



HIDE 214 DRAIN COVER FLOW RATE GUIDE: HDC214 = 46L/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.

HDC214 FLOW RATE:

Width of the slot (W) = 5mm
Total slot length (L) = 856mm (4 x 214)
Slot area (A) = W×L

1. Cross-Sectional Area

The cross-sectional area of the slot can be calculated as: $A = W \times L$
 $A = 5\text{mm} \times 856\text{mm} = 4,280\text{mm}^2$

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 per meter.**

The width of the HIDE Drain Cover Slot (5mm) is **39.37%** of the reference width ($5 \div 12.7 \approx 0.3937$). Therefore, we adjust the flow rate proportionally:

Flow rate per meter = $136.6 \times 0.3937 \approx 53.8\text{L/min/m}$

3: Total Flow Rate:

For a total slot length of 856mm (or 0.856m):

TOTAL FLOW RATE = $53.8\text{L/min/m} \times 0.856\text{m} \approx 46\text{L/min}$

4: Convert to Cubic Meters per Second

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

$46\text{L/min} = 46.0 \times 10^{-3} \text{ m}^3/\text{min} = 0.0460\text{m}^3/\text{min}$
 $0.0460\text{m}^3/\text{min} \div 60 \text{ s/min} \approx 0.000767\text{m}^3/\text{s}$

Guide Flow Rate:

For the 214mm Square HIDE Drain Cover with a 5mm wide slot, the estimated flow rate is approximately 46 L/min ($0.000767\text{m}^3/\text{s}$) 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.

