Calculation for Pervious Concrete Storage Capacity

Step A. Site Planning Recommendation
Define goals and primary function of pervious concrete based on the Pervious Concrete Step by Step Design Procedures beginning on page 18.5.1038 as well as Table 18.5.103A and Table 18.5.103B. Refer to these sections as needed throughout the remainder of this calculation sheet.

Step B. Determine the Required Water Quality Volume Rain Event, RE\text{WQV} in inches (Refer to Chapter 18.3; A minimum depth of 0.6 inches must be used):

Step C. Calculate the Required Water Quality Volume (WQ\text{V Required}) of water to be removed by pervious concrete:

1. A = Contributing drainage area to pervious concrete:

2. RE\text{WQV} = Required WQ\text{V} Rain Event in inches:

3. I = Impervious cover of the contribution drainage area in percent:
   a. \ R_V = 0.05 + 0.009 (I) =

4. WQ\text{V Required} = \frac{A}{12}(RE_{WQV})(R_V) = 

Step D. Calculate the Provided Water Quality Volume (WQ\text{V Provided}), or storage capacity of pervious concrete:

1. A = Area of pervious concrete:

2. p1 = porosity of base layer 1 (% void):

3. d1 = depth of base layer 1:

4. WQ\text{V Provided} = A \left[\frac{p1}{100}(d1)\right] =

   "Note: This formula only applies if the paver surface and sub soil have a 0% slope.

Step E. Determine the Managed Water Quality Volume (MWQ\text{V})

1. Determine the GMP Management Capacity of the pervious concrete in percent (Refer to Table 18.3-C for percent):

2. MWQ\text{V} = \frac{1}{100}(GMP Management Capacity in percent)(WQ\text{V Provided}) =

3. Is all of the WQ\text{V Required} managed or treated (i.e. is MWQ\text{V} greater than or equal to WQ\text{V Required})?

   If No, adjust WQ\text{V} Provided parameters to allow for greater storage capacity and/or proceed to Step F.

   If Yes, proceed to step H.
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Step F. Calculate the Required Remaining Water Quality Volume (RWQ_V)

1. Required RWQ_V = 2(WQ_V Required - MWQ_V) = \text{ft}^3

Step G. Select Alternate GMPs to Treat RWQ_V. Examples may include:

Check all that apply. Include additional calculation sheets as necessary.

☐ Green Wet Basin
☐ Green Dry Basin
☐ Catch Basin Inserts
☐ Proprietary Water Quality Units
☐ Other

1. How much additional WQ_V is removed by the Alternate GMPs? \text{ft}^3
2. Does the Alternate GMP remove all the Required RWQ_V? 
   If No, alter existing GMPs or add new ones to provide adequate storage.

Step H. Complete O&M documentation.

Additional Calculations and Explanation (Required if design deviates from calculation sheet):
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