

Why is it that the source of faults with conventional clear-water effluent channels is approximately 25x bigger than with perforated systems?

Because: The overflow weir operates according to the law of the free overflow

$$Q = \frac{8}{15} * \mu * 1 * \sqrt{2g} * h^{5/2}$$

The perforated system operates according to the law of the free or detained effluent

$$Q = A * \mu * \sqrt{2gH}$$

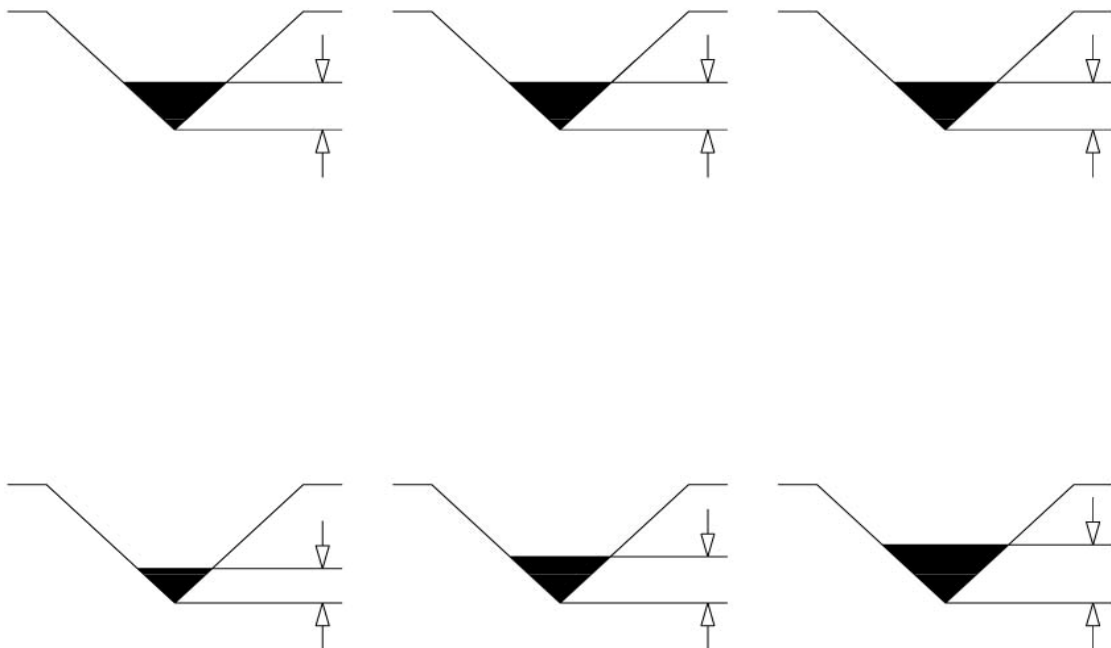
Comparison: Overflow weir - Perforated system with shifting of water surface due to wind influence

Other sources of faults: ground depression, inaccurate assembly

Starting Point: Overflow weir baffled 2 cm (is equivalent to 1,9 m³/h per running meter)
 Perforated system ΔH= 10 cm (is equivalent to 1,9 m³/h per running meter)

Effluent behaviour of a conventional overflow weir Overflow weir model A according to DIN 19 558

Case 1:



Case 3: Effluent characteristic perforated system with equally inclined position

1,85 m³/h*running meter

1,9 m³/h*running meter

1,95 m³/h*running meter

Rate of faults:
 (related to nominal value)

Overflow weir	Perforated System
80%	3%