HIDE
Exterior Covers

HIDE HDC12.5" DRAIN COVER FLOW RATE GUIDE:

= 67.6L/min
= 17.9 US GALLONS PER MINUTE (GPM)

TECHNICAL EXPLANATION:

The flow rate through a slot drain is influenced by the slot's cross-sectional area and the hydraulic conditions, including the slope and roughness of the channel. In this estimation, we utilized standard flow rates for a known slot width and adjusted proportionally based on the given slot dimensions. For precise flow rate determination, it's recommended to perform detailed hydraulic calculations considering site-specific parameters or consult with a drainage engineer.

HDC12.5 FLOW RATE:

Width of the slot (W) = 3/16 in / 0.197 in
Total slot length (L) = 49.45 in (4 x 12.36 in)
Slot area (A) = W×L

1. Cross-Sectional Area

The cross-sectional area of the slot can be calculated as: A = W × L
A = 3/16 in / 0.197 in × 49.45 in = 9.73 in^2

2. Flow Velocity Estimation:

Using the proportional flow rate calculation from the reference slot system:
We determined that the flow rate per meter of slot length for a **1/2 in wide slot is approximately 136.6 L/min per meter. (36.1 gpm per meter / 11.0 gpm per ft)**

The width of the HIDE Drain Cover Slot (0.197 in) is **39.37%** of the reference width (5 ÷ 12.7 ≈ 0.3937). Therefore, we adjust the flow rate proportionally:

Flow rate per meter = 136.6 × 0.3937 ≈ 14.21 gpm/m / 4.33 gpm/ft

3: Total Flow Rate:

For a total slot length of 1,256mm (or 1.256 m / 4.12 ft):

TOTAL FLOW RATE = 53.8L/min/m × 1.256m ≈ ≈ 17.9 US gallons per minute (gpm)

4: Convert to Cubic Meters per Second

To express the flow rate in m^3/s:

67.6L/min = 67.6 × 10^{-3} m^3/min = 2.39 ft^3/min
0.0676 $m^{\wedge 3}$/min ÷ 60 s/min = 0.0398 ft^3/s

Guide Flow Rate:

For the 12.5" Square HIDE Drain Cover with a 3/16 in / 0.197 in wide slot, the estimated flow rate is approximately 17.9 gpm (0.001127 m^3/s / 0.0398 ft^3/s) under typical hydraulic conditions.

Disclaimer:

This flow rate is a general guide and may vary significantly depending on installation-specific factors like slope (fall), water pressure, and hydraulic conditions. For exact performance, site-specific analysis or consultation with a drainage engineer is recommended.