

Postten

Continuous Reinforced
Concrete Pavement

PATENT: ZAR 2011/08865

Postten

- Acronym for Post tensioned.
- Concrete pavements can be improved.
- JRCPC (joint reinforced concrete pavement)
- used 40 years ago.
 - Transverse cracks & wide joints.
 - Less than ideal lifespan

CRCP

- (Continuous Reinforced Concrete Pavement)
- Accepted World Wide as most durable to date



CRCP

- Y20 typical rebar
- Y16 dowels connects lanes - dowel dependant
- Construction long and costly
- Large areas - large machinery
- Concrete logistics
- Different weather – different thermal curing gradients
- Truck axles place separate loads on separate lanes
- Only longitudinal rebar no transverse
- Site access for paving path and mixer trucks
- Contraflow restrictions
- Work zone very busy
- Curing tents always breaking
- Sand blasting time and costs

CRCP

- Busy work zones



PCPS

(Precast Concrete paving System)

- Factory cast and cured
- Quality control constant
- Precast months in advance
- Limited to Transport regulations
- Post tensioned cable system
- Uses Dowel for joining lanes

HYBRID

- Need to embrace both systems
- Need major CRCP benefits, long life
- Need PCPS quality and short construction time
- Remove dowel system

Postten

- Y20 longitudinal rebar
- Y16 transverse connects lanes – creates rebar mesh
- Ref 395 mesh top and bottom – added structural integrity
- Construction very fast and easy
- Large areas – single medium or truck crane
- NO Concrete logistics
- Weather does not affect
- Truck axle loads on shared equally
- Less Contraflow restrictions due to smaller areas
- Work zone not busy
- No Curing tents
- No Sand blasting
- Can load after grouting
- Can line paint and road stud in factory, saving time

Postten

- EASY work zones



Postten

- EASY work zones



Postten

- complete



Comparison

CRCP construction time

Postten construction time

Days

HOURS

Hand over and fix steel - 2

Set level equipment - 1.5

Cast spray membrane - 2

Place 24 slabs - 8

Remove tent and cure - 7

Place 26 slabs and grout - 10

Sand blast and clean - 2

Complete grout and clean - 8

150 meters

13

150 meters

85 % time save

20

CONCEPT

- **Simple precast slab with tube voids**
- **Recessed cone voids to receive rebar connectors**
- **Transport to site**
- **Place on shims to keep final road level**
- **Insert rebar "torque rods" into tubes**
- **Torque up to spec**
- **Pump colloidal grout into all voids and underside of slabs**
- **Allow to cure**
- **LOAD IT**

Torque rods



APPLICATIONS

- **1 2 3 4 5 6 lane roadways**
- **Container yards**
- **Harbours**
- **Runways, aprons**
- **Hard standing areas.**

ends