

CONCRETE PARKING AREAS: SUPERIOR PERFORMANCE. LASTING VALUE.

Whether they are for a public facility, commercial development, business, or multi-family housing project, parking areas are an integral part of total site development. In the broad context of a building's construction and financing, using concrete for parking areas holds clear advantages for project owners.

With its proven durability, reduced maintenance requirements, straightforward design, ease of construction, high-quality aesthetic, enhanced safety benefits and lower carbon footprint, a concrete parking area will deliver superior performance and lasting value.



1. Strong and Durable, with Reduced Maintenance

No other paving material approaches concrete's strength and durability in standing up to heavy usage, truck traffic and seasonal stresses. Concrete pavement lasts longer and requires less maintenance over its 30 - 50-year service-life than asphalt:

- Its rigid surface does not rut, washboard or shove. It minimizes the potential for potholes. It provides better load distribution, making it less susceptible to damage from heavy vehicles — this is becoming all the more important for a wide range of public, commercial and residential applications as electric vehicles, which are heavier than gas-based vehicles, become increasingly prevalent.
- It stands up to seasonal stresses: concrete mixes are tailored to specific applications and conditions, including cold weather and de-icing agents.
- It retains its structural integrity and performance better than asphalt, even when inundated by floods. This is because concrete pavement doesn't rely as much on the strength of the underlying granular material and subgrade as asphalt does and thus is less affected by the saturated subgrade and aggregate layers.



2. Cost-Effective

Lifecycle cost analyses (LCCA) — which take into account the estimated costs of a project over its entire service-life, including initial costs, maintenance, rehabilitation, reconstruction and salvage value of pavements — consistently rank concrete as a “best-in-class” paving solution:

- Concrete's durability over the course of its long lifespan reduces the need for expensive maintenance and repairs such as resurfacing, patching or surface sealing.
- It can be placed in a single lift while asphalt is placed in multiple lifts depending on its thickness, saving time and money.



Cummins Fort McMurray Yard Reconstruction 2022 —
ACI Awards of Excellence in Advanced Concrete Construction



3. Lower Carbon Footprint

Concrete has a superior environmental performance on many metrics such as durability, reduced use of raw materials, and carbon uptake — and an action plan to achieve net-zero by 2050:

- Its carbon footprint has been reduced by well over 20% over the last 30 years: the manufacture of modern cement — concrete's essential ingredient — is more energy efficient; lower-carbon cements like Portland-limestone cement reduce emissions by up to 10% compared to traditional cement; and the use of low-carbon supplementary cementitious materials that would otherwise be destined for landfills replaces 20% or more of the cement required to produce one cubic meter of concrete.
- Through a natural process called carbon uptake, concrete sequesters carbon dioxide from the atmosphere over its entire life, further reducing its carbon footprint as well as nearby pollution levels. Studies show that up to 20% of cement process emissions are re-absorbed into a concrete product.

ADVANTAGES
of Concrete Pavement for Parking Areas

4. Environmentally Friendly

Beyond its lower carbon footprint, concrete holds several other important benefits for the environment:

- It is produced locally from abundant natural resources.
- It is 100 % recyclable and re-usable: at the end of its service-life, it can be crushed and used as a natural aggregate for road-base. This reduces the need to dispose of old material in landfills and to extract new virgin aggregate material.
- Concrete pavement requires a thinner granular base than asphalt. This too reduces the need for new virgin material and the associated environmental impacts. And it is cooler in the summer, which helps reduce the “urban heat island” effect.
- Being an inert material, concrete doesn’t emit fumes, which means less air pollution.

5. Enhanced Safety

- Concrete’s strength means virtually no potholes or ruts.
- Its heat retention property means less potential for flash freezing and “black ice” in winter.
- Its reflective surface means brighter and safer surroundings for pedestrians and drivers at night (and a lower lighting cost).

6. Versatility and Upscale Appearance

- Concrete’s versatility means it can be designed with an array of decorative textures, shapes, patterns and colors.
- Its clean look creates a good first impression and lasting sense of quality for customers, tenants and employees.

FIND OUT MORE ABOUT Concrete Pavement >



7. Ease of Construction

Concrete paving technology continues to advance, making concrete construction quicker and more efficient than ever:

- Innovations such as slipform paving machines offer the highest production rates of any construction method and yield uniform, durable surfaces.
- Advances in finishing methods such as laser screeding combine precision and speed to lower installation costs and produce highest-quality results.



City of Vaughan Fire Station 7-3 and EMS Station 31 Parking Lot in 2019



Designing Quality Concrete Parking Areas

National Ready Mixed Concrete Association



LCCA Standards Practice

Stantec Consulting Ltd.



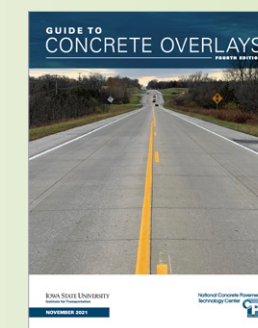
Concrete Pavements: Key Technical Resources Directory

Cement Association of Canada



Guide to Concrete Overlays

Iowa State University and National Concrete Pavement Center



Cement Association of Canada Expertise Center

Transportation Infrastructure



Technical Introduction to Portland-Limestone Cement

Cement Association of Canada

