

Calculation of Porous Asphalt's Storage Capacity

Project Name: _____	MSD Reviewer: _____ WM No. _____
Date Submitted: _____	
Property Address: _____	
Development/Property Name: _____	
GMP Number: _____	
Design Firm: _____	
Design Engineer: _____ Telephone: _____ Email: _____	
KY PE No.: _____	

Step A. Site Planning Recommendation

Define goals and primary function of porous asphalt based on the Porous Asphalt Step by Step Design Procedures beginning on page 18.5.11-9 as well as Table 18.5.11-B and Table 18.5.11-C. Refer to these sections as needed throughout the remainder of this calculation sheet.

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

_____ inches

Step C. Calculate the Required Water Quality Volume (WQ_V Required) of water to be removed by porous asphalt:

1. A = Contributing drainage area to porous asphalt: _____ ft^2
2. RE_{WQV} = Required WQ_V Rain Event in inches: _____ inches
3. I = Impervious cover of the contribution drainage area in percent: _____ %
 - a. $R_V = 0.05 + 0.009 (I) =$ _____
4. $WQ_V \text{ Required}^* = (A/12)(RE_{WQV})(R_V) =$ _____ ft^3

Step D. Calculate the Provided Water Quality Volume (WQ_V Provided), or storage capacity

1. A = Area of porous asphalt: _____ ft^2
2. p_1 = porosity of base layer 1 (% void): _____ 40 %
3. d_1 = depth of base layer 1: _____ ft
4. $WQ_V \text{ Provided}^* = (A)[(p_1/100)(d_1)] =$ _____ ft^3

* Note: This formula only applies if the asphalt and sub soil have a 0% slope.

Step E. Determine the Managed Water Quality Volume (MWQ_V)

- Determine the GMP Management Capacity of the porous asphalt in percent (Refer to
1. Table 18.3-C for percent): _____ %
 2. $MWQ_V = (1/100)(\text{GMP Management Capacity in percent})(WQ_V \text{ Provided}) =$ _____ ft^3
 3. Is all of the WQ_V Required managed or treated (i.e. is MWQ_V greater than or equal to WQ_V Required)? _____

If No, adjust WQ_V Provided parameters to allow for greater storage capacity and/or proceed to Step F.

If Yes, proceed to step H.

Calculation of Porous Asphalt's Storage Capacity

Step F. Calculate the Required Remaining Water Quality Volume (RWQ_V)

1. Required RWQ_V = 2(WQ_V Required - MWQ_V) =

_____ft³

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?
- _____ft³
2. Does the Alternate GMP remove all the Required RWQ_V?
- _____
3. If Yes, proceed to step H.
- 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):
