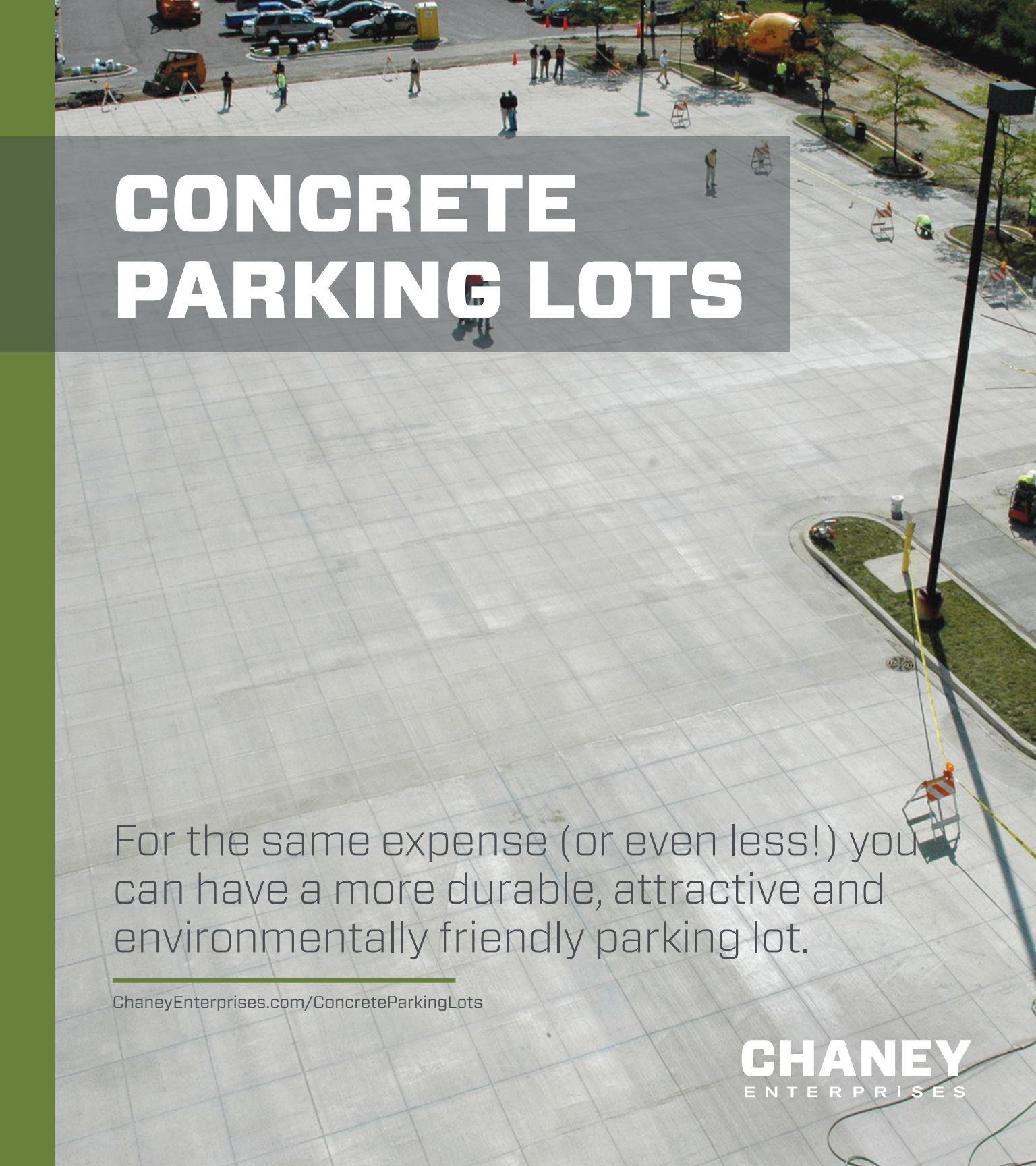

# CONCRETE PARKING LOTS

For the same expense (or even less!) you can have a more durable, attractive and environmentally friendly parking lot.

