$f = M / S$ $M = T_1 L / K_f$ $f = T_1 L / K_f S = PAL / K_f S$ For $f_1 = f_2$ $P_1 A_1 L_1 / K_{f1} S_1 = P_2 A_2 L_2 / K_{f2} S_2$ Since $S_1 = S_2$	$D = T_1 L^3 / K_D EI$ $D = L / X^2$ $L / X = PAL / K_D EI$ For $X_1 = X_2$ $K_{D1} EI / P_1 A_1 L_1^2 = K_{D2} EI / P_2 A_2 L_2^2$	$C = PA / 2$ For $C_1 = C_2$ $P_1 A_1 / 2 = P_2 A_2 / 2$
$P_2 = P_1 A_1 L_1 / K_{f1} S_1 / A_2 L_2 / K_{f2} S_2$	$P_2 = P_1 A_1 L_1^2 K_{D2} / A_2 L_2^2 K_{D1}$	$P_2 = P_1 A_1 / A_2$

f = Fiberstress – psi

T₁ = Total Load – lbs.

L = Span – in.

I = Moment of Inertia – in.⁴

P₁ = Design Pressure (tested unit)

M = Moment – in.lb.

P = Load – psf

K_f = Moment Coefficient

W = Width

P₂ = Design Pressure (compared unit)

S = Section Modulus – in.³

A = Tributary Area – ft.²

K_D = Deflection Coefficient

H = Height

$$K_D = (1920 - (1920 * C)) / ((25 - (40 * C^2)) + (16 * C^4))$$

$$K_f = (24 - (24 * C)) / (3 - (4 * C^2))$$

$$C = \frac{W}{2L}$$