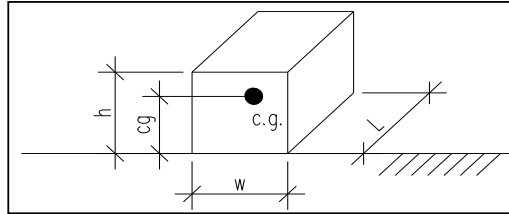


**FUSIIION XLF 2500 BOILER SEISMIC ANCHORAGE (ASCE 7-05)**

**Slab on Grade Applications Only**

Equipment Parameters:

|                 |                |      |
|-----------------|----------------|------|
| weight, $W_p$ = | <b>2400.00</b> | LBS. |
| $w$ =           | <b>29.125</b>  | in.  |
| $L$ =           | <b>84.000</b>  | in.  |
| $h$ =           | <b>55.500</b>  | in.  |
| $cg$ =          | <b>23.625</b>  | in.  |



Seismic Parameters:

|         |              |                          |                     |           |
|---------|--------------|--------------------------|---------------------|-----------|
| $S_s$ = | <b>1.798</b> | ASCE 7-05 Figure 22-1)   | Site Class =        | <b>B</b>  |
| $a_p$ = | <b>1.000</b> | (ASCE 7-05 Table 13.6-1) |                     |           |
| $I_p$ = | <b>1.500</b> | (ASCE Table 11.5-1)      | Seismic Use Group = | <b>II</b> |

|                           |              |  |
|---------------------------|--------------|--|
| $R_p$ =                   | <b>2.500</b> | (Default value for Anchorage per ASCE 7-05 Table 13.6-1) |
| $F_a$ =                   | <b>1.000</b> | (ASCE 7-05 Table 11.4-1)                                 |
| $S_{MS} = F_a * S_s$ =    | <b>1.798</b> | (ASCE 7-05 Eqn. 11.4-1)                                  |
| $S_{DS} = 2/3 * S_{MS}$ = | <b>1.199</b> | (ASCE 7-05 Eqn. 11.4-3)                                  |

Seismic Design Category = **D**

Seismic Force:

|  |               |                              |
|--|---------------|------------------------------|
| $F_p = (0.4 * a_p * S_{DS} * W_p) / (R_p / I_p)$ =   | <b>690.4</b>  | LBS. (ASCE 7-05 Eqn. 13.3-1) |
| Upper Limit: $F_{pMAX} = 1.6 * S_{DS} * I_p * W_p$ = | <b>6904.3</b> | LBS. (ASCE 7-05 Eqn. 13.3-2) |
| Lower Bound: $F_{pMIN} = 0.3 * S_{DS} * I_p * W_p$ = | <b>1294.6</b> | LBS. (ASCE 7-05 Eqn. 13.3-3) |
| $F_{p, DESIGN}$ =                                    | <b>1294.6</b> | LBS.                         |

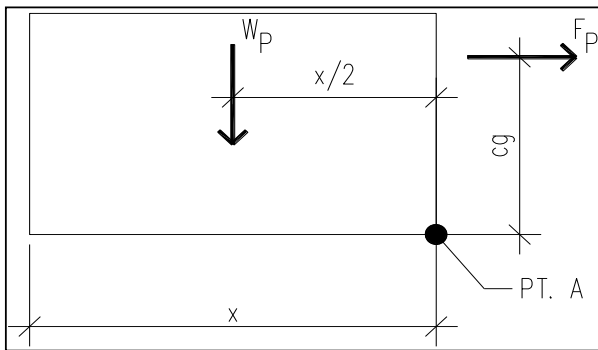
**FUSION XLF 2500 BOILER SEISMIC ANCHORAGE (ASCE 7-05)**

Design Anchorage Force:

Horizontal Shear Force Per Anchor:

$$R_H = F_p/4 = \boxed{323.6} \text{ LBS.}$$

Overtuning Resistance About Point A:



$$x = \boxed{29.13} \text{ in.}$$

$x = \text{lesser of } L \text{ or } W$

$$M_{OT} = F_p * cg = \boxed{2548.7} \text{ LBS.-FT.}$$

$$M_{RES} = W_p * x/2 = \boxed{2912.5} \text{ LBS.-FT. OK, No Uplift}$$

Vertical Acceleration: assume  $\rho = 1.0$

$$E_v = \rho * F_p + 0.2 * S_{DS} * W = \boxed{899.0} \text{ LBS. (ASCE Section 13.3.1)}$$

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

Force Summary Per Corner:

Component Anchorage:

$$R_{HNET} = \boxed{323.6} \text{ LBS.}$$

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

Anchors Embedded in Concrete or CMU:

$$1.3 * R_p * R_{HNET} = \boxed{1051.8} \text{ LBS.}$$

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