

Time of Concentration

Civil Engineering

Why the worst storm is the one that fits.

The critical storm lasts as long as water takes to reach the outlet from the furthest point of the catchment.

$tc = \text{overland flow time} + \text{channel time}$

Steep, paved, small

Sharp peak.

tc a few minutes

Flat, vegetated, large

Flattened peak.

tc over an hour

Storm shorter than tc

Lower peak.

Not all area drains

THE COMMON MISTAKE

× **Picking the heaviest short burst**

✓ **Match duration to tc**

A five-minute cloudburst is intense but never has the whole catchment contributing at once. The critical storm lasts about as long as tc .

Educational reference. Empirical tc formulae are calibrated regionally. Use the one your design standard names.