ChaneyEnterprises.com/ConcreteParkingLots

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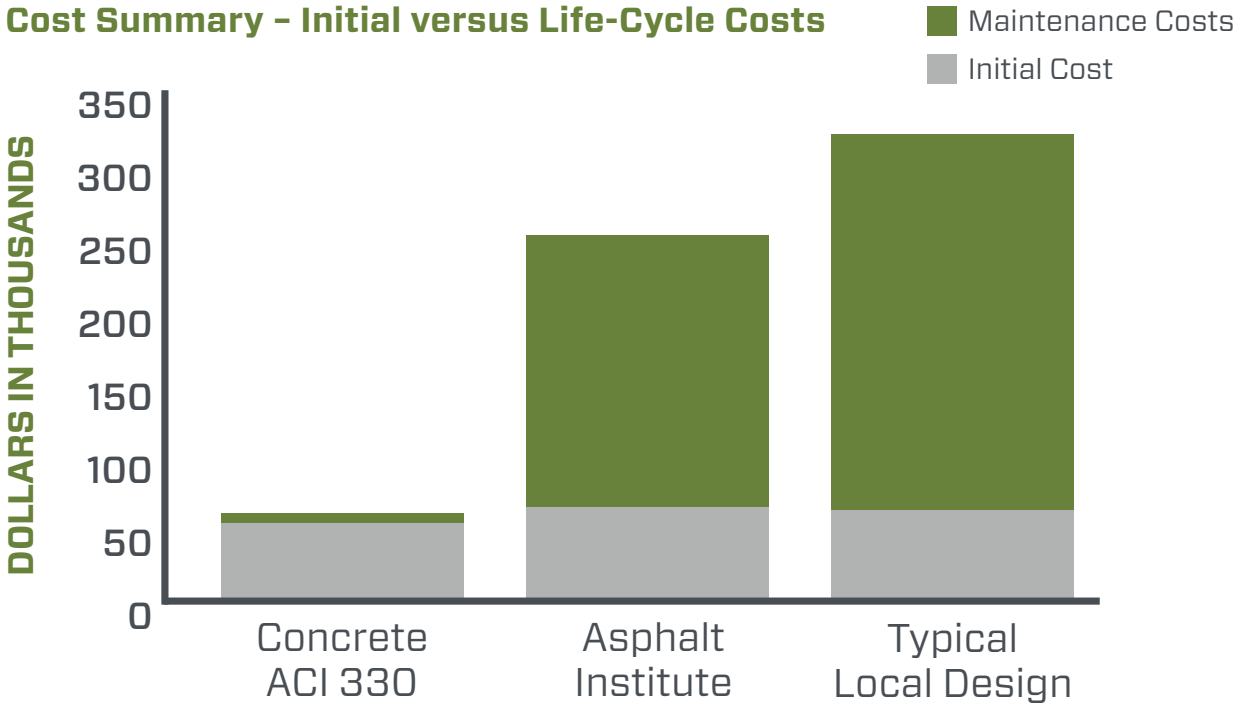
## INITIAL COSTS

# Design, Placement and Materials Costs

While concrete has always made the most long-term sense, advances in concrete pavement design and placement, coupled with the rising cost of liquid asphalt, have made the initial costs of concrete about the same, often beating asphalt (*See Figure 1*).

*Figure 1*

**Cost Summary – Initial versus Life-Cycle Costs**



## Design Improvements

By following the latest designs from the American Concrete Institute's 330R-08, you can save costs by having:

**No Subbase** – Concrete is a rigid pavement and deflects forces outward, while asphalt is a flexible pavement which deflects forces downward (*See Figure 3*). An imported subbase, while necessary for asphalt, is often no value for the stronger and more durable concrete (*See Figure 5*). This not only saves money on the subbase, but also decreases excavation costs. (330R-08, section 3.4)

**No wire mesh** – Wire mesh provides "no useful effect on the load-carrying capacity" of concrete. A proper jointing design and execution will control cracking. (330R-08, section 3.6.1)

**No Joint Sealing** – Joints are often left unfilled with a corresponding closer joint spacing and more narrow joints. (330R-08, section 3.9)

**Less Lighting** – Because concrete parking lots are brighter and reduce lighting needs by about 30%, fewer lighting fixtures are needed, decreasing material and labor costs.

**Download our Parking Lot Design Guide at ChaneyEnterprises.com/ConcreteParking**

## Placement Technology

Concrete paving equipment has come a long way over the years, including the advent of equipment like 3D laser screeds, which reduce crew size and increase production rates.

The use of an integral curb placed at the same time as the parking lot eliminates the need for additional subcontractors and increases efficiency.

