

### **Rotating Biological Contactor Design Considerations**

1. RBCs should be preceded by properly designed settling facilities. Flow equalization must be provided when the ratio of peak (maximum instantaneous) to average daily flow exceeds 2.5
2. At least four (4) stages shall be provided for secondary treatment applications. Additional stages may be necessary for nitrification and further BOD removal.
3. High-density media should not be used in the first two stages. At least 35% of the media should be submerged. Media density is as defined in the NYSDEC standards.
4. First stage loadings may range from 2.5-4.0 lbs of soluble BOD<sub>5</sub>/day/1000 square feet; organic loadings less than 3.0 lbs of soluble BOD<sub>5</sub>/day/1000 square feet are recommended.
5. Four or more stages are necessary for nitrification. For design purposes the maximum removal rate should not exceed 0.3 lb NH<sub>3</sub>-N/day/1000 square feet of media. System temperature should be maintained at or above 55<sup>o</sup>F for maximum removal.
6. Permanent buildings or covers must be provided to protect the units from sunlight and winter weather. Buildings should have adequate heat, ventilation and humidity control; covers should be removable to allow for the replacement of the shaft/media assembly.
7. O&M requirements must be considered in the RBC design. Tank depth/configuration should be such that solids are not deposited in the tank. Provisions should be made for draining the tank.
8. Final settling shall provide a detention time of not less than 90 minutes; with maximum surface settling and weir overflow rates as set forth in the NYSDEC standards. Higher rates may be accepted if the units are to be followed by tertiary treatment.