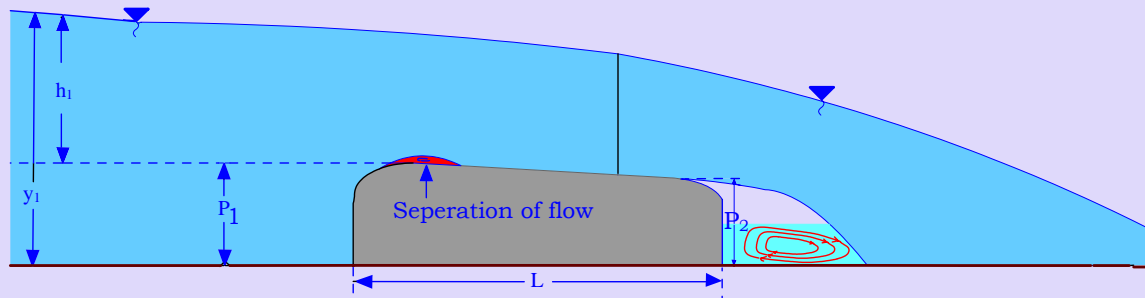


Broad crested rectangular weir



Broad crested rectangular weir - The height of the weir P_1 and P_2 are different in the upstream and downstream face respectively

$$\frac{H_1}{L} < 0.8$$

Subcritical flow occurs above the crest

$$0.08 \leq \frac{H_1}{L} \leq 0.33$$

This is the range the flow can be described a broad crested weir

$$0.33 < \frac{H_1}{L} \leq \text{about } 1.5 \text{ to } 1.8$$

Seperation occurs

$$\frac{H_1}{L} > 1.5$$

Behaves as a sharp crested weir

Discharge is obtained by

$$Q = C_d C_v \left[\frac{2}{3} g \right]^{0.5} \frac{2}{3} b h_1^{1.50}$$

$$= 1.7049 b C_d C_v h_1^{1.50}$$

C_d remains nearly constant if $0.08 \leq \frac{H_1}{L} < 0.33$ and $\frac{h_1}{h_1 + P} \leq 0.35$

The average values of C_d within this limit is 0.848. Beyond this range a correction factor greater than 1.0 requires to be applied.