## Rising Costs of Asphalt

Asphalt costs fluctuate enormously. Typically, labor and materials are quoted separately because asphalt costs can spike so quickly. Prices of liquid asphalt are more than double what they were ten years ago and are only expected to rise as the economy improves.

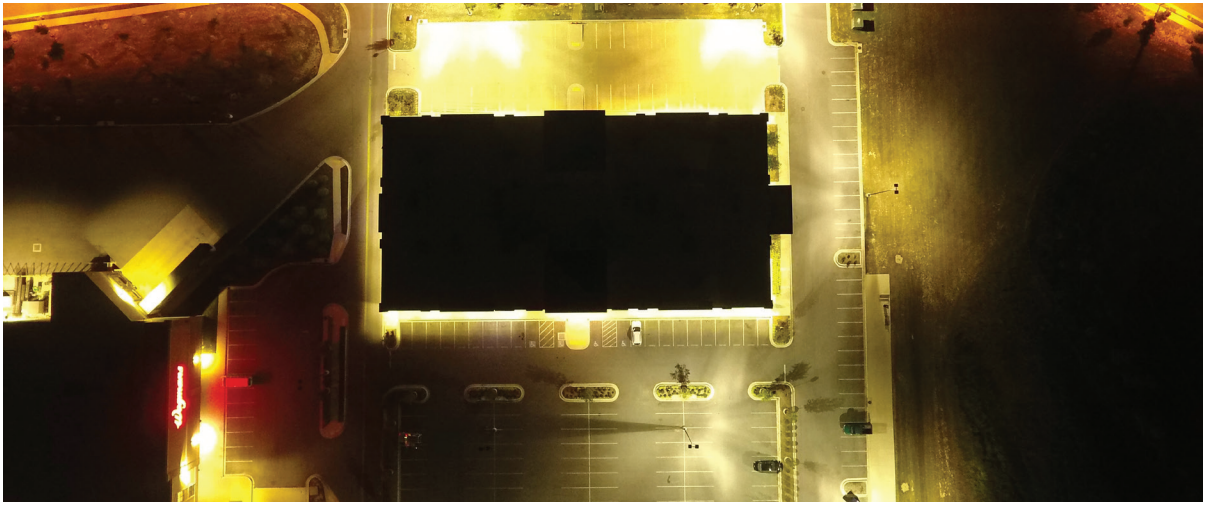
# LIFE-CYCLE COSTS

While the initial costs of asphalt and concrete are similar, there is no competition in terms of the long-term costs (*See Figure 1*).

## Lighting

In addition to the initial cost savings mentioned on the left page, concrete's reflective surface decreases lighting energy up to 30%—a savings the owner can keep for the life of the project.

***Figure 2***



*ABOVE: One side of this building was done in concrete, the other in asphalt. Even with more installed lighting on the asphalt side, it is far darker than the concrete side.*

