

How do these materials compare to conventional concrete?

Conventional concrete combines cement, aggregate, water, and supplementary cementitious materials such as fly ash, slag, or recycled aggregate. It remains the dominant material for foundations, floors, and walls in BC due to its structural strength, versatility, and local availability. Recent innovations include low-carbon cements and advanced admixtures that enhance resilience and reduce emissions. Concrete may be site-poured or precast to lower waste and speed assembly.

Hazard Resilience

Wildfire



Fire-resistant, with 2-4 hour fire ratings.

Rain and Floods



Water and mold-resistant. Needs protective coatings and sealing to prevent damage.

Windy



Strong wind-resistance, esp. if steel-reinforced.

Extreme temperatures



High thermal mass but additional insulation needed.

Seismic



Resistant if reinforced with steel.

Why consider alternatives?

While cement is widely available, strong, and generally reliable, cement production is **emissions-intensive** and globally accounts for about 7% of greenhouse gas emissions. Although lower-emissions processes are being developed, many other building materials, like straw bale and cob, are much more environmentally friendly. While cement is fire-resistant, some of the alternatives (such as AAC) have **higher fire ratings**. Furthermore, concrete tends to be very heavy, requiring heavy-duty and expensive equipment to construct with. Many alternative building materials are **easier to work with**, even for novice builders.