



**Installation Site Information:**

HEIGHT (above grade): 10 ft. ROOF TYPE: GROUND

Remove loose material from the area where the mount is to be placed.

**-Wind Force:**

Wind forces in this calculation are based on ASCE 7-02 @ 120 Mph

$.00256 \times \text{Velocity pressure coeff.} \times \text{topographic factor} \times \text{Wind Velocity}^2 \times \text{Importance factor} = \text{Velocity Pressure (psf)}$

$.00256 \times 0.85 \times 1.00 \times 90^2 \times 1.0 = \underline{17.6}$  psf

$\text{Velocity pressure} \times \text{Gust response factor} \times \text{Shape factor} \times \text{Area (ft.}^2\text{)} = \text{Design wind force (lbs.)}$

$17.6 \text{ psf} \times 0.85 \times 1.2 \times 76.1 \text{ sq.ft.} = \underline{1366}$  lbs. wind load

**-Untethered:** (calculation determines the amount of ballast weight required to prevent sliding.)

$\text{Design wind force} / \text{friction coefficient} \times \text{safety factor} - (\text{mount weight} + \text{antenna weight}) = \text{Required Ballast (lbs.)}$

$(1366 \text{ lbs.} / 0.50) \times 1.25 - 1000 \text{ lbs.} = \underline{2415}$  lbs. Required Ballast

$(\text{weight of required ballast} + \text{mount} + \text{antenna}) / \text{mount area} = \text{Roof Load (psf)}$

$3415 \text{ lbs.} / 245.0 \text{ sq.ft.} = \underline{13.9}$  psf

MOUNTING SYSTEM: PL-2 4' X 6' Ballast Trays

**-Tethered ( with three cables at 120 degrees spacing to prevent sliding):**

Note: ( If the tethered ballast required is greater than the untethered ballast required, the tethered ballast required should be used, however in this case the tethers would not be required to prevent sliding.)

$\text{Overturning moment} \times \text{safety factor} = \text{Resisting Moment}$

$\text{Wind load} \times \text{safety factor} \times \text{height to antenna centerline} = (1/2 \text{ base width}) \times (\text{antenna weight} + \text{mount weight} + \text{ballast weight})$

$\text{Wind load} \times \text{safety factor} \times \text{height to antenna centerline} / (1/2 \text{ base width}) - (\text{weight of antenna \& mount}) = \text{Req'd ballast (lbs.)}$

$1366 \text{ lbs.} \times 1.50 \times 5.5' / 7.8' - 1000 \text{ lbs.} = \underline{445}$  lbs. Required Ballast

$(\text{Weight of required ballast} + \text{mount} + \text{antenna}) / \text{Mount area} = \text{Roof Load (psf)}$

$1445 \text{ lbs.} / 245.0 \text{ sq.ft.} = \underline{5.9}$  psf

MOUNTING SYSTEM: PL-2 4' X 6' Ballast Trays

See our engineering page: <http://www.SatelliteDish.com/page82.htm>