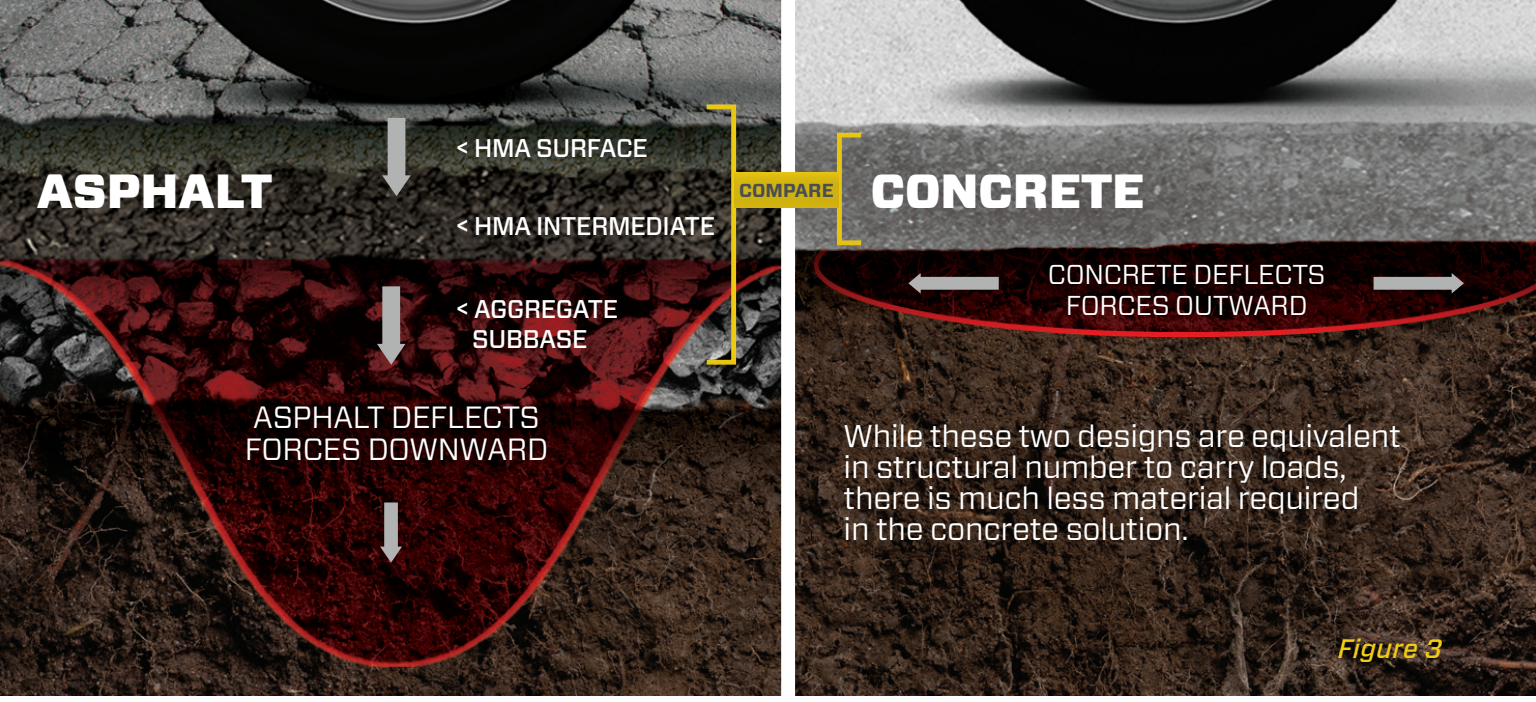



*Figure 3*

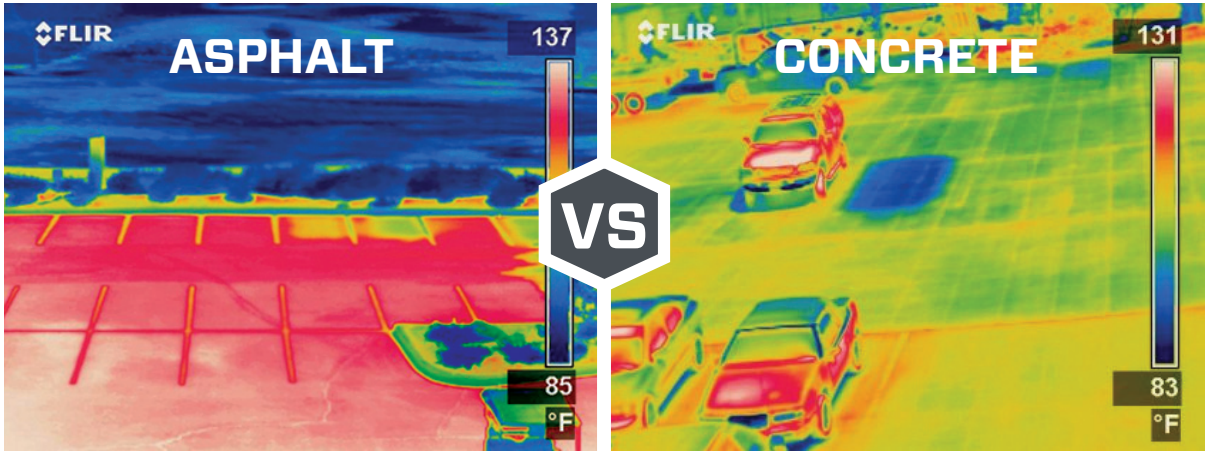
## Less Maintenance

Increased strength and durability means less maintenance, as concrete parking lots can last decades longer.

## Air Conditioning

The cooler, more reflective pavement decreases ambient temperatures by about 7 to 10 degrees, which slashes peak loads during those hot summer days.

