

Concrete Properties

Civil Engineering

What concrete is good at, and is not.

Concrete is strong in compression, weak in tension, and keeps changing for months after it is placed.

COMPRESSIVE STRENGTH

Often 25 to 50 MPa

DENSITY, REINFORCED

About 25 kN/m³

- Tensile strength is near a tenth of compressive
- Reinforcement carries the tension instead
- Elastic modulus rises with strength, slowly
- Shrinkage and creep continue for years
- It is alkaline, and that protects the steel
- Strength is quoted at 28 days by convention

LOOK FOR IT

A slab that cracks on the first day is shrinking, not overloaded.

Educational reference. Strength classes, testing and acceptance are governed by the concrete standard and specification.