

Mix Design

Civil Engineering

From required strength to proportions.

Durability can override strength. Whichever demands more, wins.

1

Set the target mean strength

Characteristic strength plus a margin for production variability.

2

Fix the water-cement ratio

From strength and from durability class, taking the lower value.

3

Choose the water content

From the workability wanted and the aggregate size and shape.

4

Compute cement content

Water content divided by w/c ratio, then check against minima.

5

Proportion the aggregates

Fine to coarse ratio for grading, cohesion and pumpability.

6

Trial, test, adjust

Trial mix, cubes at 7 and 28 days, then correct the proportions.

Educational reference. Mix design follows the governing concrete standard and the project specification, proven by trial.