*Figure 4*




*ABOVE: This parking lot was given a concrete overlay of the old asphalt which considerably cooled the parking lot.*

# ENVIRONMENTALLY FRIENDLY

**When we can be green and save green too, it's a no-brainer. Not only will concrete parking save the owner money, but concrete provides many other environmental benefits:**

## Recycled Content

By maximizing the use of fly ash and slag to replace Portland Cement, parking lots significantly increase the use value of the recycled content.

## Strong and Durable

Concrete's strength often means less material is needed to do the same job. Increased strength leads to increased durability. While other materials might need constant replacement, concrete can last decades longer.

## Less Raw Materials

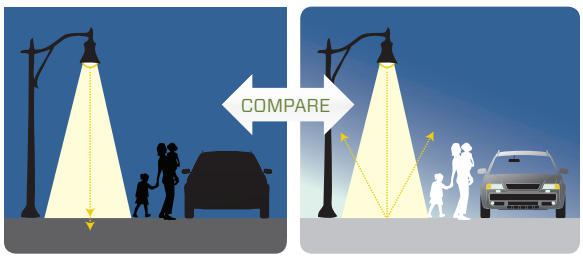
*Figure 5*

| COMPARISON CHART | | Inches of Material | Layer Coefficient | Structural Number |
|---|---|---|---|---|
| Asphalt | HMA Surface | 2.00 | 0.34 | 0.68 |
| | HMA Intermediate | 4.00 | 0.36 | 1.44 |
| | Aggregate Subbase | 6.00 | 0.14 | 0.84 |
| Total for Asphalt | | 12.00 | | 2.96 |
| Equivalent Concrete | | 5.92 | 0.5 | 2.96 |

Concrete's strength usually means eliminating the need for subbase materials—and it also means you use less of it. In Figure 3, Structural Numbers are used to compare equivalent pavements, showing that 12 inches of an asphalt solution is equivalent to less than six inches of a concrete solution with the same Structural Number.

## Concrete's Reflectivity

*Figure 6*




Concrete's reflectivity reduces the urban heat island effect, which in turn cuts down the energy needed to light the parking area as well as cool a building on peak energy-demand days. The reflective surface also invites a safer environment, which is especially important for banks, retail and educational establishments.

## Regional Materials

Concrete is made from raw materials that are mined right close by, decreasing fuel and energy needed for transport and also feeding the local economy. Additionally, because wet concrete can only travel short distances, plants are local and support their local communities and economies.

## Recyclable

When concrete is finished with its long service life, it can be recycled. Alone, Chaney Enterprises processes more than 100 million pounds of recycled concrete each year.

# FAQ'S

## How can I get ACI 330 design help?

We provide a Professional Development Hours (PDH's) approved parking lot design class. We also participate in a national Design Assistance Program (DAP) which make a concrete design free within our market area. All we need is a geotechnical report and any other project details readily available. Call 888-244-0750, ext 5885, or email info@ChaneyEnterprises.com for more details.

## What appearance/finish options are there?

Concrete surfaces can be placed with an array of textures, shapes, patterns and colors. Virtually any style or finish you can dream of is possible. Chaney Enterprises offers a PDH class on decorative concrete to learn how to specify different options.

## How can I keep my surface clean?

The better protected the surface, the easier it is to clean and maintain. Chaney Enterprises highly recommends the use of a quality surface sealer.

## How do I protect against freeze/thaw conditions?

ACI 330.1-03, Specification for Unreinforced Concrete Parking Lots, recommends ACI air entrainment and 4,000 psi concrete in our climate. This, coupled with quality placement per ACI 330.1-03 specifications and a quality sealer, will increase your concrete's resistance to external forces.

## How can I be sure I will get a quality end product?

If followed, ACI 330.1-03, Specification for Unreinforced Concrete Parking Lots recommends ACI certified finishers with ACI testing of the concrete. For the subgrade, it recommends density testing per ASTM D698 or D1557.

## Are there ways to save even more?

Roller Compacted Concrete (RCC) is an even more economical way to place concrete. This concrete does not have the same finish as traditional concrete, but it's just as durable and offers significant cost savings. This is especially applicable in industrial settings.

**Additional products:**

- ChaneyCrete (Ready Mix Concrete)
- Sand, Gravel, & Stone Biosoils
- Colored Concrete
- Drain-Crete (Pervious Concrete)
- Insulated Concrete Forms (ICF)
- Reli-A-Fill (Flowable Fill)
- Self-Consolidating

**Check out our construction supply division, BuilderUp, for all your needs:**

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