



Roller Compacted Concrete Pavements



Constructed RCCP



Transportation



Placement



Compaction



RCC surface

Roller Compacted Concrete Pavement (RCCP) refers to concrete pavement that is placed and compacted in a manner similar to asphalt pavement. The performance of RCCP is similar to concrete pavements in that it has high strength and durability. It can be opened to traffic faster than conventional concrete pavements. RCCP can be a good option for rural roads, roads with low speed traffic, and roads that need to be reopened quickly.

Benefits

Durability

RCCP requires low maintenance because it resists rutting and deformation under heavy loads. RCCP resists freeze-thaw damage. For decades, RCCP has been used in cold regions of Canada and the US and has shown excellent freeze-thaw resistance.

Opening Convenience

Since RCCP is able to accept traffic shortly after installation, regular traffic flow can be restored quickly (typically in 24 hours). Light-weight traffic can be permitted even during the construction process without damaging the RCCP.

Environmental Benefits

RCCP is a light gray color like typical concrete pavement. Using light-colored concrete pavement has proven to be effective in reflecting more heat and light reducing ambient temperature and electric lighting, respectively².

Ideal Applications

- Local roads and streets, parking areas, rural roads, and industrial pavements.
- Roads with low speed traffic unless it is diamond ground or an asphalt surface treatment is applied to increase speeds.
- Arterial streets, bus lanes and highway shoulders.

Potential Limitations

The RCCP surface may be rougher than conventional concrete pavement. RCCP is better suited for high-speed traffic when it has been diamond-ground or a surface treatment has been applied to improve the smoothness.

References

1. ACI 325.10R-95, State-of-the-art Report on Roller-Compacted Concrete Pavements, ACI Manual of Concrete Practice, ACI, USA, 2001
2. Jonh Gadjia and Martha G. VanGeem, A Comparison of Six Environmental Impacts of Portland Cement Concrete and Asphalt Cement Concrete Pavement, PCA R&D Serial No. 2068, PCA, 1997
3. CP Tech Center, Guide for Roller Compacted Concrete Pavements, 2010.
4. Pictures, Indiana Ready Mixed Concrete Association, 2010.
5. LTAP, RCC manual, Indiana LTAP, 2010