

Load Combinations

Civil Engineering

Why loads are factored, and how.

Limit state design factors the actions, then checks the factored effect.

Check	How loads are treated
Ultimate limit state	Factored up, strength and stability
Serviceability limit state	Unfactored, deflection and cracking
Permanent action adding	Higher factor, it makes things worse
Permanent action resisting	Lower factor, it must not be relied on
Several variable actions	Leading one full, the rest reduced
Accidental action	Its own combination, lower factors

Educational reference. Factor values differ between codes and countries. Use the standard in force for the project.