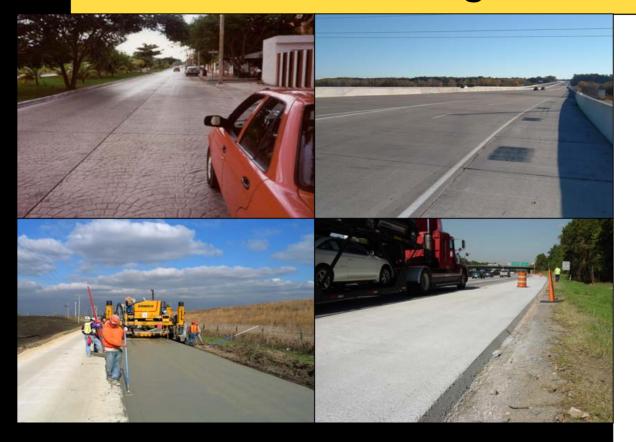


Portland Cement Concrete Surfacings

3.0



Traffic Range:

No limitations on traffic volumes for most surfacings.

Life Expectancy:

30 years or more for most surfacings.

Unit Price:

Material and installation costs are typically higher than for asphalt surfacings.

Appearance:

PCC surfacings typically has a smooth surface texture and light gray color. Surface appearance can be modified by using pigments or stains or finishing techniques.

Advantages:

Long life; Very good ride quality; Low maintenance requirements.

Limitations:

High initial cost; Initial construction is time and labor intensive.

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Product Description: Portland cement concrete (PCC) is a mixture of aggregate, cementitious material (portland cement, fly ash, silica fume, ground blast furnace slag, etc.), and water that forms a rigid, paved surfacing. Portland cement concrete pavements (PCCP) have very good performance characteristics with respect to strength, durability, and ride quality.

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Cellular Portland Cement Concrete





Cellular PCC concrete placement.

Photo Source: Presto Products Company Traffic Range:

Typical AADT<1,000.

Life Expectancy:

20 years.

Unit Price:

Material & Installation: \$16.00 to \$20.00/m² (\$13.40 to \$16.70/yd²).

Appearance:

Cellular PCC typically has a fine surface texture and light gray color. The geosynthetic cellular support system is not visible in the completed surface.

Advantages:

Supports heavy loads; Does not require steel reinforcement.

Limitations:

Initial cost is higher than for aggregate filled system; Requires cellular confinement system setup prior to concrete placement.

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Product Description: Cellular Portland cement concrete consists of a geosynthetic, honeycomb-like, cellular confinement system (geocells) that is filled with Portland cement concrete (PCC). Once constructed, the cellular mat is composed of numerous individual concrete blocks. The resulting product is a flexible surfacing that can support heavy loads.

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Exposed Aggregate PCCP



Traffic Range:

No limitations on traffic volumes.

Life Expectancy:

30 to 40 years.

Unit Price:

Material & Installation: \$145 to \$200/m³ (\$110 to \$150/yd³).

Appearance:

Appearance is influenced by the coarse aggregate color. Surface texture is coarse.

Advantages:

Appearance can be controlled by careful selection of coarse aggregate; Tire/road noise may be less than conventional PCCP.

Limitations:

Higher initial cost than conventional PCCP.

Exposed aggregate PCCP entranceway.

Photo Source: Golder Associates Inc.

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Product Description: Exposed Aggregate PCCP is constructed of Portland cement concrete (PCC). At the end of PCCP construction, a thin layer of cement paste is removed from the surface to expose the coarse aggregate in the PCC mixture.

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Pigmented PCCP



Portland cement concrete pavement roadway.

Photo Source: Golder Associates Inc.

Traffic Range:

No Limitations on traffic volumes. Surface applied pigments and coatings will wear away faster with high traffic volumes.

Life Expectancy:

30 to 40 years for PCCP. 3 to 6 years for surface applied pigments or coatings.

Unit Price:

Material & Installation: \$6.50 to \$105/m³ (\$5 to \$80/yd³) for pigments, depending on color and intensity required.

Appearance:

Pigmented PCCP typically has a smooth surface texture. Surface color and intensity can be controlled by the pigment color and amount of pigment used.

Advantages:

Surface color can be selected to match the surrounding environment.

Limitations:

High initial cost than conventional PCCP.

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Product Description: Pigmented PCCP is constructed of Portland cement concrete (PCC). The pigment can be incorporated in the concrete mixture during mixing or sprinkled onto a freshly poured PCC surface and mixed in during the finishing process, or pigmented sealers or stains can be applied to the hardened concrete surface.

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Pigmented PCCP



Pigmented PCCP surfacing.

Photo Source: Concretenetwork.com



Pigmented PCCP surfacing.

Photo Source: Concretenetwork.com

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Portland Cement Concrete Pavement





Portland cement concrete pavement roadway.

Photo Source: Golder Associates Inc.

Traffic Range:

Very Low to High.

Life Expectancy:

30 to 40 years.

Unit Price:

Material & Installation: \$130 to \$180/m³ (\$100 to \$135/yd³). The use of pigments, stains, or finishing techniques will increase the unit price.

Appearance:

PCCP typically has a fine surface texture and light gray color. Surface appearance can be modified by using pigments or stains or finishing techniques.

Advantages:

Long life; Very good ride quality; Low maintenance requirements.

Limitations:

High initial cost; Potential for increased road noise.

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Product Description: Portland cement concrete (PCC) is a mixture of aggregate, cementitious material, and water that forms a rigid, paved surfacing. Portland cement concrete pavements (PCCP) have very good performance characteristics with respect to strength, durability, and ride quality.

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