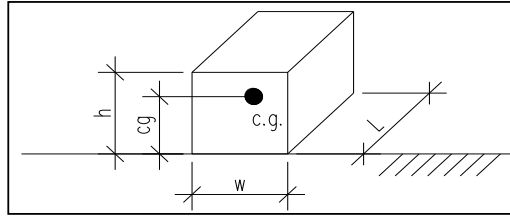


RBI FLEXCORE 5000 BOILER SEISMIC ANCHORAGE (ASCE 7-10)

Slab on Grade Applications Only

Equipment Parameters:

| | | |
|-----------------|----------------|------|
| weight, W_p = | 4685.00 | LBS. |
| w = | 34.000 | in. |
| L = | 109.400 | in. |
| h = | 80.000 | in. |
| cg = | 36.100 | in. |



Seismic Parameters:

| | | | | |
|---------|--------------|--------------------------|-----------------|------------|
| S_s = | 1.798 | ASCE 7-10 Figure 22-1) | Site Class = | D |
| a_p = | 1.000 | (ASCE 7-10 Table 13.6-1) | Risk Category = | III |
| I_p = | 1.500 | (ASCE 7-10 13.1.3) | | |

| | | |
|---------------------------|--------------|--|
| R_p = | 2.500 | (Default value for Anchorage per ASCE 7-10 Table 13.6-1) |
| F_a = | 1.000 | (ASCE 7-10 Table 11.4-1) |
| $S_{MS} = F_a * S_s$ = | 1.798 | (ASCE 7-10 Eqn. 11.4-1) |
| $S_{DS} = 2/3 * S_{MS}$ = | 1.199 | (ASCE 7-10 Eqn. 11.4-3) |

Seismic Design Category = **D**

Seismic Force:

| | | |
|--|----------------|------------------------------|
| $F_p = (0.4 * a_p * S_{DS} * W_p) / (R_p / I_p)$ = | 1347.8 | LBS. (ASCE 7-10 Eqn. 13.3-1) |
| Upper Limit: $F_{pMAX} = 1.6 * S_{DS} * I_p * W_p$ = | 13477.8 | LBS. (ASCE 7-10 Eqn. 13.3-2) |
| Lower Bound: $F_{pMIN} = 0.3 * S_{DS} * I_p * W_p$ = | 2527.1 | LBS. (ASCE 7-10 Eqn. 13.3-3) |
| $F_{p, DESIGN}$ = | 2527.1 | LBS. |

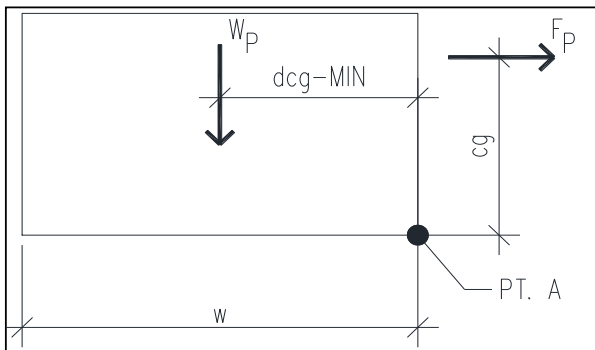
RBI FLEXCORE 5000 BOILER SEISMIC ANCHORAGE (ASCE 7-10)

Design Anchorage Force:

Horizontal Shear Force Per Anchor:

$$R_H = F_p/4 = \boxed{631.8} \text{ LBS.}$$

Overtuning Resistance About Point A:



$$x = \boxed{34.00} \text{ in.}$$

$x = \text{lesser of } L \text{ or } W$
 $dcg - \text{Min} = \boxed{16.4} \text{ in.}$

$$M_{OT} = F_p * cg = \boxed{7602.3} \text{ LBS.-FT.}$$

$$M_{RES} = W_p * dcg - \text{MIN} = \boxed{3201.4} \text{ LBS.-FT. Uplift}$$

Vertical Acceleration: assume $\rho = 1.0$

$$E_v = \rho * F_p + 0.2 * S_{DS} * W = \boxed{1754.9} \text{ LBS. (ASCE Section 13.3.1)}$$

$$R_{VNETUP} = (M_{OT}/(2*x)) - (W_p/4) + (E_v/4) = \boxed{0.0} \text{ LBS. No Uplift}$$

Force Summary Per Corner:

Component Anchorage:

$$R_{HNET} = \boxed{631.8} \text{ LBS.}$$

$$R_{VNETUP} = \boxed{0.0} \text{ LBS.}$$

Anchors Embedded in Concrete or CMU:

$$1.3 * R_p * R_{HNET} = \boxed{2053.3} \text{ LBS.}$$

$$1.3 * R_p * R_{VNETUP} = \boxed{0.0} \text{ LBS.}$$