Technical Note

TN 3.02 AdvanEDGE® Hydraulic Performance

This technical note provides the inlet flow and core flow capacities of AdvanEDGE to be used in determining sizing and spacing of a subsurface drainage system.

Inlet Flow Capacity

The inlet flow of an AdvanEDGE panel is dependent upon perforation sizing and whether or not a geotextile is wrapped around the panel. Typically, the inlet flow of the panel is greater than the subbase material and is not a limiting factor in the design. However, inlet flow capacity for AdvanEDGE, with and without a geotextile, is provide in Table 1 for reference.

Table 1
AdvanEDGE Inlet Flow Capacity

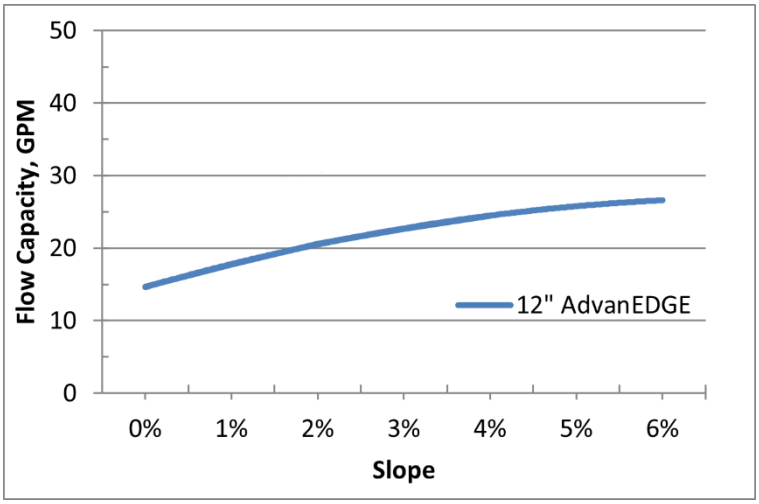
Product	Inlet Flow Capacity, GPM/Sq. Ft
AdvanEDGE[1]	57
AdvanEDGE wrapped in geotextile[2]	56

[1] Inlet capacity from Ohio DOT report on Hydraulic Design and Performance of edge drains.
[2] Geotextile flow value (Flux) based on geotextile with permittivity of 0.7 sec^{-1}.

Core Flow Capacity

ASTM D4716, Standard Test Method for Determining the (In-Plane) Flow Rate per Unit Width and Hydraulic Transmissivity for a Geosynthetic Using a Constant Head, was the original procedure for determining the flow capacity of AdvanEDGE. However, this procedure only addresses the panel installed in a horizontal plane, while the majority of applications install AdvanEDGE vertically. The Kentucky Transportation Center devised a flow test that determines flow rates in the vertical plane. The procedure has been accepted as an appropriate measurement of flow capacity and is included in ASTM D7001 Geocomposite for Pavement Edge Drains and Other Flow Applications.

Figure 1
AdvanEDGE Core Flow Capacity Horizontal Plane Installation



Note: Testing performed in accordance with ASTM D4716, with panel in horizontal plane and loaded at 10psi. Values reported in the Ohio DOT report on Hydraulic Design and Performance of edge drains.

Table 2
AdvanEDGE Core Flow Capacity, Vertical Plane Installation

Loading, psi	Flowrate, GPM
0	40
22	40

Note: Testing performed per the University of Kentucky In-Plane Flow Test. Values reported in Kentucky Transportation Center Research Report KTC-97-5