

Centrifugal or Vortex-Separation Structures BMP 19

Description	Centrifugal-separation structures are characterized by an internal component that creates a swirling motion. This is typically accomplished by a tangential inflow location within a cylindrical chamber. The solids settle to the bottom and are trapped by the swirling flow path. Additional compartments or chambers act to trap oil and other floatables. These systems may include a wall to separate TSS from oil.								
Applications	<p>These systems are ideal for use in ultra-urban areas since they are space efficient. These systems can be placed under parking lots or simply installed as a manhole junction box or inlet structure. In general, these structures are recommended for the following:</p> <ul style="list-style-type: none"> ▪ Pretreatment for other BMPs ▪ Retrofit of existing development or redevelopment ▪ Ultra-urban development areas 								
Limitations	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Drainage area – depends on manufactures specifications</td> <td style="width: 50%;">Max slope – N/A</td> </tr> <tr> <td>Minimum bedrock depth - N/A</td> <td>Minimum water table – N/A</td> </tr> <tr> <td>NRCS soil type – A, B, C, D</td> <td>Freeze/thaw – fair</td> </tr> <tr> <td>Drainage/flood control – no</td> <td></td> </tr> </table>	Drainage area – depends on manufactures specifications	Max slope – N/A	Minimum bedrock depth - N/A	Minimum water table – N/A	NRCS soil type – A, B, C, D	Freeze/thaw – fair	Drainage/flood control – no	
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Targeted Pollutants	<p>Sediment – Phosphorus – 15 - 20% Trace metals –</p>								
Design Parameters	<p>The sizing criteria should be obtained from the manufacturer to ensure that the latest design and sizing criteria is used. In general, the flow-through configuration and treatment limitations will force drainage areas to remain relatively small. The system should be sized for the water quality design storm. If the system is too large it will not have the volume/velocity relationship to achieve the swirl action.</p> <p>An overflow, or bypass, is needed to divert flow that exceeds the design rate, or a storage facility is needed to store the appropriate volume of runoff for treatment.</p>								
Maintenance	<p>This system requires regular inspection and maintenance to maximize effectiveness. The specific maintenance requirements and schedule should be prepared by the manufacturer and signed by the owner/operator. It should be noted that the frequency of maintenance is not only dependent on the type of manufactured system chosen but also the pollutant load from the contributing drainage area.</p>								