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

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

-Exposure Level: C

-Antenna Information:

Mfg.: PRODELIN Dia.: 3 m Antenna Weight: 400 lbs.
Mast Weight: 70 lbs.

The client requesting this ballast calculation, based on the ASCE 7-02 code, should have a local engineer verify that the appropriate factors were used determine velocity pressure ($q_z$).

-Wind Force:

Wind forces in this calculation are based on ASCE 7-02 @ 90 mph

\[ \text{Velocity pressure} x \text{Gust response factor} x \text{Shape factor} x \text{Area} = \text{Design wind force (lbs.)} \]

\[ 0.00256 \times 0.85 \times 1.00 \times 90^2 \times 1.0 = 17.6 \text{ psf} \]

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

\[ \frac{\text{Design wind force}}{\text{Friction coefficient}} \times \text{safety factor} - (\text{mount weight} + \text{antenna weight}) = \text{Required Ballast (lbs.)} \]

\[ (\frac{1366 \text{ lbs.}}{0.50}) \times 1.25 - 1000 \text{ lbs.} = 2415 \text{ lbs. Required Ballast} \]

-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.)

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

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

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

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

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