HIDE
Exterior Covers

HIDE 342 DRAIN COVER FLOW RATE GUIDE: HDC342 = 73.6L/min

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 utilised 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.

HDC342 FLOW RATE:

Width of the slot (W) = 5mm
Total slot length (L) = 1,368mm (4 x 342)
Slot area (A) = W×L

1. Cross-Sectional Area

The cross-sectional area of the slot can be calculated as: A = W × L
A=5mm × 1,368mm = 6,840mm^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 **12.7 mm wide slot is approximately 136.6 L/min/m.**

The width of the HIDE Drain Cover Slot (5mm) 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 ≈ 53.8L/min/m

3: Total Flow Rate:

For a total slot length of 1,368 mm (or 1.368 m):

TOTAL FLOW RATE = 53.8L/min/m × 1.368m ≈ 73.6L/min

4: Convert to Cubic Meters per Second

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

73.6L/min = 73.6 × 10^{-3} m^3/min = 0.0736m^3/min
0.73066m^3/min ÷ 60s/min ≈ 0.001227m^3/s

Guide Flow Rate:
For the 342mm Square HIDE Drain Cover with a 5mm wide slot, the estimated flow rate is approximately 73.6 L/min (0.001227m^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.