RCC (Roller Compacted Concrete)

King Paving & Construction Company

Contact Us

King Paving & Construction realises the benefits of RCC as an economic, strong, durable and easy-to-use product, and can offer expert technical support surrounding its industrial application. From mixing to placement to curing, King has surfaced as an industry innovator in the application of Roller Compacted Concrete.

For More Information
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Team Work, Hard Work, Quality Work
WHAT IS RCC?
RCC (Roller Compacted Concrete) is an ultra-tough, zero-slump concrete with compressive strengths between 30 MPa and 70 MPa (4,000 psi and 10,000 psi). RCC is placed using a high-density paver to form non-reinforced, concrete pavement. RCC consists of Portland cement, coarse and fine aggregates, and water. It requires no forms, hand finishing, steel reinforcement.

When should RCC be used?
RCC pavement is best suited for industrial and commercial uses such as:

- Trucking facilities
- Scrap metal and recycling facilities
- Warehouse facilities
- Equipment storage yards
- Intermodal yards
- Compost facilities

This product can also be used for surfaces and rehabilitation of residential streets, industrial access roads, high-traffic intersections, highway shoulders, parking lots, and Airport aprons or taxiways.

Procedure
Mixing: RCC pug mill plant has the efficiency to evenly disperse the relatively small amount of water that is present in the stiff, dry mix.

Transport: Dump trucks transport the RCC mix from the plant to the high-density paver.

Placement: The mix is placed at 100 mm (4 inches) to 250 mm (10 inches) thick. It can also be placed in layers, in applications requiring a thickness over 250 mm (10 inches).

Compaction: This is the most important step in RCC construction because compaction promotes the product’s high density, substantial strength, smoothness and favourable surface texture. The compaction process begins immediately after placement. Vibratory steel drum and rubber tire roller compaction continues until the pavement meets the target density requirements.

Curing: RCC pavement must be cured to ensure proper and optimal strength gain.

Joint Saw-Cutting: Though optional, if joint saw-cutting is to be completed, it is performed shortly after the target density has been achieved.

Solutions Provided
Low Initial Cost
- Cost competitive with alternative pavement options
- Highly durable, resistant to rutting, and will not deform under heavy, concentrated loads
- Resists deterioration from fuel and hydraulic fluid spills
- Performs well in climates with freeze-thaw cycling
- Supports heavy, repetitive loads without failure
- Spans localized, soft, subgrade areas

Reduced Down-Time
- Fast return-to-service for rehabilitation projects

Low Maintenance Needs
- No need for surface sealing or overlays
- Results in fewer associated costs

Key Features
Speedy construction: No forms, finishing or extensive labour required, resulting in quick placement. Low water: cement ratio and zero slump consistency, resulting in quick strength gain.

Quick return-to-service: Open to local traffic in as little as 24 hours after placement, and can accept heavy traffic 24 to 72 hours after placement.

Light colour: Reduces surface heat effect and lighting requirements in parking or storage areas.

Strength:
- High compressive strength (30 MPa – 70 MPa; 4,000 psi – 10,000 psi), high flexural strength (4 MPa – 7 MPa; 500 psi – 1,000 psi), high shear strength and low shrinkage.

Simplicity of design and construction: No steel reinforcement, forms or hand finishing required. Aggregate interlock provides excellent load transfer and eliminates the need for dowels. Joint sawing is optional and for aesthetic purposes.

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