



HIDE DRAIN COVER FLOW RATE GUIDE: HDC656 = 141.1L/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.

HDC656 FLOW RATE:

Width of the slot (W) = 5mm
Total slot length (L) = 2,624mm (4x656mm)
Slot area (A) = W × L



1. Cross-Sectional Area

The cross-sectional area of the slot can be calculated as: $A = W \times L$

$$A = 5\text{mm} \times 2,624\text{mm} = 13,120\text{mm}^2$$

$$A = 13,120\text{mm}^2 \times (1\text{m}^2 / 1,000,000\text{mm}^2) = 0.01312\text{m}^2$$

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:

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

3: Total Flow Rate:

For a total slot length of 2,624 mm (or 2.624 m):

$$\text{TOTAL FLOW RATE} = 53.8\text{L/min/m} \times 2.624\text{m} \approx 141.1\text{L/min}$$

4: Convert to Cubic Meters per Second

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

$$141.1\text{L/min} = 141.1 \times 10^{-3} \text{m}^3/\text{min} = 0.1411\text{m}^3/\text{min}$$

$$0.1411\text{m}^3/\text{min} \div 60 \text{s/min} \approx 0.002352\text{m}^3/\text{s}$$

Guide Flow Rate:

For the 656mm Square HIDE Drain Cover with a 5mm wide slot, the estimated flow rate is approximately 141.1L/min ($0.002352\text{m}^3/\text{s}$) 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.