BASIC TOWER REQUIREMENTS for the BWC EXCEL WIND TURBINE

Customer supplied towers for the BWC EXCEL should meet the following requirements:

Tower Height:	60 ft (18 m) minimum, 80 ft (24 m) or higher recommended
Design Wind Speed:	120 mph (54 m/s)
Turbine Weight:	1350 lb (610 kg)
Turbine Thrust Load:	After 07/01/2009 - 2400 lb (1090 kg) @ any wind >= 40 mph (18 m/s) Before 07/01/2009 - 2200 lb (1000 kg) @ any wind >= 40 mph (18 m/s)
Blade Clearance:	The top 12 ft (3.5 m) of the tower must not extend beyond an 18 inch (0.46 m) radius from the tower centerline.
Tower Stiffness:	Tilt at the top of the tower should be no more than 2.0° for consistent furling. Deflection of monopole towers at 40 mph should be no more than 1.5% of tower height; at 120 mph no more than 2.5% of tower height. (For a 120 ft tower this would be 21.6 in and 36.0 in, respectively.) Overly flexible towers can cause vibration problems. A civil engineer should approve the tower.
Turbine Mounting:	See turbine mounting plate drawing below.
Miscellaneous:	Provisions should be made for mounting a furling winch, strain relief for tower wiring, tower climbing, anti-fall equipment and access holes where appropriate.